2016 IDAHO PRIMARY CARE NEEDS ASSESSMENT

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Executive Summary

Objectives

The objective of the Idaho Primary Care Needs Assessment is to identify communities with the greatest unmet health care needs, disparities, and health workforce shortages across Idaho, and identify key barriers to health care access for Idaho communities in terms of preventative and primary care. The principal focus of the needs assessment is upon primary care services, defined as family medicine, general medicine, internal medicine, pediatrics, and OB/GYN specialties.

The first section of the Idaho Primary Care Needs Assessment examines 47 primary care health indicators subdivided into three categories: health status, health care access, and health risk behaviors. Subsequent sections of the needs assessment review federal Health Professional Shortage Area (HPSA) and Medically Underserved Area and Population (MUA/MUP) designations, programs and resources in Idaho relevant to preventative and primary care access and improvement, as well as primary care educational opportunities and advanced medical training programs available within the state.

Limitations

Due to the method of data collection and small populations in some of Idaho's rural and frontier counties, sufficient sample sizes for some counties could not be acquired from selected health indicator data sets to conduct analysis and draw reasonable, valid conclusions. As a result of these insufficient sample sizes (less than 20 observations) for some chosen health indicators, caution is urged not to draw specific conclusions based solely on those estimates, as doing so may not be representative of the population group identified.

Also as a result of a change in weighting and methodology in selected indicator data sets, as well as the availability of data, information was drawn from a number of sources. BRFSS data from 2011 and later should not be compared to data collected in 2010 and preceding years due to the methodology change.

Findings

According to the chosen method of analysis using the selected health indicators, the quartile ranking table exhibits where the areas of greatest need exists for primary care services and healthcare programs to overcome health care barriers and associated outcomes. Shoshone, Nez Perce, Clearwater, Caribou, and Benewah County exhibited the worst health status among the 44 Idaho counties. In contrast, Madison, Blaine, Teton, Valley and Ada County were shown to have the best health status outcomes in the state.

Using the results from the chosen indicators and method to measure health access, Boise, Adams, Owyhee, Payette, and Clearwater County displayed the greatest need for improved health access, while Elmore, Nez Perce, Ada, Blaine, and Bannock County were shown to provide the best health care access in Idaho. With regards to health risk behaviors, Oneida, Madison, Bear Lake, Jefferson, and Boise County indicated populations with minimal risk behaviors, while Shoshone, Owyhee, Elmore, Lemhi, and Teton

County presented populations demonstrating the highest prevalence of lifestyle behaviors detrimental to health outcomes among Idaho counties.

Although the method of analysis and indicators selected for the Idaho Primary Care Needs Assessment differed from other available models based on its intended focus (primary care versus overall community health), the results from the assessment closely resembled published findings such as the Robert Wood Johnson Foundation and University of Wisconsin Population Health Institute's *County Health Rankings & Roadmaps* (www.countyhealthrankings.org). The similarities between the assessment with models such as *County Health Rankings & Roadmaps* can largely be attributed to using a comparable approach incorporating a number of factors related to population health, in many instances derived from the same state and federal data sources.

Conclusions

Health is a qualitative value, not a quantitative value. As such, it is influenced by a number of dynamic values and beliefs residing within the population as well as health access and socio-demographic factors not accounted for in current shortage designations. Primary care is but one interrelated component of an inclusive system shaped by the environment.

Shortage area designations play a critical role in directing many state and federal resources, including but not limited to the National Health Service Corps (NHSC) and increased Medicaid and/or Medicare reimbursement for services provided by primary care providers practicing in geographic HPSAs, Community Health Centers and Look-a-Likes, Critical Access Hospitals (CAHs), and Rural Health Clinics (RHCs). However, true health access and outcomes are not simply determined by geographic population to provider ratio. The health assessment findings suggest that while current federal shortage designations are valuable in determining provider shortage serving a geographic area or population, these designations alone do not necessarily provide an accurate assessment tool for identifying or indicating geographic areas or population groups with a deficit of primary care services, overall unmet health care needs, and disparities to improve Idaho's healthcare system and population outcomes.

Recommendations

Through the infusion of roughly $224 million appropriated by the American Recovery and Reinvestment Act (ARRA) of 2009 to the NHSC loan repayment and scholarship programs, as well as a $75 million appropriation for loan repayment renewals in 2011, the Health Resources and Services Administration (HRSA) was capable of reducing program limitations and expanding funding to support a greater number of clinicians working with underserved populations in HPSA scores as low as 8 in 2008 (The National Council for Community Behavioral Healthcare, 2009).

With funding associated with ARRA being spent, funding for loan repayment and scholarship awards has declined, forcing the program to implement greater HPSA score cutoffs for ranking provider applications. Within the most recent FY2013 and FY2014 NHSC loan repayment application cycles, all available awards were made to providers serving geographic areas or populations located within a

Health Professional Shortage Area (HPSA) designation score of 14 or above (National Health Service Corps). As dedicated funding for the NHSC, Teaching Health Center Graduate Medical Education program, and Community Health Centers (CHCs) from the Affordable Care Act (ACA) is set to expire in September 2015, concern for the future stability and viability of these programs grow (American Academy of Family Physicians, 2014).

Of the eight counties identified in the assessment exhibiting greatest overall need, only four counties (Nez Perce, Owyhee, Payette, Shoshone) possessed Primary Care HPSA designation scores great enough (14 or above) for loan repayment award based upon the current funding appropriation for the program. Similarly, among the 11 Idaho counties which ranked within the bottom quartile of the assessment for health status, access, and risk indicators combined, only six (Lincoln, Owyhee, Payette, Power, Shoshone, Washington) reflected a Primary Care HPSA score allowing for participation with the NHSC. Of the twenty-two Idaho counties above the median using combined rankings of health status, access, and risk indicators, ten had a primary care HPSA score of 14 or above. To overcome barriers and effectively improve the quality of health for all Idahoans, current resources dedicated to this purpose at both the federal and state level must be available and aligned with an accurate assessment tool to identify areas of greatest need and support primary care providers and services.

To address this disparity occurring between methodology and programs currently implemented to identify and address areas of greatest need, further assessment and studies are suggested to be directed towards:

- Preventative care and health care access for low-income patients;
- How primary care physician shortages may or may not contribute to health outcomes;
- Impact of the Patient Centered Medical Home (PCMH) model of care implemented by the Idaho State Healthcare Innovation Plan (SHIP) in improving area health outcomes;
- Formation of a centralized and/or collaborative statewide health data and analytics system compiling and reviewing information from additional points of care such as Emergency Medical Services (EMS);
- The differences between counties identified within this assessment demonstrating greatest need as compared to other Idaho counties, as well as identified trends in surrounding states;
- The perspective of populations and clinicians on barriers to care;
- Population and appraisal of the sufficiency of healthcare systems in improving health status;
- Whether HPSAs effectively identify and measure high need areas and populations;
- Current standard of care practices for health professionals in areas with a sufficient workforce, yet poor health outcomes;
- The effectiveness of the NHSC program in improving access to care, health outcomes or status;
- Effective methods to develop and maintain patient education and engagement;
- And the availability and importance of specialists and specialty care in Idaho in relation to primary care, as well as the number and type of professionals needed to achieve comprehensive interdisciplinary care.

At this time, it is suggested this assessment be utilized by the PCO to guide resources such as the Rural Health Care Access Program (RHCAP), Rural Physician Incentive Program (RPIP), and Idaho State Loan Repayment Program (SLRP) to support primary care providers, programs, and entities that serve within qualified shortage areas with poor health outcomes, but do not receive assistance due to HPSA scores falling below HRSA funding levels.

Looking ahead, a key component to address health workforce development issues, establish a strong primary care delivery system, and eliminate identified health access barriers begins with having a strong education system in place to attract and prepare students for health care professions. A number of healthcare professions require some form of higher education. As many Idaho students struggle academically following high school as the Idaho Department of Education has articulated, continued efforts should be made statewide to improve educational outcomes for kindergarten through 12th grade as well as post-secondary education. Expansion of health career pipeline programs and opportunities available for both urban and rural residents within the state should be explored.

Most importantly, federal, state, and community partners are encouraged to continue to work together to avoid "silo effect", or a lack of effective communication and support directing resources towards facilitating common, collaborative goals. As the Office of Rural Health Policy (2010) acknowledges, "community, administrative, and medical leadership must recognize that the local system of health services is best served through collaborative approaches rather than competitive ones" (p. 3). Many opportunities exist within the changing healthcare landscape for potential collaboration in areas such as health information technology and establishing a patient centered model of care, as well as developing projects for grant opportunities that promote health education and improve patient quality. Together, we can make Idaho a healthier state.

Section I: Introduction

The Idaho Primary Care Office (PCO) is located within the Bureau of Rural Health and Primary Care, Division of Public Health, Idaho Department of Health and Welfare. Within the Bureau of Rural Health and Primary Care, the PCO strives to ensure quality, affordable health care for rural and underserved populations in Idaho, define where shortage areas may exist, and to describe access, disparities, capacity and utilization in healthcare systems across Idaho. To accomplish this endeavor, the bureau disseminates information, manages programs, conducts analysis, and provides resources relevant to improving rural health and primary care in Idaho in partnership with various partners in accordance with federal and state law.

Purpose of Needs Assessment

The purpose of the Idaho Primary Care Needs Assessment is to identify geographic areas and populations with the greatest unmet health care needs, disparities, and health workforce shortages, as well as key barriers to primary health care access for these communities at county and sub-county levels. As cited by Donaldson, Yordy, and Vanselow (1994), by the definition adopted by the Institute of Medicine, Primary Care is the provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community (p. 15). It not only serves a vital function as the first point of contact and ongoing source of care for patients in a healthcare delivery system, but coordinates specialty care delivery as well. By conducting this assessment, the Idaho PCO may be able to appropriate limited resources with greater efficiency and effectiveness to strengthen primary care delivery across the state. This needs assessment will serve a critical function in prioritizing areas of greatest need, serving as a baseline from which to:

- Determine historical activities to overcome health care barriers and their outcomes,
- Identify partners to assist in the implementation of activities and timelines that will reduce health care barriers in Idaho in populations of greatest need,
- And spur community discussions to identify additional health care barriers.

By using empirical data to support potential strategies to overcome health care barriers, the needs assessment will improve appropriation of resources to geographic areas and populations at county and sub-county levels which:

- Lack access to preventive and primary care services;
- Experience shortage of primary care, mental health, and dental providers;
- Experience key barriers to access to health care (i.e. waiting time, travel time);
- Demonstrate the highest need for health services.

Data Sources and Limitations

The health indicator analysis in the Idaho Primary Care Needs Assessment primarily includes information from Idaho Bureau of Vital Records and Health Statistics data systems such as Vital Statistics, the Behavioral Risk Factor Surveillance System (BRFSS), and the Pregnancy Risk Assessment Tracking System (PRATS). Other sources used in health indicator analysis include point-in-time data sets received from the Health Resources and Services Administration (HRSA) Area Health Resource File (AHRF), Idaho

Department of Health and Welfare's Division of Medicaid, as well as poverty level estimates derived from the U.S. Census Bureau Small Area Income and Poverty Estimates (SAIPE) Program. Most Idaho Bureau of Vital Records and Health Statistics data systems also collect information at a public health district level; therefore, due to the method of data collection and small populations in some of Idaho's rural and frontier counties, sufficient sample sizes for particular counties could not be acquired from Vital Statistics and the BRFSS for certain health indicator data sets to conduct analysis and draw reasonable, valid conclusions.

To ensure valid data sets with sufficient sample size for each county, life expectancy and morbidity rates from Idaho Vital Statistics are based on five-year aggregate data collected from 2009-2013, and are age-adjusted to allow population comparison. Due to insufficient sample sizes (less than 20 observations) for some Vital Statistics mortality rates, the assessment takes caution not to draw conclusions based solely on those estimates, as doing so may not be representative of the population group identified. As a result of a change in BRFSS weighting methodology, as well as inclusion of cell phone respondents to the BRFSS survey in 2011, only prevalence data collected from 2011 and later from BRFSS was used for analysis in this assessment. BRFSS data from 2011 and later should not be compared to data collected in 2010 and preceding years due to the methodology change.

Idaho Shortage Designation information is based on surveys conducted by the Idaho Primary Care Office (PCO), federally mandated by the U.S. Department of Health and Human Services, Health Resources and Services Administration (HRSA). In addition to data available to the Idaho PCO, the authors of this assessment also collaborated with statewide partners from the Boise State University Center of Health Policy, Family Medicine Residency of Idaho, and Idaho Primary Care Association regarding respective Idaho primary care workforce data, and information on delivery services across the state.

To make certain of the quality of data regarding primary care educational opportunities and residential programs, authors of the assessment sought input and were assisted in their research efforts through information provided by administrators of the Bingham Memorial Hospital Internal Medicine Residency Program, Family Medicine Residency of Idaho, Idaho State University Family Medicine Residency Program, Kootenai Health Family Medicine Residency Program, and University of Washington – Boise Internal Medicine Residency Program at the Boise Veterans Affairs Medical Center.

Section II: State Overview

Idaho is the 11th largest state in the nation in terms of land area, and ranks 39th in total population according to data from the 2010 Census. The state contains 44 counties, the largest of which is Idaho County (8,477.35 square miles). The state's most populous county, Ada County, has a total population of 416,464 according to 2013 annual estimates published by the U.S. Census Bureau, and is home to the state's largest city and capital, Boise (United States Census Bureau, 2014). Using 2013 data from U.S. Department of Health and Human Services Division of Shortage Designation's "State Population and HPSA Designation Population Statistics", CQ Press ranks Idaho 13th nationally in percent of population lacking access to primary care services at 17.4%, 6.5% greater than the national average (SAGE Publications, Inc., 2013).

From rural definitions established by the Idaho Department of Commerce as cited by Salant and Porter (2005), 35 of 44 Idaho counties (79.5%) are defined as rural, lacking population centers of over 20,000 residents (p. 5). Furthermore, 6 or fewer people per square mile reside within 16 of Idaho's 44 counties (36%), granting them classification as frontier counties. In addition to being sparsely populated, Idaho is riddled with mountainous terrain, complicating travel for Idaho residents and presenting a unique challenge to health care access. More than 15% of roads across the state have a grade between 5 and 10%, and over 24% of Idaho roads have a grade exceeding 10%. According to a May 2014 report published by TRIP (2014), approximately 11% of Idaho's major roads are in poor condition; moreover, roughly 40% of Idaho's major urban highways are over-utilized (p. 2). Poor road conditions and terrain not only play a critical factor in many traffic fatalities and costly accidents, but can also hinder emergency response times and patient travel to health care providers.

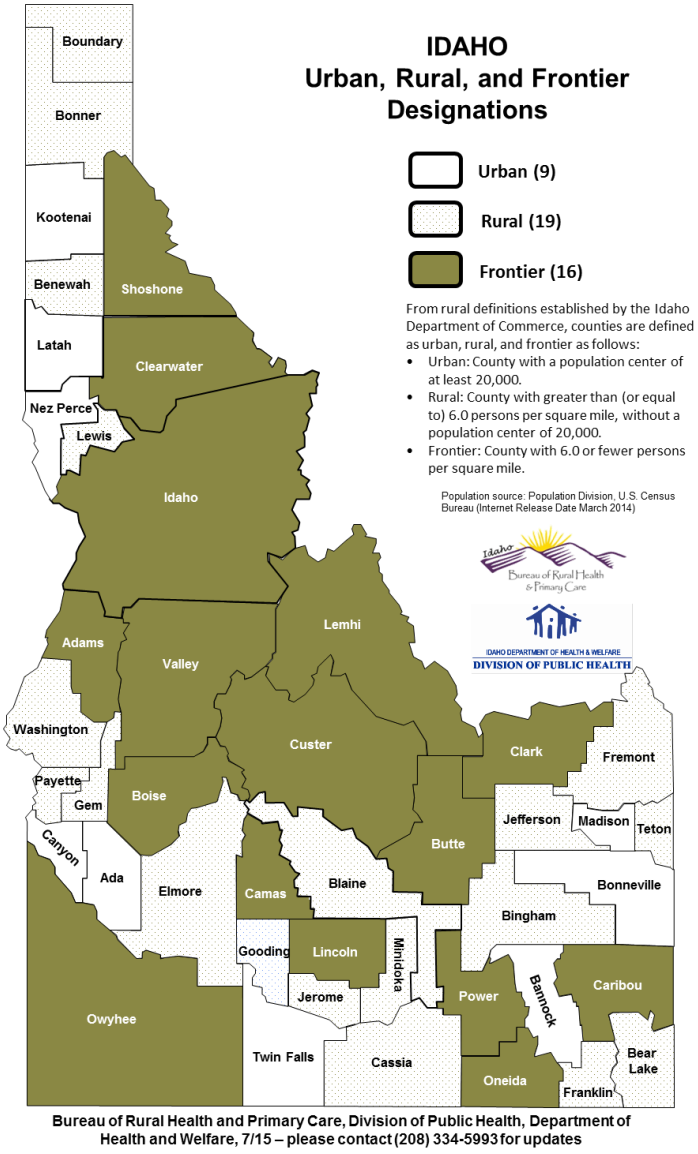


Figure 1: Rural Classifications, Idaho, 2014

As the National Rural Health Association (2014) cites, rural populations tend to have a lower average per capita income in

comparison to urban counterparts, increased prevalence of risk behaviors such as alcohol abuse and smokeless tobacco use, as well as greater morbidity and mortality rates. Furthermore, although approximately a quarter of the U.S. population resides in areas identified as rural, only an estimated 10% of the national physician workforce is believed to be practicing in rural communities.

Positive health outcomes have also been shown to be strongly correlated with higher wealth and socioeconomic status. In a study by Wenzlow, Mullahy, Robert, and Wolfe (2004), 40% of individuals having the lowest 10% of income reported poor or fair health. In contrast, less than 10% of individuals with the highest income reported having poor or fair health. As the study found, "holding demographic and other individual characteristics fixed, both income and net worth are positively associated with fewer reports of poor or fair health among individuals aged 25 to 54" (p. 35). 2012 poverty estimates released by the U.S. Census Bureau's Small Area Income and Poverty Estimates (SAIPE) program in December 2013 show that approximately 16% of Idaho's population (almost 1 in every 5 individuals) fall below the federal poverty threshold (U.S. Census Bureau, 2013).

As a result of the significant professional shortages, geographic barriers, and limited resources that exist throughout the state, Idaho faces many innate difficulties in addressing primary care need.

Section III: Idaho Health Indicator Analyses

Method of Analysis

Health Status, Access and Risk Behavior Indicators

To accurately assess the state and fulfill the objectives of the needs assessment, the Idaho Primary Care Office (PCO) selected a total of 47 indicators subcategorized into three categories: health status, health access, and health risk behavior (See Appendix A, Tables 1-1, 1-2, 1-3).

Of these, 21 indicators were selected which are representative of health status, 18 representative of health access, and 8 representative of health risk behaviors. Selection of these indicators was based primarily upon statewide health issues, Healthy People 2020 initiatives, and Idaho Department of Health and Welfare Division of Public Health leading health indicators.

Health Status Indicators

Life Expectancy
Total Mortality Rate
Infant Mortality Rate
Malignant Neoplasm (Cancer) Mortality Rate
Heart Disease Mortality Rate
Chronic Lower Respiratory Disease Mortality Rate
Unintentional Injury Mortality Rate
Cerebrovascular Disease (Stroke) Mortality Rate
Fertility Rate
Self-Reported Health Status
Physical Health
Mental Health
Obesity Prevalence
Diabetes Prevalence
Asthma Prevalence
Arthritis Prevalence
High Cholesterol
High Blood Pressure
Enteric Disease Incidence Rate
Pertussis (Whooping Cough) Incidence Rate
STD Incidence Rate

Health Access Indicators

Poverty Level
Personal Doctor
Perceived Affordability of Health Care Access
Live Birth Rate
Low Birth Weight
Colorectal Cancer Screening
Breast Cancer Screening
Cervical Cancer Screening
Cholesterol Screening
Yearly Routine Check-up
Lifetime Pneumonia Vaccine
Yearly Influenza Vaccine
HIV Test
Health Care Coverage
Medicaid Enrollment
Medicare Enrollment
Medicare Advantage Enrollment
Primary Care Physician Rate

Health Risk Indicators

Fruit and Vegetable Consumption
Physical Activity
Cigarette Smoking
Smokeless Tobacco Use
Binge Drinking
Heavy Drinking
Illicit Drug Use
Seat Belt Use

For the assessment, health status indicators were selected to portray the overall health of Idahoans residing in each county of the state. The chosen indicators were selected to encompass infant and adult life expectancy, chronic disease prevalence, self-reported health status (general, physical, and mental), and the top five causes of death in Idaho (cancer, heart disease, chronic lower respiratory disease, unintentional injury, and stroke).

In defining health access, Millman (1993) delineates that health access is the extent "to which individuals or groups are able to obtain needed services from the medical care system" (p. 32). Unfortunately, disparities in health care access exist as the result of a number of socioeconomic barriers to service, such as cost, health care coverage, and provider shortage, which ultimately results in preventable hospitalizations and unaddressed health needs. As outlined in Healthy People 2020 topics and objectives, access to health care impacts many health-related outcomes in communities, including:

- Overall physical, social, and mental health status
- Prevention of disease and disability
- Detection and treatment of health conditions
- Quality of life and well-being
- Preventable death
- Life expectancy (U.S. Department of Health and Human Services, 2014)

Health access indicators selected for use in the assessment investigate access to preventative and primary care services. Selected indicators may also generally indicate the availability, utilization, or public perception of pertinent services in area. Access indicators for preventative care services include cholesterol checks, colorectal cancer screenings, HIV testing, mammograms, and Pap smears, as well as immunizations and vaccinations to bacterial and viral illnesses such as influenza, diphtheria, tetanus, pertussis, and human papillomavirus. Primary care access indicators in the assessment include but are not limited to county poverty level, perceived affordability of health care access, general health insurance coverage, federal and state health insurance program (Medicaid and Medicare) enrollment, primary care providers per 100,000 population, and yearly routine patient visits to explore access to primary care services in each county. Maternal health care access is examined through live birth rates, as well as low birth weight in live births.

Due to the fact that determinants of health status and disparities are generally influenced not only by access to health services but through likelihood of future morbidity (and mortality) caused by unhealthy lifestyle choices, health risk indicators are also incorporated into the assessment to account for risk behaviors which often correlate with morbidity and mortality incidence and prevalence. Examples of health risk indicators include fruit and vegetable consumption (diet), leisure time physical activity, cigarette and tobacco use, alcohol consumption, and illicit drug use.

Quartile Ranking Table

To examine the 47 indicators at a county and sub-county level in order to develop logical, valid conclusions to assist in identifying geographic areas and populations with the greatest unmet health care needs, disparities, health workforce shortages, and access barriers, the assessment begins by ranking health status, access, and risk indicator results by county within three quartile ranking data tables (Appendix A, Table 1-1, 1-2, 1-3).

In the tables, Idaho counties are ordinally ranked for each indicator by assigning a numerical value (1-44) based upon indicator results. A lower numerical value for a county represents a better health outcome for that county in comparison to other counties, whereas a higher numerical value for a given county represents a poorer health outcome in comparison to counties with lower values. Once ordinally ranked, counties are then color-coded to separate ordinal rankings into easily identifiable quartiles for every indicator. This ranking allows for sufficient comparison between rates and percentages of each indicator among Idaho counties.

Finally, it is important to note in the quartile ranking tables that the ordinal rankings do not imply statistical significance of any kind. Due to small population size or limitations in methodology which prevented analysis of reliable health indicator data at a county-level, data was unavailable for some indicators. **To facilitate this form of comparative analysis, counties in which insufficient data or methodology were unavailable were assigned the median rank, or numerical value separating the upper half of the quartiles from the bottom half.** Some rankings in the quartile tables are based upon rates calculated from a small number of observations (<20 events). From a statistical perspective such rates are unstable, and individuals must exercise caution when attempting to draw conclusions from these small sample sizes. If the percentage or ranking for a given health indicator was shared by multiple counties, each county was given the higher rank.

Findings

According to the chosen method of analysis using the selected health indicators, the quartile ranking table exhibits where the areas of greatest need exist for primary care services and health care programs to overcome health care barriers and associated outcomes. Shoshone, Nez Perce, Clearwater, Caribou, and Benewah County exhibited the worst health status. In contrast, Madison, Blaine, Teton, Valley and Ada County were shown to have the best health status among the 44 Idaho counties.

Furthermore the results from the chosen indicators and method to measure health access determined that Boise, Adams, Owyhee, Payette, and Clearwater County displayed the greatest need for improved health access, while Elmore, Nez Perce, Ada, Blaine, and Bannock County were shown to provide the best health care access in the state. With regards to health risk behaviors, Oneida, Madison, Bear Lake, Jefferson, and Boise County indicated populations with the least risk behaviors, while Shoshone, Owyhee, Elmore, Lemhi, and Teton County presented populations among Idaho counties demonstrating the highest prevalence of lifestyle behaviors detrimental to health outcomes.

Although the method of analysis and indicators selected for the Idaho Primary Care Needs Assessment differed from other available models based on its intended focus (primary care versus overall community health), the results from the assessment closely resembled published findings such as the Robert Wood Johnson Foundation and University of Wisconsin Population Health Institute's *County Health Rankings & Roadmaps* (www.countyhealthrankings.org). The similarities between the assessment with models such as *County Health Rankings & Roadmaps* can largely be attributed to using a comparable approach incorporating a number of factors related to population health, in many instances derived from the same state and federal data sources.

Figure 2: Quartile Rankings by County (Health Status, Health Access, and Health Risk Behavior)

Quartile	Health Status	Health Care Access	Health Risk
Top Quartile (Top 25%)	Madison	Elmore	Oneida
	Blaine	Nez Perce	Madison
	Teton	Ada	Bear Lake
	Valley	Blaine	Jefferson
	Ada	Bannock	Boise
	Jefferson	Butte	Franklin
	Fremont	Latah	Bonneville
	Franklin	Kootenai	Washington
	Latah	Caribou	Minidoka
	Custer	Madison	Fremont
	Camas	Valley	Blaine

Quartile	Health Status	Health Care Access	Health Risk
Second Quartile	Boise Oneida Adams Bonneville Butte Kootenai Gem Clark Bonner Cassia Canyon	Bonneville Bear Lake Oneida Camas Custer Twin Falls Franklin Cassia Lemhi Jerome Jefferson	Canyon Ada Bingham Lewis Bonner Adams Custer Kootenai Bannock Payette Camas Clark
Third Quartile	Lewis Lemhi Bear Lake Bannock Bingham Twin Falls Gooding Lincoln Elmore Minidoka Washington	Teton Lincoln Bingham Bonner Clark Fremont Gem Shoshone Power Canyon Minidoka	Latah Gem Cassia Power Boundary Twin Falls Caribou Gooding Jerome Idaho
Bottom Quartile (Bottom 25%)	Idaho Jerome Boundary Power Owyhee Payette Benewah Caribou Clearwater Nez Perce Shoshone	Boundary Gooding Clearwater Payette Owyhee Adams Boise Idaho Benewah Washington Lewis	Butte Valley Benewah Nez Perce Lincoln Clearwater Teton Lemhi Elmore Owyhee Shoshone

Eight of the 44 Idaho counties (Benewah, Boundary, Clearwater, Idaho, Nez Perce, Owyhee, Payette, and Shoshone) fell within the bottom quartile for multiple categories used in the quartile ranking system. Based upon the selected method of analysis, these eight counties display the greatest overall unmet health care needs and disparities within the state pertaining to health status, access, and risk behaviors. Specifically, Nez Perce and Shoshone County were revealed to rank in the bottom quartile of the health status and health risk categories. Meanwhile, Boundary, Idaho, and Payette County each fell within the lowest quartile for health status and health access. Most notably however, Benewah, Clearwater, and Owyhee County ranked within the bottom quartile for all three categories into which the indicators were grouped (health status, health access, and health risk behavior).

Geographically, six of the eight counties identified with scores falling within the lowest quartile for multiple categories are located within the Idaho Panhandle, or northern region of the state comprised of the ten northernmost counties of Benewah, Bonner, Boundary, Clearwater, Idaho, Kootenai, Latah, Lewis, Nez Perce, and Shoshone County. In relation to the rest of Idaho, this region tends to be isolated from the southernmost part of the state by the Salmon River and Seven Devils mountain ranges. As Rodriguez (2011) specifies, the Idaho Panhandle also hosts federally-recognized Native American tribes residing upon three of the state's five Native American reservations: the Coeur d'Alene Reservation in Benewah and Kootenai County; the Kootenai Reservation in Boundary County; and the Nez Perce Reservation in Clearwater, Idaho, Latah, Lewis, and Nez Perce County (p. 1). Although manufacturing,

healthcare, and tourism have emerged as major industry sectors in recent decades according to the Idaho Department of Labor (2014), development within this region of the state has been historically defined by natural resource-based sectors such as mining, agriculture, and the forest product industry (p. 1).

Across the state, the results may suggest counties with aging populations and higher proportions of residents of Native American/Alaskan Native origin require greater focus upon to improve statewide outcomes. With the exception of Owyhee County, seven of the eight Idaho counties identified in the ranking table displaying the greatest unmet needs in health status, access, and risk outcomes exhibited a resident population aged 65 years and older exceeding the state median of 15.76%. Furthermore, all eight counties identified with the greatest overall need possess a Native American and Alaskan Native resident population exceeding the state median of 1.34% (See Appendix F, Tables 84, 85).

Although it is not feasible to draw definitive conclusions or make assertions of correlation, causality, or statistical significance due to limitations imposed by the chosen methodology and available data sets, these findings offer general insight with respect to geographies and populations where current preventative and primary care services, development strategies, and constructive dialogue may be focused to generate better health-related outcomes for individuals residing within these respective Idaho communities.

It is paramount to note that we live within a complex, dynamic environment where a number of factors exist such as religion, wealth, family and group behavior, and unique individual needs (e.g. physical needs, safety needs, need for love or belonging, self-esteem, self-actualization). In interaction with health access, these factors (both quantifiable and unquantifiable) have a cumulative impact upon the choices we make in our lives, interaction with the healthcare system, and thus significantly influence health and welfare outcomes.

Section IV: Idaho Shortage Designation Development

Development of shortage designations are a constant focus and priority of the Idaho Primary Care Office (PCO) based upon the number of rural and underserved areas and populations existing within the state. In the PCO's mission to identify geographic areas or population groups with the greatest unmet health care needs, disparities, and health workforce shortages, shortage designations serve a critical role in prioritization of both federal and state resources to overcome Idaho's challenges in improving primary care delivery.

Health Professional Shortage Area Designations (HPSAs)

Health Professional Shortage Areas (HPSAs) are federal designations designated by the U.S. Department of Health and Human Services, Health Resources and Services Administration (HRSA), which identify and indicate geographic areas or population groups with a deficit in primary care services within medical, dental, and mental health categories. HPSA designations are used as an eligibility requirement for numerous federal programs and resources available to primary care providers such as the Conrad 30 J-1 Visa Waiver Program, as well as the National Health Service Corps (NHSC) Scholarship and Loan Repayment Programs. It is a priority for Idaho to make sure that HPSA designations are updated so that as many resources and programs as possible are available to Idaho providers, and are regularly updated every four years as required. Defined primary care service areas (census tracts or counties) can receive either a geographic or population-group HPSA designation. For a service area to receive a geographic HPSA designation:

- The defined geographic service area for health service delivery must be considered rational;
- The population-to-provider full-time equivalency ratio in the rational service area must exceed the defined population-to-provider ratio (Figure 3);
- Health care resources in contiguous areas of the rational service area must be over-utilized, or exhibit excessive distance or inaccessibility (Health Resources and Services Administration).

In instances where a defined primary care service area does not meet shortage criteria for geographic HPSA designation, a population-group HPSA may be possible. For a service area to receive a population group designation, a population (i.e. low-income, migrant farm worker, etc.) within the service area must have access barriers to primary care. Furthermore, the population group, access barriers, and ratio of persons in the population group to the FTE of providers serving it must be defined. Access barriers to primary care can include aspects such as health insurance coverage, poverty level,

Figure 3: Population to Provider Ratios for HPSA Designations

	Geographic HPSA Criterion	Population Group HPSA Criterion
Primary Care	>= 3,500:1 physician	>= 3,000:1 physician
Dental	>= 5,000:1 dentist	>= 4,000:1 dentist
Mental Health	>= 6,000:1 core-mental health provider AND 20,000:1 psychiatrist*	>= 4,500:1 core-mental health provider AND 15,000:1 psychiatrist**

*OR a population-to-core-mental health provider ratio >= 6,000:1 OR a population-to-psychiatrist ratio of >=30,000:1.
** OR a population-to-core-mental health provider ratio >= 6,000:1 OR a population-to-psychiatrist ratio of >=20,000:1.

Source: U.S. Department of Health and Human Services, Health Resources and Services Administration

perceived affordability of health care, office or appointment wait times, as well as travel time or distance to the nearest primary care provider.

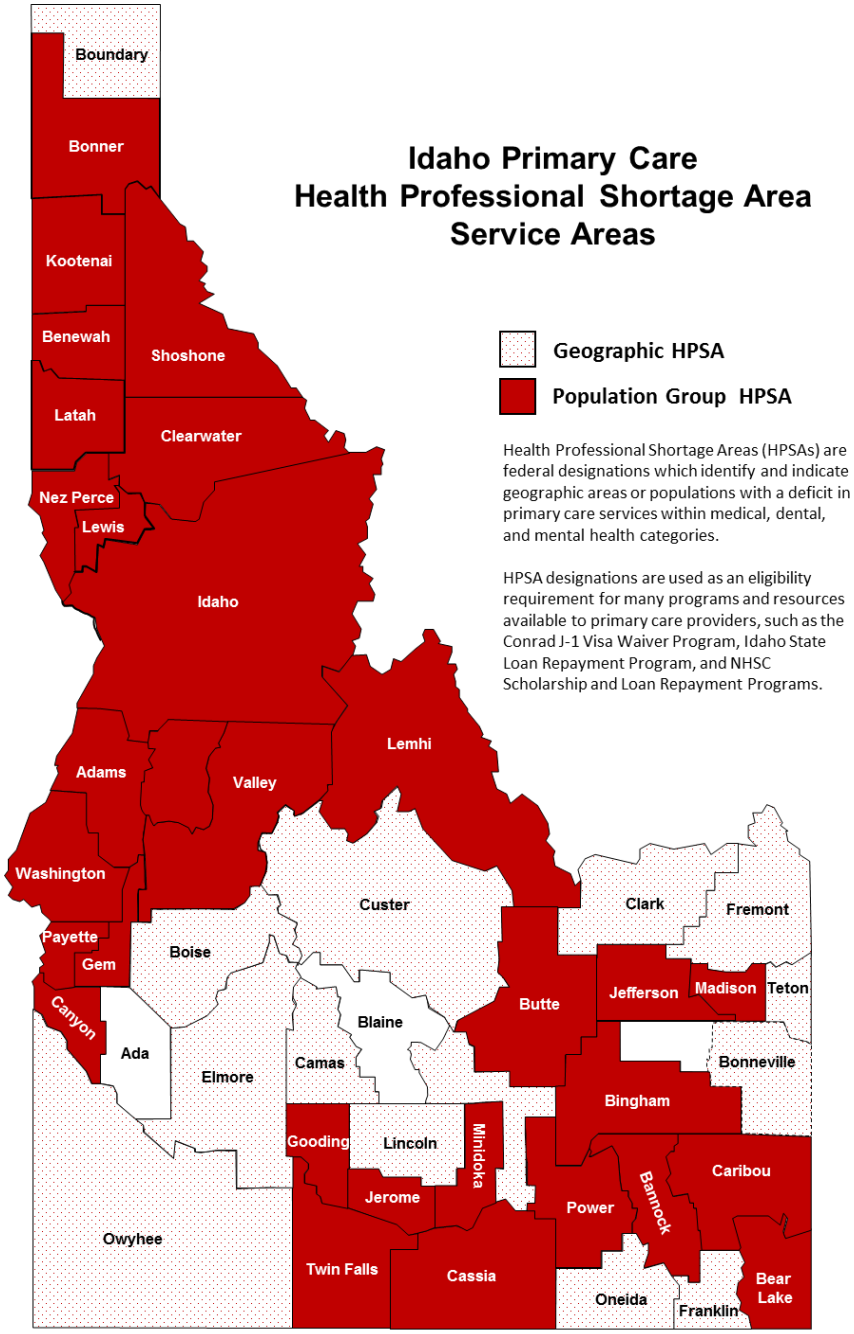
As defined by the U.S. Department of Health and Human Services, primary care and mental health designations may receive a score from 1 to 25 (Health Resources and Services Administration). Dental designations are capable of receiving a score ranging from 1 to 26. A larger score is synonymous with a greater shortage of providers for the geographic area or population group, and represents a higher priority for available primary care programs and resources to address (Health Resources and Services Administration).

HPSAs are required to be updated once every four years, and are permitted to be designated in non-concurrent years by a state PCO. As a result, designation statistics may not accurately reflect current health workforce shortages or population health care needs which are continuously influenced by a number of dynamic socio-demographic factors that may result in sudden changes in population and demographics, and/or migration of health providers. However, HPSA scores and statistics are important to note, as they still provide the most accurate four-year time-series data available gathered directly from health providers through data collection activities by state PCOs. According to the Health Resources and Services Administration (HRSA) (2014) within the U.S. Department of Health and Human Services, as of August 29, 2014 there are 6,084 designated Primary Care HPSAs, 4,968 Dental HPSAs, and 4,050 Mental Health HPSAs across the United States. Based upon established population to provider ratios for each discipline as of August 2014, approximately 8,102 primary care physicians, 7,300 dentists, and 2,786 psychiatrists would be needed to eliminate designations nationwide at this point in time (Health Resources and Services Administration).

Primary Care Health Professional Shortage Areas

There are 43 Primary Care Health Professional Shortage Area (HPSA) designations for geographic areas and population groups across the State of Idaho. These designations cover 96.36% of the state's total land area: approximately 60.54% of Idaho's geography is designated as a population group HPSA, while 35.82% is designated as a geographic HPSA in the primary care discipline.

Figure 4: Idaho Primary Care Health Professional Shortage Area Designations, 2015



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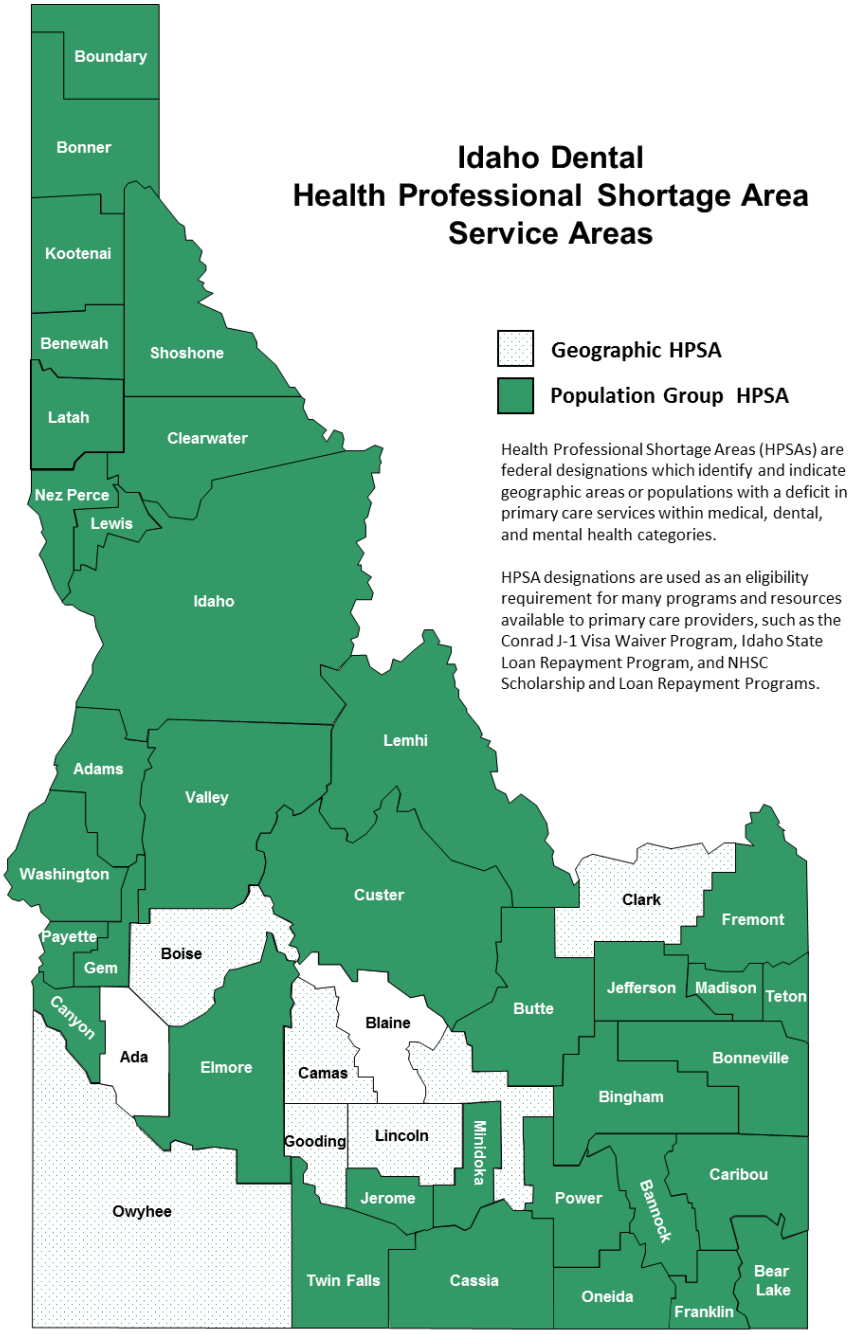
Dental Health Professional Shortage Areas

There are 43 Dental Health Professional Shortage Area (HPSA) designations for geographic areas and populations across the State of Idaho. These designations cover a total of 97.01% of the state's land area: approximately 78.18% of Idaho's geography is designated as a population group HPSA, while 18.83% is designated as a geographic HPSA in the dental discipline.

Figure 5: Idaho Dental Health Professional Shortage Area Designations, 2015



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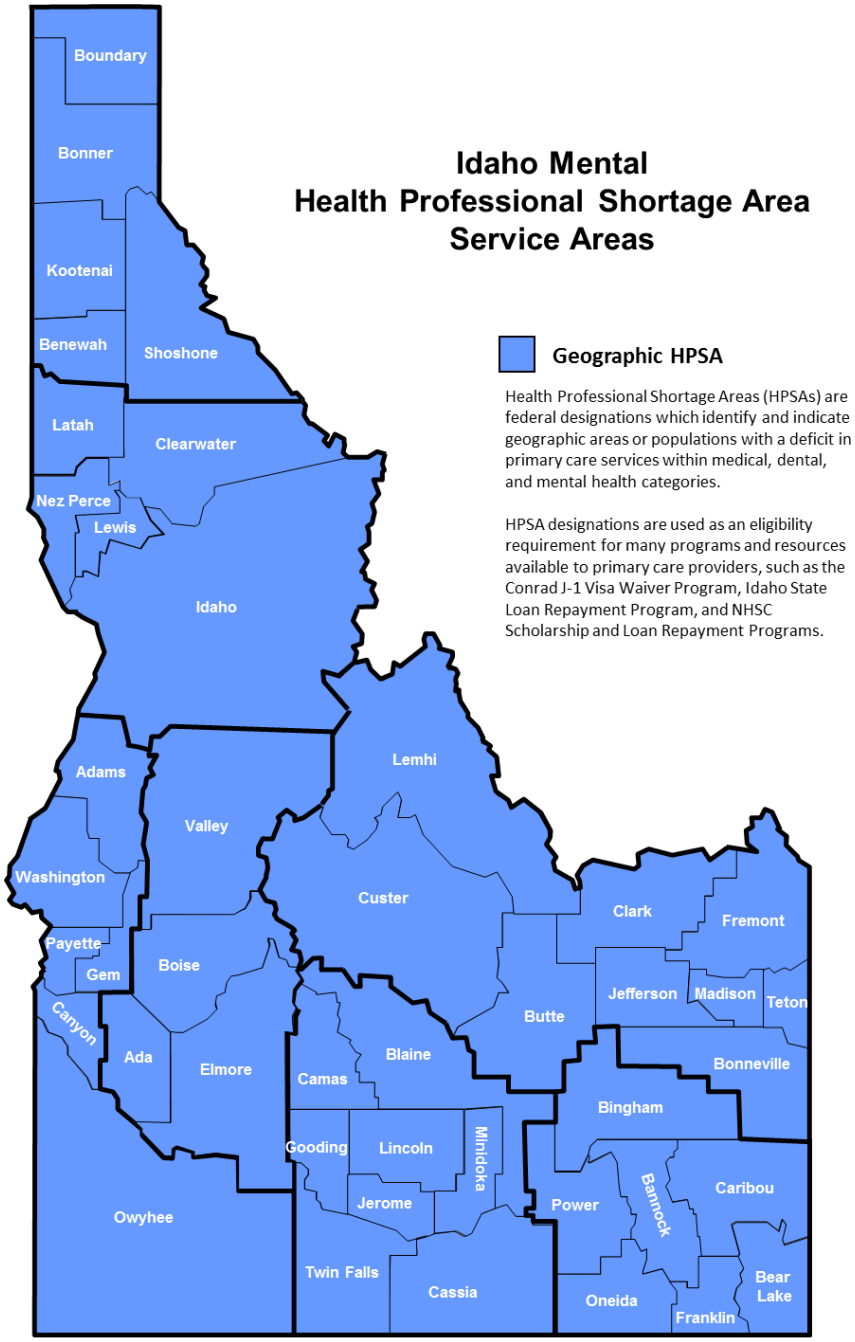
Mental Health Professional Shortage Areas

There are 7 Mental Health Professional Shortage Area (HPSA) designations for geographic areas and populations across the State of Idaho. Due to the severe shortage of mental health professionals across the state, the Idaho Primary Care Office reviews the state's geography on a regional basis. As a geographic HPSA, these mental health designations encompass all of Idaho's land area and population.

Figure 6: Idaho Mental Health Professional Shortage Area Designations, 2015



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Facility Health Professional Shortage Areas

In some cases, facilities may also be designated as a federal Health Professional Shortage Area (HPSA). In general, facilities who demonstrate they provide primary care medical, dental, and/or behavioral health services to a designated area or population and lack sufficient capacity to serve the primary care needs of the area or population are eligible for designation. Examples of facilities eligible for Facility HPSA designation include:

- Community Health Centers (CHCs) and Look-a-Likes,
- Certified Rural Health Clinics,
- Public Health Centers,
- Migrant Health Centers or Indian Health Service facilities,
- Tribal and Urban Indian sites,
- Federal or state correctional institutions (medium or maximum security),
- And public or non-profit outpatient medical facilities (Health Resources and Services Administration).

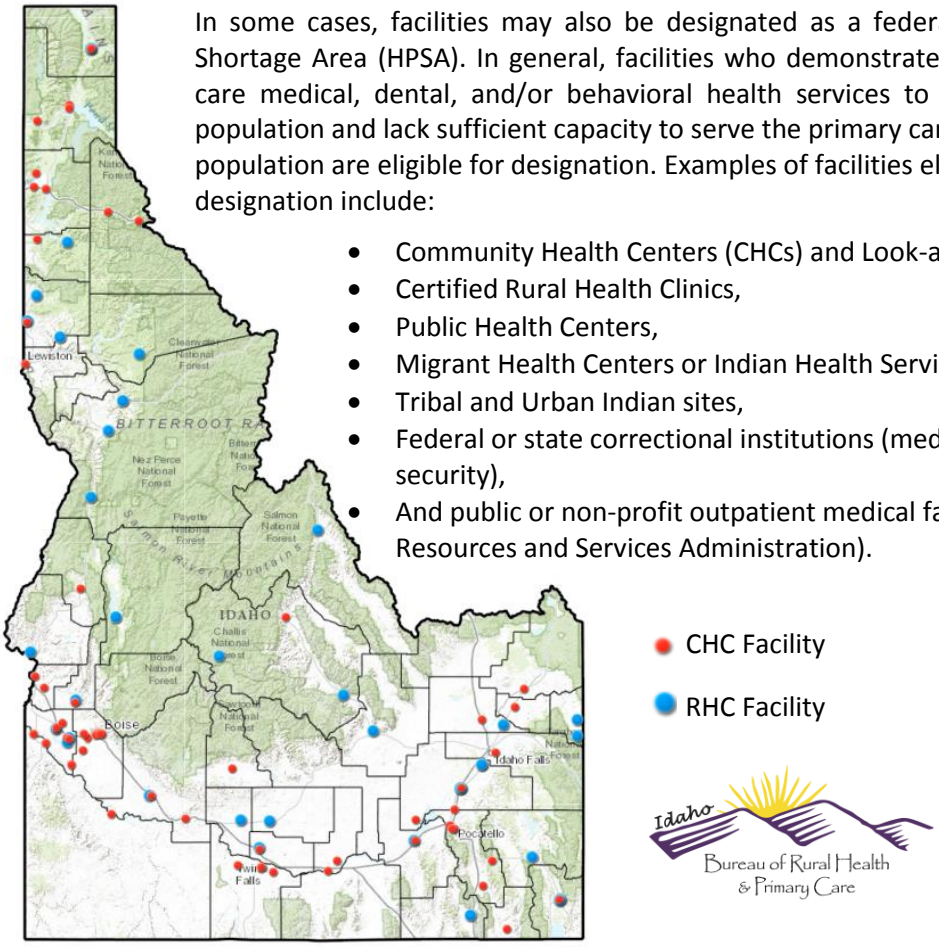


Figure 7: Idaho Facility Health Professional Shortage Area Designations, 2015

Currently, facilities are scored by HRSA according to methodology which accounts for the population to primary care provider ratio, percent of population below the federal poverty level, infant mortality or low birth weight rate, and travel time of distance to the closest available source of primary care services. Scores for each factor are weighted and combined to establish the cumulative overall designation score for the facility HPSA. Data used in scoring facility designations are taken from a number of sources, including but not limited to census civilian population and poverty data, American Medical Association (AMA) and American Osteopathic Association (AOA) files, and Uniform Data System (UDS) grant reporting from CHCs and Look-a-Likes. Facilities may also submit alternative data regarding population and poverty data, infant mortality or low birth weight, providers, or travel time and distance for consideration in the designation process (Health Resources and Services Administration).

Overall, there are a total of 122 Facility Health Professional Shortage Area (HPSA) designations across the State of Idaho in the Primary Care, Dental, and Mental Health disciplines as of September 2014. Of the 122 Facility Health Professional Shortage Area designations across the state, 46 facilities are designated with a shortage in primary medical care, 37 designations identify facilities with a shortage in dental services, and 39 designations identify facilities with a shortage in mental health services (See Appendix D, Table 56)

Medically Underserved Areas (MUAs)

The Medically Underserved Area (MUA) designation process involves applying the Index of Medical Underservice (IMU) to information in a defined service area to acquire a score for the area. The IMU scale is based upon a range of 0 to 100, where a score of 0 indicates the area is completely underserved, and a score of 100 indicates the defined area is least underserved. Based upon criterion established by the U.S. Department of Health and Human Services, Health Resources and Services Administration, defined areas with an IMU of 62.0 or less qualify for an MUA designation (U.S. Department of Health and Human Services, 1995).

The IMU score for a defined service area takes into account:

- The ratio of primary care physicians per 1,000 population
- Infant Mortality Rate
- Percent population below 100% federal poverty level
- Percent population aged 65 or older

There are 39 Medically Underserved Area (MUA) designations across the State of Idaho. These MUA designations cover a total of 46.45% of the state's total land area.

Medically Underserved Populations (MUPs)

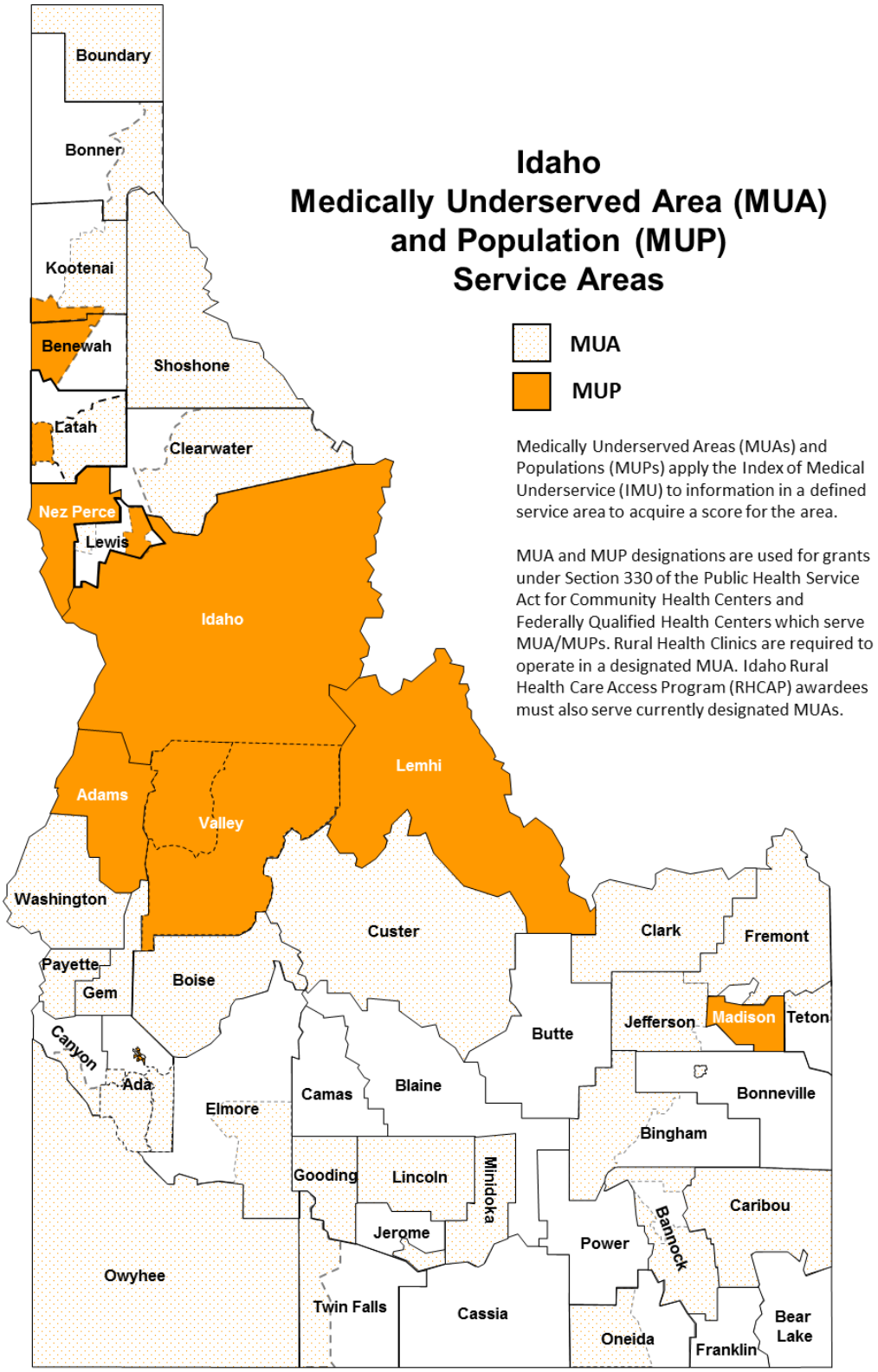
The Medically Underserved Population (MUP) designation process utilizes the same information and processes as MUA designations. However, MUP designations do not apply to the total residential civilian population within the designated area, but only to populations possessing economic, cultural, or linguistic barriers to primary care services.

There are 10 Medically Underserved Population (MUP) designations across the State of Idaho. These designations cover a total of 24.27% of the state's land area.

Summary

Altogether, MUA and MUP designations cover approximately 70.72% of Idaho's total land area. MUA and MUP designations are valuable to Idaho as grants available under Section 330 of the Public Health Service Act are only available to those institutions (Community Health Centers, Federally Qualified Health Centers, and Federally Qualified Health Center Look-a-Likes) which serve MUA/MUPs. Furthermore, clinics must operate in a designated MUA or HPSA to be designated as a Rural Health Clinic by the Centers for Medicare and Medicaid Services (CMS). Awards granted on behalf of the Idaho Rural Health Care Access Program must serve currently designated MUAs or HPSAs. As more than two-thirds of the state (70.72%) is classified under these designations, it is highly advantageous to institutions seeking assistance from their associated programs.

Figure 8: Idaho Medically Underserved Area (MUA) and Population (MUP) Designations, 2015



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Section V: Primary Care Delivery Systems

In order to ensure quality, affordable health care, Idaho relies upon a complex network of healthcare organizations to serve the state populace.

Community Health Centers

As the Idaho Primary Care Association (2014) proudly acknowledged, Idaho's Community Health Centers (CHCs) have played a crucial role in addressing health care barriers and providing access to quality preventative and primary care for Idahoans for over 40 years (p. 1). As community-based and patient-directed non-profit organizations, CHCs support the primary care infrastructure in several integral ways throughout numerous primary care, dental, and behavioral health clinics across the state. To qualify for support from the Health Resources and Services Administration, CHCs are required to:

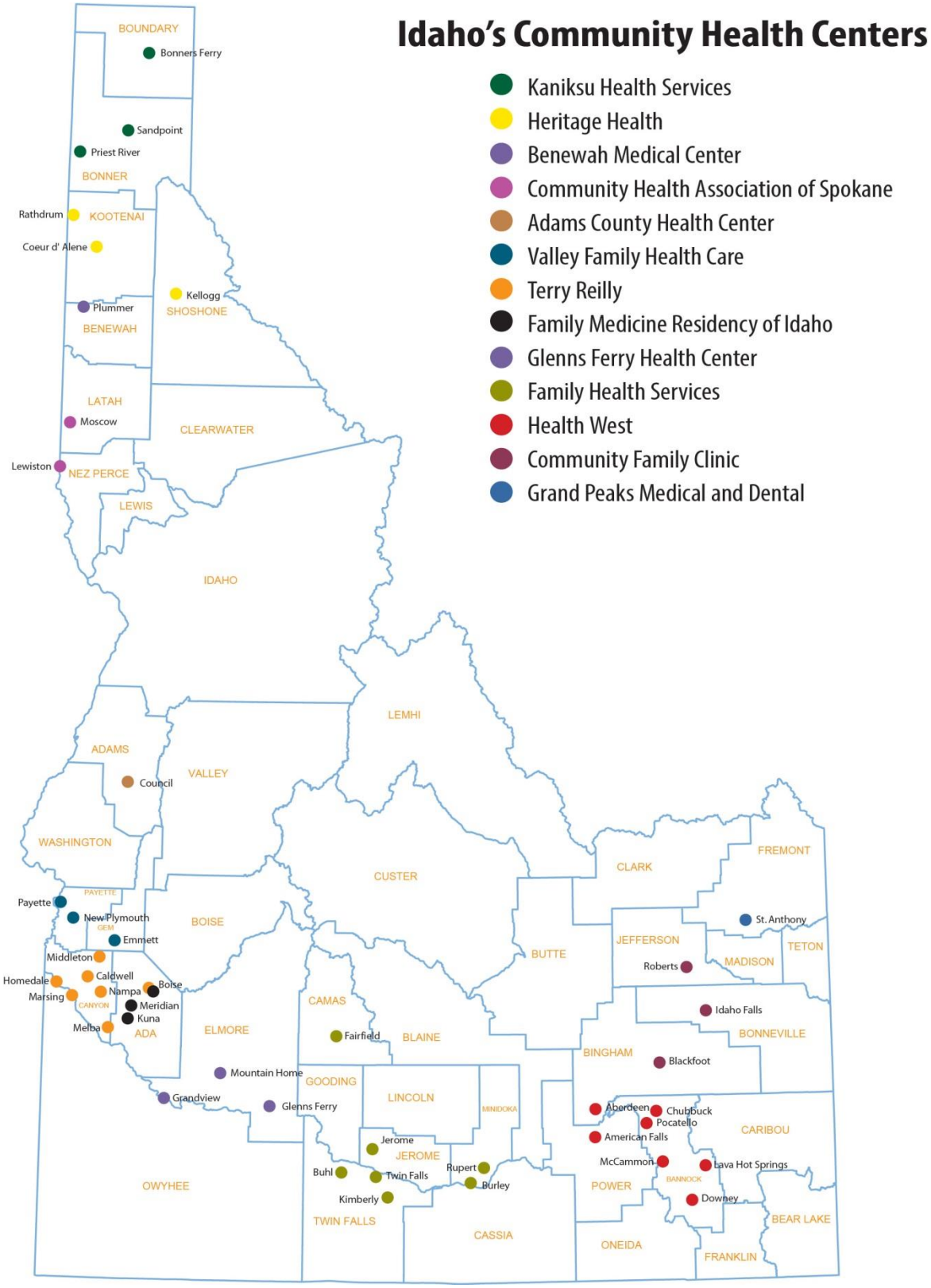
- Be located in (or serve) a high need, federally designated Medically Underserved Area or Population (MUA/P),
- Be governed by a community board,
- Provide comprehensive primary care and supportive services, and offer those services to all individuals regardless of ability to pay,
- Meet federal and state administrative, clinical, and financial operation requirements (U.S. Department of Health and Human Services).

With governance by a community board, each CHC has strong input from the community in the manner which health services are structured and implemented. Through clinical sites in 43 Idaho communities, providers working for the 13 CHCs operating in Idaho during 2013 served 153,679 individuals with preventative and primary care services. This equates to approximately 1 in 9 Idahoans, totaling 576,085 patient visits over that period of time (Idaho Primary Care Association, 2014, p. 3).

By directly serving areas and populations of high need with comprehensive health services regardless of ability to pay, CHCs reduce service disparities and access issues for low-income and other underserved populations. In 2013, approximately 49% of CHC patients in Idaho were at or below the federal income poverty level. Moreover, 49% of the 153,679 individuals CHCs served were uninsured, and another 32% relied upon public assistance programs such as Medicaid and Medicare for provision of health care services (p. 2).

As a result of the challenges faced by patients to participate in their cost of care, CHCs rely heavily upon federal funding and other non-profit sources of revenue to support their efforts to provide quality, coordinated, and consistent care to at-risk populations. Based on their location in areas which meet the requirements of a federally designated MUA or MUP and the sheer volume of uninsured, low-income patients they serve, Community Health Centers remain a vital delivery system that improve health status and access across Idaho's rural and underserved communities.

Figure 9: Idaho Community Health Centers, 2014



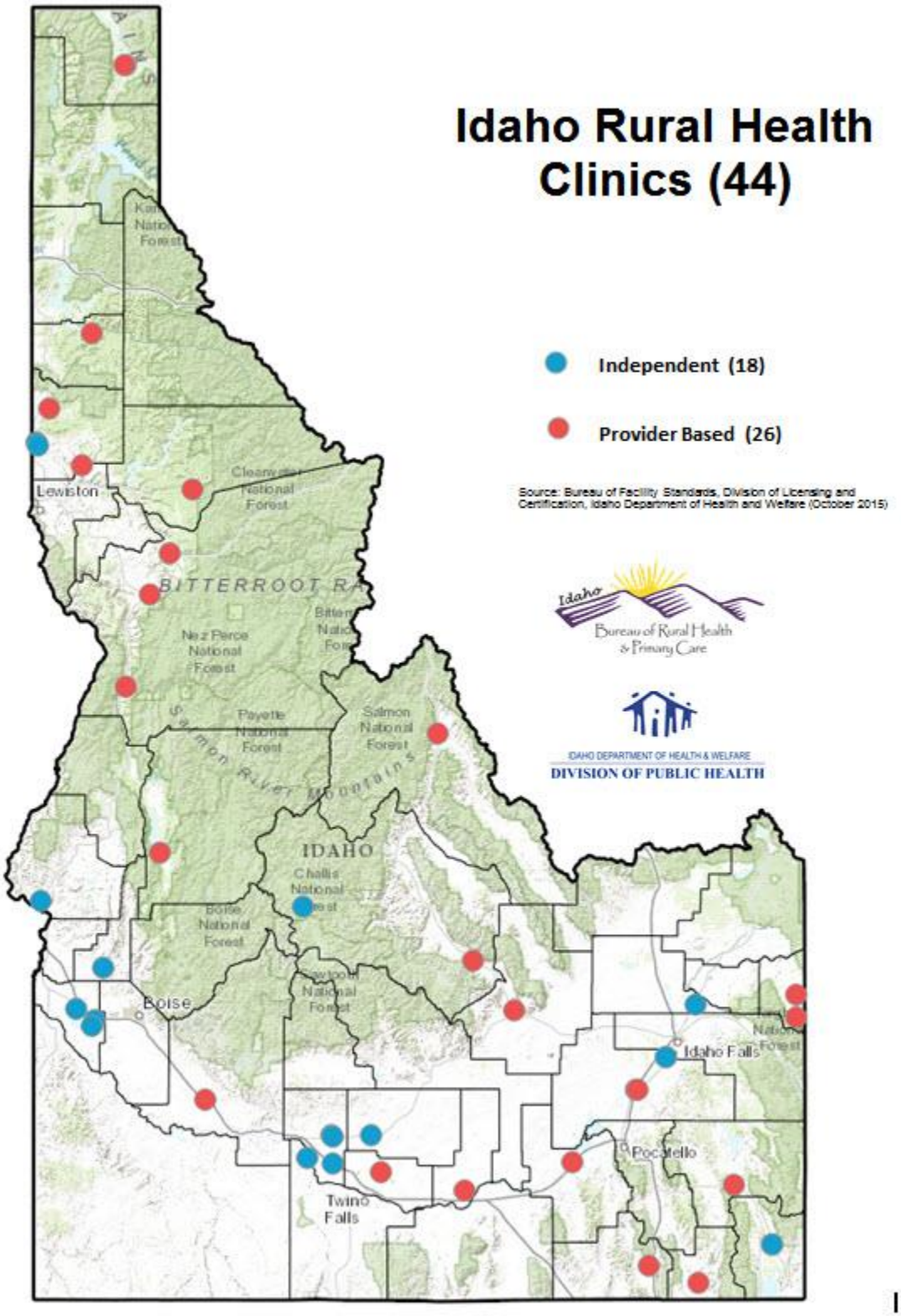
Rural Health Clinics

Rural Health Clinics (RHCs) are health clinics which receive special Medicare and Medicaid reimbursement from the Centers for Medicare and Medicaid Services (CMS) for meeting required conditions outlined by Section 330 of the Public Health Service Act, and their contribution in the effort to increase access to primary care services for rural Medicare and Medicaid patients (U.S. Department of Health and Human Services). As the Office of Rural Health Policy (2004) outlines, RHCs are governed solely by federal certification regulations. To be classified as a Rural Health Clinic, a facility must:

- Be staffed by a team which includes one midlevel provider on-site at least 50% of the clinic's hours;
- Have a supervising physician on staff to monitor midlevel providers according to state and federal law;
- Provide outpatient primary care and basic laboratory services;
- And be located within a non-urbanized area and designated as a health care shortage area (HPSA or MUA) (pp. 1-1,1-2).

In attaining RHC certification, clinics can be either independent or provider-based clinics. Independent RHCs function independently from any Medicare provider, are subject to payment and cost report reconciliation through a RHC Fiscal Intermediary, and are reimbursed by Medicare on their all-inclusive rate (subject to a cost-per-visit cap). Provider-based RHCs are clinics that are a subordinate of another Medicare provider, such as a hospital, home health, or skilled nursing organization (p. i). The RHC certification process in Idaho is administered by the Bureau of Facility Standards, housed with the Idaho Department of Health and Welfare's Division of Medicaid. Clinics may also become RHC-certified through an accrediting organization such as the American Association for Accreditation of Ambulatory Surgery Facilities (AAAASF). As of October 2014, there are 28 provider-based and 18 independent Rural Health Clinics operating in Idaho.

Figure 10: Idaho Rural Health Clinics, 2015



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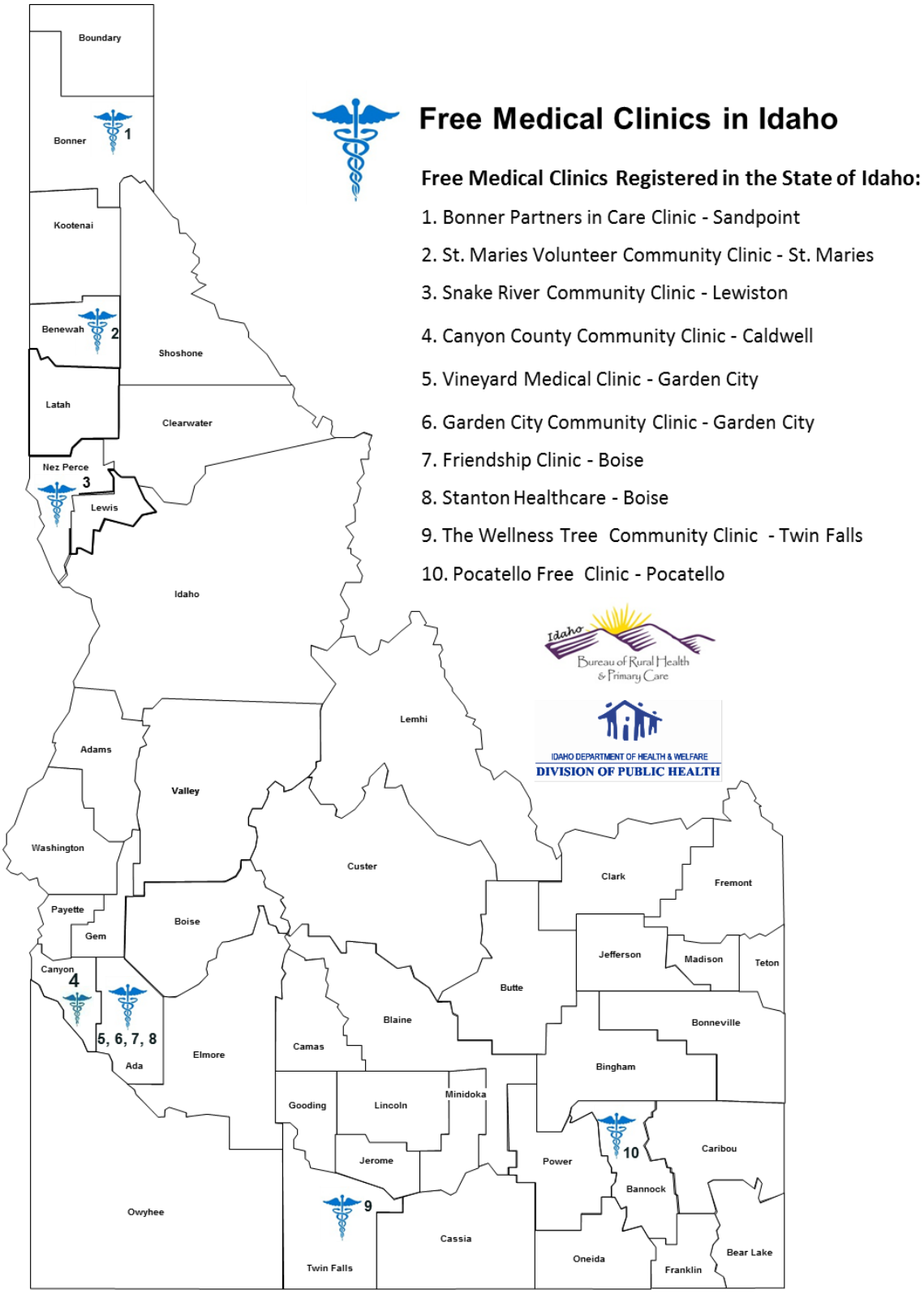
Free Medical Clinics

Free Medical Clinics are facilities other than a hospital or healthcare practice that is an organized, community-based program where licensed and certified health care providers provide voluntary primary care medical services without compensation. Primary care medical services offered by Free Medical Clinics encompass all those which do not require general anesthesia or overnight stay, and are offered at no cost or charge to patients whom are unable to pay. Free Medical Clinics in Idaho can register through the Idaho Department of Health and Welfare, and clinicians practicing for these sites receive liability immunity for the services they render. Idaho currently has 10 Registered Free Medical Clinics across the state contributing to primary care access by serving at-risk, underserved populations.

Figure 11: Idaho Free Medical Clinic Registration Date and Hours of Operation, 2015

Clinic Name	Registration Date	Address	City	State	Zip	Days of Operation	Regular Clinic Hours of Operation
Bonner Partners in Care	10/28/2003	1020 Michigan Ave.	Sandpoint	ID	83864	Varies	Varies
Canyon County Community Clinic	3/24/2010	920 Main St.	Caldwell	ID	83605	M-F	9a-3p
Friendship Clinic	7/1/2004	704 S. Latah	Boise	ID	83705	M, T	Varies
Garden City Community Clinic	11/22/2002	215 W. 35th St.	Garden City	ID	83714	T, W, Th	9a-5p
Pocatello Free Clinic	3/25/2009	429 Washington Ave.	Pocatello	ID	83201	M-F	3-6p
Snake River Community Clinic	10/11/2000	215 10th St.	Lewiston	ID	83501	T, Th	Varies
St. Maries Volunteer Community Clinic	11/3/2000	137 8th St.	St. Maries	ID	83861	M	5:30p-11p
Stanton Healthcare	6/6/2009	3684 N. Harbor	Boise	ID	83703	M-F	10a-5p
Wellness Tree Community Clinic	9/10/2004	173 Martin St.	Twin Falls	ID	83301	M-Th	9a-4p
Vineyard Medical Clinic	12/5/2003	4950 North Bradley	Garden City	ID	83714	W, Sa	Varies

Figure 12: Idaho Free Medical Clinics, 2015



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Critical Access Hospitals

Critical Access Hospitals (CAHs) are a vital resource maintaining the network of primary care services available to communities in Idaho. Established through the Balanced Budget Act of 1997 and as denoted by the Centers for Medicare and Medicaid Services (2014), currently participating Medicare hospitals or health clinics (or centers) which previously operated as a hospital can become CAHs under the state's Flex Program (p. 1).

Required to be located in a rural area located more than 35 miles from the nearest hospital or "a 15 mile drive from any hospital or other CAH in an area with mountainous terrain or only secondary roads", CAHs must also provide 24-hour emergency care 7 days a week, maintain no more than 25 inpatient beds (that may also be used for swing bed services), and demonstrate an "annual average length of stay of 96 hours or less per patient for acute care (excluding swing bed services and beds that are within distinct part units)" (p. 2).

As a designated CAH, hospitals are paid at 101% of reasonable costs for most inpatient and outpatient services to Medicare patients, and receive additional Medicare payment for residents in an approved medical residency training program who train at the facility, as well as reasonable cost-based funding for "certain Certified Registered Nurse Anesthetist (CRNA) services as an incentive to serve Medicare patients in rural areas" (pp. 2, 5).

In Idaho, hospitals with a CAH designation in 2013 operated approximately 55 primary care clinics providing outpatient primary care medical services within rural Idaho communities. Furthermore, 24 of the 46 (52%) certified Rural Health Clinics in Idaho are either affiliated with or operated by Critical Access Hospitals.

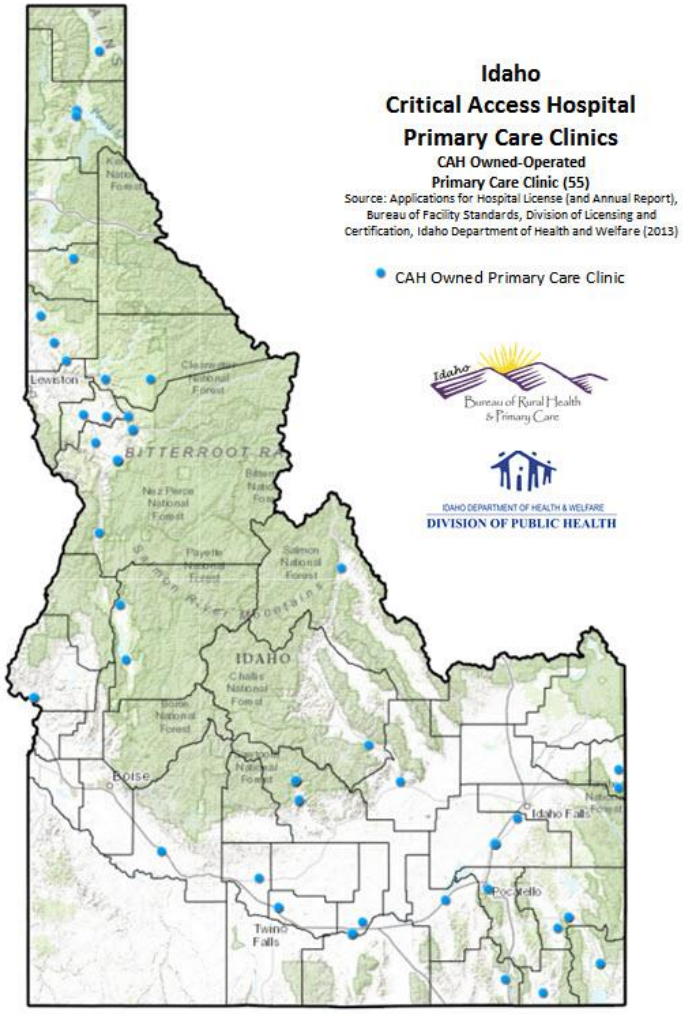
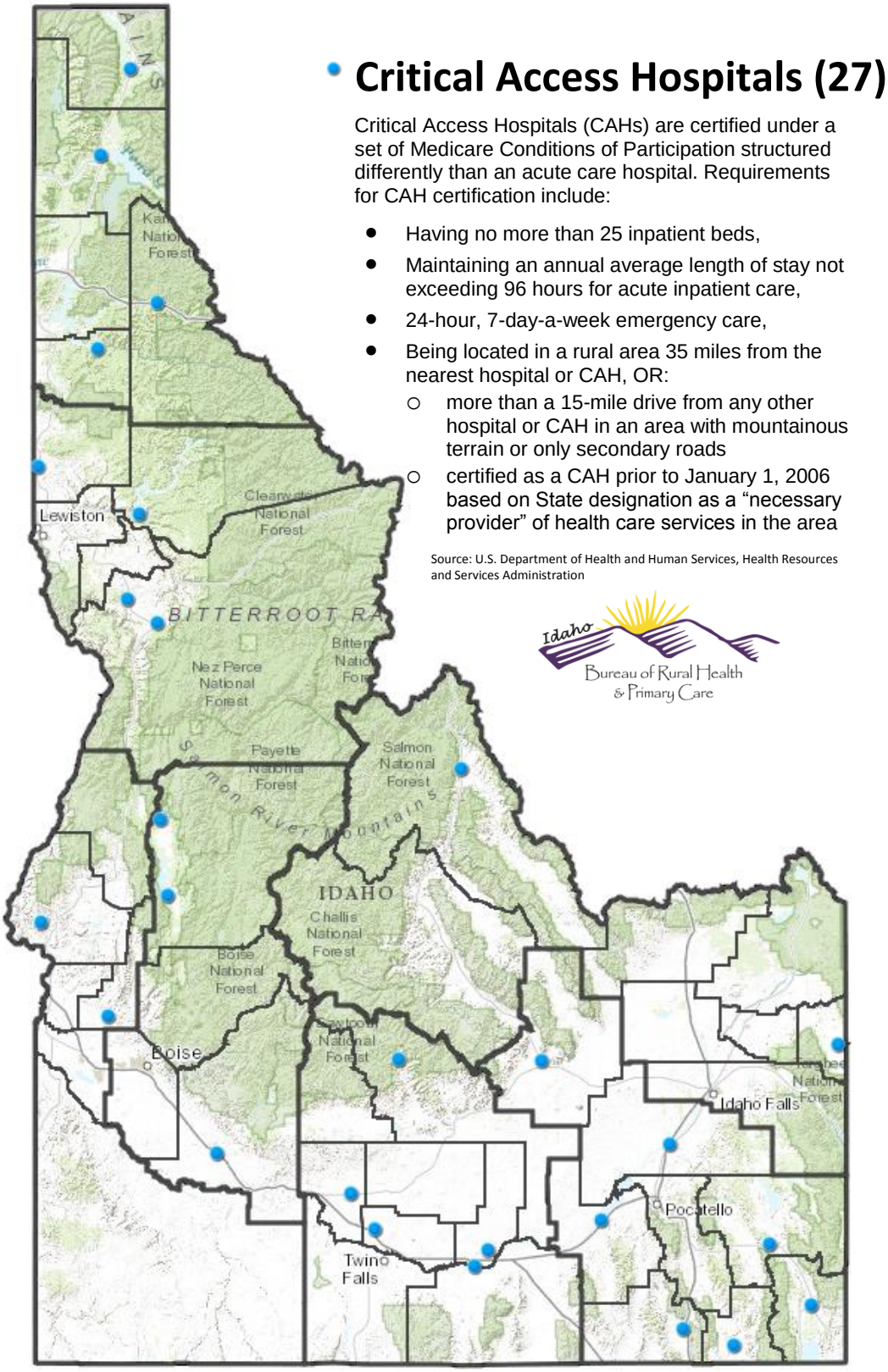


Figure 13: Idaho CAH Primary Care Clinics, 2013

Figure 14: Idaho Critical Access Hospitals, 2015



Section VI: Primary Care Workforce

A vital component to improving health care access in Idaho is developing an expanded primary care workforce which delivers health care services to the members of Idaho's urban and rural communities with better access, quality, experience, and affordability.

Pursuant to data published within the November 2013 State Physician Workforce Data Book by the Association of American Medical Colleges (AAMC) Center for Workforce Studies (2013), there were 80.7 primary care physicians active in patient care per 100,000 population in the United States in 2012 (p. 6). As well, more than one-fourth (27.6%) of the active physician workforce nationally was age 60 or older (p. 7). Although states varied widely in the percentage of physicians who were graduates from an international medical school, 24.1% of the national physician workforce is international medical graduates (IMGs) (p. 19).

Based upon findings within the 2013 Association of American Medical Colleges (2013) Matriculating Student Questionnaire, only 25.5% of incoming students accepted for admission to any of the 140 U.S. Liaison Committee on Medical Education (LCME) accredited medical schools expressed plans to work primarily in an underserved area at some point in time, and a sparse 0.2% indicated hopes of working in Idaho following medical training (pp. 18-19). Furthermore, only 2.7% of matriculating students who completed the questionnaire responded with the intent to practice medicine in a small town or rural location, and only 32.9% of students indicated that they were considering a career in primary care medicine (pp. 17, 19).

Overall, Idaho faces a significant primary care physician workforce shortage in terms of physician supply and educational opportunity. In 2012, Idaho had 65.7 primary care physicians active in patient care per 100,000 population, ranking 46th of 50 states in the country (Center for Workforce Studies, 2013, p. 15). 24.6% of active physicians in the state also are aged 60 or older, ranking Idaho 44th in the nation (p. 21). Along with Alaska, Delaware, Montana, and Wyoming, Idaho has no private or public medical or osteopathic school within the state for the training and development of physicians. Of Idaho's active physician workforce, only 4.5% are IMGs, ranking Idaho last in the country (p. 19).

Community APGAR Program

To improve recruitment and retention outcomes for family medicine physicians in communities, Critical Access Hospitals (CAHs) in Alaska, Idaho, Indiana, Montana, North Dakota, Utah, Wisconsin, and Wyoming have utilized the Community APGAR Program. It has also been used in for Community Health Centers (CHCs) in both Idaho and Maine. The Community APGAR program assists participating states in gaining greater understanding of their community and environment, in order to guide strategic planning to attract and attain physicians. As the first state to pilot the program, the Community APGAR Program is widely used in Idaho to proactively address workforce concerns through the innovative process. Currently, 15 of Idaho's Critical Access Hospitals (CAHs) and 6 Community Health Centers (CHCs) have fully participated in the two-year APGAR program.

Aptly named for its similarities with the Apgar test devised by Virginia Apgar in 1952 which examines newborns at birth and appraises their need for focused and immediate medical care, the Community APGAR Program assesses fifty community recruitment and retention factors, and identifies which factors are most important to improving performance outcomes. To accomplish this task, the APGAR

questionnaire asks fifty questions related to five categories: economic (i.e. competition, loan repayment, signing bonus), geographic (i.e. climate, schools, spousal satisfaction), hospital and community support (i.e. electronic medical record, welcome and recruitment organization, tele-video support), medical support (i.e. call coverage, nursing staff, specialist availability), and scope of practice (i.e. level of emergency care, mental health, obstetrics, and/or administrative duties). Since factors are dynamic and evolving, some variables can exist which may not be represented in the questionnaire. To increase validity, three open-ended questions are given to participants to accommodate factors which may have not been previously identified.

Upon consenting to participate in the program, CAH or CHC administrators and physicians meet in a scheduled one-hour interview with the APGAR program administrator, David Schmitz, M.D., FAAFP, Chief Rural Officer and Rural Training Track Director for Family Medicine Residency of Idaho, to discuss the program and complete the program questionnaire. Once complete, questionnaires are submitted to the Boise State University Center for Health Policy where they are then processed and analyzed. After the individual community findings are analyzed in contrast to the statewide findings, confidential individual community reports are presented by the APGAR program administrator to the administration leadership team of the CAH or CHC. Upon discussion of the results, the CAH or CHC reviews the findings and devises strategies to adjustable factors that are disadvantageous to recruitment and retention. Best practices are also shared, and applicable Community Apgar solutions developed. Additionally, advantages are discussed as strengths for recruitment and retention, advertising and for highlighting in association with recruitment efforts. This process is then repeated in year two of the program. In the follow-up meeting, the hospital's action plan is assessed and the level of improvement (or lack thereof) is measured to determine the progress made towards improving community recruitment and retention. Anonymous sharing of common challenges and successful strategies then continues to build the knowledge base regarding state-specific issues. Potential strategies are identified to address these issues, and then combined with individual community recruiting strategies in an effort to solve workforce needs.

As a validated tool developed to provide a real-time assessment of community-specific assets and capabilities, the two-year process allows communities to gauge strengths and weaknesses and identify determinant factors influencing physician employment decisions. This process is invaluable, as it allows organizations to target weaknesses and capitalize on strengths with scarce resources to sustain and build the community primary care workforce. In addition to its real-time assessment capabilities, as described, the program can also be engaged to evaluate process improvement over time.

From the 2014 Idaho Comparison Database formed by Idaho's participating CAHs, the top advantages which Idaho communities benefitted from in recruiting and retaining family medicine physicians to the state were:

- Internet Access
- Recreational Opportunities
- Community Volunteer Opportunities
- Community Need (Support for Physician)
- Loan Repayment
- Employment Status
- Ancillary Staff Workforce
- Perception of Quality

- Income Guarantee
- Hospital Leadership

Although Idaho was very attractive in these facets to physicians, the main disadvantages practices in Idaho faced with regards to family medicine physician recruitment and retention were:

- Mental Health
- Shopping and other services
- Spousal Satisfaction
- Allied Mental Health Workforce
- Electronic Medical Records
- Schools
- Access to a Larger Community
- Payor Mix
- C-Section
- Perception of community

Most notably, two of the top ten disadvantages Idaho faces according to the Community APGAR results relates to the shortage of mental health providers within the state. Furthermore, the program's findings may be indicative of issues across the Idaho healthcare delivery system as a whole, since primary care is responsible for coordinating secondary and tertiary care for patients. The health care issues Idahoans face are complex and interrelated, affecting all disciplines and specialties within the entire state's healthcare delivery system. To achieve the shared goal of providing comprehensive, quality health care services to Idaho residents, focus must be made not only within entities of each level of care, but through frequent interdisciplinary collaboration across acute, primary, secondary, and tertiary care delivery systems. By embracing these complex, intertwined issues and addressing them collectively, Idaho is engineering new strategies and initiatives to identify and address common issues in healthcare delivery which are present throughout the state.

Although currently being employed only at a sub-county level by CAHs, the APGAR program may lend greater insight into unique issues impeding workforce development within particular geographical areas and populations. As CAHs in 15 other states such as Colorado, Oregon, and Washington have shown interest in the program and the opportunity it presents for greater recruitment and retention in a competitive field, the potential exists that greater use of the program may serve as a resource for producing new strategies to address dynamic recruitment and retention issues and shared problems. Looking ahead, the Community APGAR Program may prove beneficial to identify themes and issues at a state or national level which inhibit (or vitalize) successful physician recruitment and retention in communities.

Section VII: Primary Care Programs and Resources

To address workforce development issues, Hepworth et al. (2014) points to the "Four Pillars" model the Council of Academic Family Medicine (CAFM), American Academy of Family Physicians (AAFP), American Board of Family Medicine (ABFM), and AAFP Foundation developed to identify facets which must be present to facilitate the necessary growth of a primary care workforce. In this model, the CAFM, AAFP, ABFM, and AAFP recognized that workforce development required attention to efforts in:

- Identifying, recruiting, and retaining students and residents into primary care,
- Implement medical education which trains physicians to practice evidence-based, compassionate, and comprehensive primary care,
- Expose students and residents to practices which deliver care aligned with the Patient-Centered Medical Home (PCMH) model of care, and
- Continue reimbursement reform for primary care medical education and practice (p. 84).

These organizations felt a particular culture was necessary in education, medical training, and primary care practice to achieve these efforts. According to the blueprint, confronting health workforce issues requires specific commitment towards exposing elementary, high school, and college students to quality primary care practices and role models, as well as enhancing outreach and mentoring activities. The model also stresses the value in including primary care physicians within medical admission processes to identify individuals with a particular affinity for primary care specialties, and integrating interdisciplinary education in addition to systemically confronting specialty bias throughout medical and residency curriculum (p. 84).

The CAFM, AAFP, ABFM, and AAFP also asserted the importance of exposing individuals in medical training to the continuous care of patients in multiple health delivery systems (ambulatory, inpatient, extended, and home care) to improve communication, and surrounding them in an inter-professional practice team incorporating a generalist to underline patient-based practice. Since career choice often correlates with potential income, the "Four Pillars" model also emphasizes payment reform in primary care. Through administering activities which address student debt, reduce disparity between primary care and specialty income, support value-based payment (rather than volume-based payment), and reform medical education to incorporate non-hospital medical entity payment, ambulatory training, and reimbursed community training, these primary care organizations believe workforce growth will occur (p. 84).

Idaho understands the necessity of these essential conditions to contend with primary care workforce challenges our state faces. Currently several primary care resources, educational opportunities, and residencies designed to encourage, attain, and support primary health care exist across Idaho to develop the state's primary care delivery system.

National Health Service Corps

Overview

The National Health Service Corps (NHSC) is a federal program under the U.S. Department of Health and Human Services administered by HRSA and the Bureau of Health Workforce (BHW). The NHSC strives to ensure health care access for all individuals, prevent disease and illness, as well as care for at-risk and

underserved populations. Approximately 8,900 individuals participate in the NHSC annually, providing care to over 9.3 million people across the United States (Health Resources and Services Administration). To reward individuals and sites who join the program in improving access to primary care in rural and underserved areas of the country, the NHSC offers loan repayment and scholarship incentives, assistance in site recruitment and retention, as well as education, training, and networking opportunities.

Sites

To ensure that the NHSC has a positive impact on improved health care access and care for at-risk and underserved populations in communities, the program reviews and approves eligible sites which meet particular eligibility requirements aligned with its objectives. To be a NHSC site, a facility must:

- Be a primary care outpatient facility or Critical Access Hospital which provides medical, dental, or behavioral health services within a designated HPSA;
- Maintain a discounted/sliding fee schedule based upon current federal poverty guidelines which has been implemented for at least twelve months;
- Utilize a credentialing process which includes a reference review, licensure verification, and National Practitioner Data Bank (NPDB) query;
- Provide services to all individuals regardless of ability to pay or enrollment in Medicare, Medicaid or a state Children's Health Insurance Plan;
- Prominently advertise the availability of a sliding fee schedule and access to primary care services regardless of ability to pay (National Health Service Corps);
- Demonstrate the facility is part of a system of care.

As of July 2014, Idaho has a total of 209 NHSC-certified sites providing comprehensive primary care medical, dental, and behavioral health services in frontier, rural, and urban areas. These sites are integral to the mission of the National Health Service Corps in ensuring health care access for all individuals and care for underserved populations.

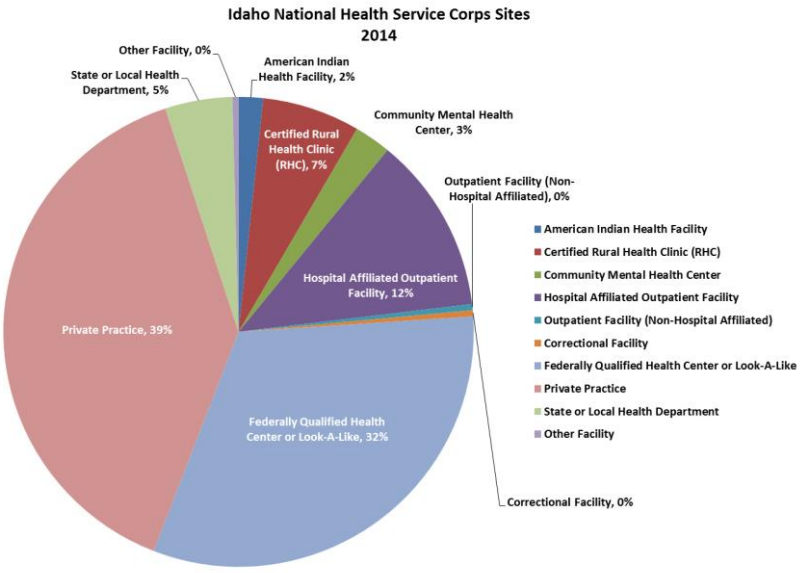


Figure 15: NHSC Sites by Type, Idaho, 2014

Providers

In exchange for a two-year commitment to serve a certified NHSC site in a federally designated Health Professional Shortage Area, the National Health Service Corps offers both loan repayment and scholarship services to:

- Primary Care Physicians (MD or DO)
- Dentists (DDS or DMD)
- Primary Care Certified Nurse Practitioners (NP)
- Certified Nurse-Midwives (CNM)
- Primary Care Physician Assistants (PA)
- Registered Dental Hygienists (RDH)
- Health Service Psychologists (HSP)
- Licensed Clinical Social Workers (LCSW)
- Psychiatric Nurse Specialists (PNS)
- Marriage and Family Therapists (MFT)
- Licensed Professional Counselors (LPC) (Bureau of Clinician and Recruitment and Service, 2014)

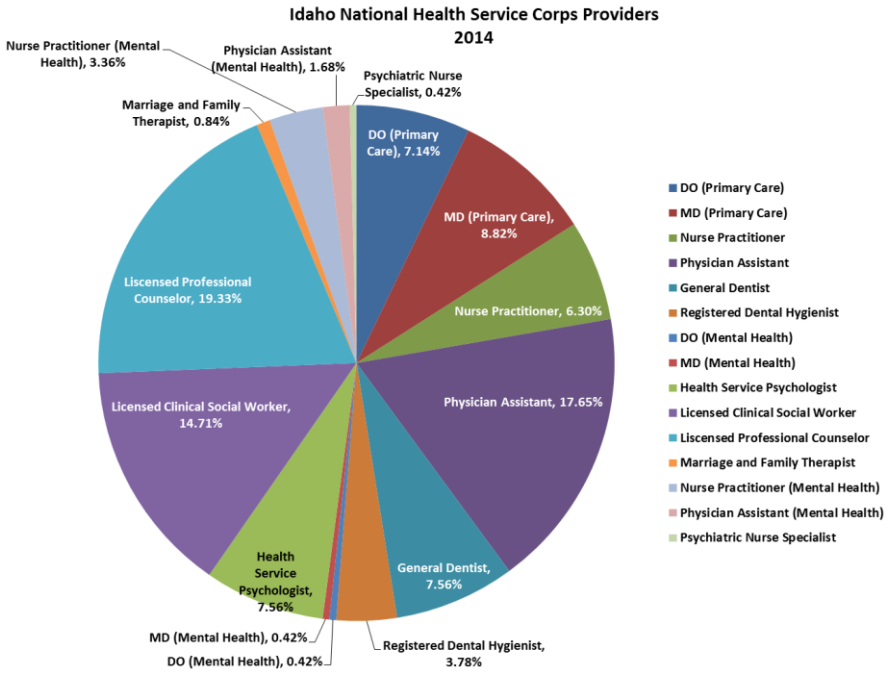


Figure 16: NHSC Providers by Discipline, Idaho, 2014

As of September 2014, 238 participants serve in the NHSC throughout Idaho. Of these participants, 233 providers currently serve in the loan repayment program and 5 are engaged in the scholarship program. 95 Idaho NHSC loan repayment and scholarship recipients practice in a primary care discipline, 27 practice in a dental discipline, and 116 practice a behavioral health discipline (Table 71).

The NHSC is both a powerful short-term and long-term resource in developing Idaho's primary care workforce. In addition to providing incentives to support organizations and recruit primary care providers which serve rural and underserved communities, the NHSC also encourages providers to continue practicing in underserved areas after their service commitment has been fulfilled.

A 2012 retention assessment survey administered to providers by the National Health Service Corps (2012) found that upon completion of a NHSC provider's service obligation, 82% of those individuals continued to provide primary care services in underserved communities for up to one year (p. 1). 55% of program participants were shown to remain practicing in underserved locations ten years after fulfilling

their NHSC obligations as well (p. 1). The survey further indicated that a provider's family social, employment, and educational needs all play a vital role in the retention of NHSC providers in underserved locations, as well their motivation, timing, and the clinical experiences they have serving an NHSC-certified site (p. 2).

To address these retention issues and engage providers in the program's efforts following their respective contractual obligations, the NHSC has implemented networking between providers using methods such as a monthly newsletter and Facebook page to disseminate information and keep providers involved, as well as individuals who volunteer time as NHSC ambassadors to promote awareness and knowledge of the program (p. 2).

Idaho State Loan Repayment Program

The State of Idaho places great emphasis on improving health care access and care for at-risk and underserved populations in communities. In 2014, Idaho established the Idaho State Loan Repayment Program (SLRP) in a resounding commitment towards creating a healthier Idaho for future generations.
The Idaho Bureau of Rural Health and Primary Care administers the SLRP program to support and improve primary care medical, dental, and mental health services across the state. Through a $1:$1 matching donation between the bureau and sponsoring organization, the program offers loan repayment awards to providers in exchange for a full-time, two-year service obligation at an eligible SLRP facility within a designated HPSA. Facilities must be a public or non-profit entity to be considered eligible for the program. Award priority is given to primary care physicians. State and Critical Access Hospitals also receive a funding priority through the program.

Eligible SLRP facilities include:

- Community Health Centers
- Migrant Health Centers
- Federally Qualified Health Centers and Look-a-Likes
- Certified Rural Health Clinics
- Critical Access Hospitals (with affiliated outpatient clinic)
- Federal Prisons
- State Prisons
- Community Outpatient Clinics
- Long-Term Care Facilities
- State or County Health Department Clinics
- State Mental Health Facilities
- Community Mental Health Facilities
- Indian Health Service Practice Sites
- Tribal/638 Health Clinics

The program limits loan repayment awards to qualified education loans. Eligible loans are defined as government, commercial or foundation loans for actual costs paid for tuition, as well as reasonable education expenses and living expenses related to the graduate or undergraduate education of a health care professional. Awards are established under contract with clinician and a memorandum of understanding with the site. Under the program, payments are made to the clinician in two equal annual

installments upon completion of each year of service. The 2014 SLRP application cycle for sites and clinicians began October 1, 2014, and will continue until all program funding has been expended.

Idaho Conrad J-1 Visa and National Interest Waiver Programs

The Idaho Primary Care Office (PCO) administers both the Idaho Conrad J-1 Visa and National Interest Waiver Programs. The Idaho Conrad J-1 Visa Waiver Program allows medically underserved communities to recruit and hire foreign trained primary care physicians, general surgeons, or psychiatrists as an option of last resort. Moreover, the applicant employer and the J-1 physician must agree and adhere to terms and conditions set forth by state and federal requirements, and all applications to the PCO must be accompanied by a $1,000.00 processing fee (Bureau of Rural Health and Primary Care, 2014). Once reviewed, J-1 applications are then forwarded to the U.S. Department of State for approval. Since 2005, the Idaho Conrad J-1 Visa Program has supported a total of 12 foreign-trained primary care physicians and psychiatrists. Of the twelve physicians who received a J-1 Visa from the program, 11 successfully completed a three-year service obligation within the underserved community they practiced (Table 80).

The National Interest Waiver Program provides a mechanism for foreign physicians pursuing a change in immigration status to stay in the United States in exchange for a commitment to practice medicine to an underserved population for a three to five year period. It waives the requirement for the employer to go through the labor certification process. Idaho communities may apply for the placement of a foreign physician after demonstrating their inability to recruit an American physician, and all other recruitment/placement possibilities have proven to be unsuccessful. Applications received by the PCO along with a $350.00 processing fee are reviewed and then forwarded to the U.S. Department of State for approval (Bureau of Rural Health and Primary Care, 2014). The State of Idaho has never had a foreign physician practice medicine in an Idaho community under the National Interest Waiver Program.

Rural Health Care Access Program (RHCAP)

The Idaho Rural Health Care Access Program helps rural Idaho communities improve access to primary medical and dental health care through grant assistance. "Improving access to health care" includes removing barriers that prevent people from obtaining health care, strengthening healthcare systems, and developing partnerships to better serve communities (Bureau of Rural Health and Primary Care, 2014). Grants of up to $35,000 per year for a maximum of one year may be awarded to eligible entities serving areas designated as Health Professional Shortage Areas or Medically Underserved Areas. Applicants may submit grant proposals that improve access to health care in any of the three assistance categories:

- Telehealth projects
- Community development projects
- Other

Applicants to the RHCAP program must be a government organization or non-profit registered with the Idaho Secretary of State. Individuals may not apply for RHCAP funds. In 2014, RHCAP awards were made to eight organizations, totaling $184,200 of assistance to underserved communities.

Rural Physician Incentive Program (RPIP)

The Rural Physician Incentive Program is a resource established by the 2003 Idaho Legislature which was successfully transitioned from Idaho Board of Education to the Bureau of Rural Health and Primary Care in 2012. The program is funded through fees assessed to physicians in state-supported seats attending the University of Utah and University of Washington medical schools, and provides loan repayment for qualifying physicians serving federally-designated shortage areas in Idaho (Bureau of Rural Health and Primary Care, 2014).

The program is focused specifically on physicians practicing primary care specialties, such as family medicine, internal medicine, and pediatrics. Through RPIP, physicians may receive a maximum of $100,000 over a four-year period towards their academic debt. Preference is given to eligible physicians who paid into the RPIP fund; however, funding is not limited to those candidates. RPIP award decisions are made by the Joint Health Care Access and Physician Incentive Grant Review Board, a committee composed of representatives from the Bureau of Rural Health and Primary Care, IDHW Division of Public Health, Idaho Academy of Family Physicians (IAFP), Idaho Area Health Education Center (AHEC), Idaho Association of Counties (IAC), Idaho Medical Association (IMA), Idaho Primary Care Association (IPCA), nurse practitioner conference group, and physician assistant association, as well as a rural hospital administrator and program administrators from each state-supported medical student program. Ten physicians are currently receiving loan repayment through the program.

3RNET

The Idaho Primary Care Office (PCO) is also a member of 3RNET (2014), a nonprofit association composed of state rural health and primary care offices, area health education centers, university programs, primary care associations, and nonprofit organizations which work to improve rural and underserved communities' access to quality health care through recruitment of physicians and other health care professionals. In addition, 3RNET also strives to facilitate development of community based recruitment and retention activities, and support national advocacy relative to rural and underserved healthcare workforce issues. Since its inclusion into the Idaho PCO in 1997, over 200 active Idaho facility members have joined and utilized 3RNET for recruitment and retention efforts. Additionally, over 100 licensed Idaho providers employ the service to search for active opportunities within the state.

Section VIII: Educational Opportunities

Overview

A key component to establishing a strong primary care delivery system and eliminating health access barriers begins with a strong educational system in place to develop a skilled workforce of health professionals. Regardless of profession, every Idahoan's education begins with K-12th grade. In Idaho, there are 115 public school districts and 47 public charter schools which serve over 280,000 adolescents annually according to the Idaho State Department of Education (n.d.). Based upon state-level analysis conducted by the Center of Education and the Workforce (n.d.) at Georgetown University, approximately 61% of jobs in Idaho will require post-secondary education by 2018. While roughly 90% of students who attend K-12 in Idaho graduate from high school, only 46% continue their education at an institution of higher education (Idaho State Department of Education). Of the 46% whom pursue secondary education following high school, 40% do not continue their education after the first year of post-secondary education (Idaho State Department of Education). In turn, only around 39% of Idaho citizens between the ages of 25-34 years old possess a one-year post-secondary degree or certification (Idaho State Department of Education).

No tertiary institutions exist in Idaho which teach medicine or award professional degrees for physicians or surgeons. Furthermore, excluding students attending osteopathic schools, legal residents of Idaho comprised less than 1% of the nation's medical school matriculants, or just 65 of the 19,059 medical school students during the 2012-2013 academic year (Center for Workforce Studies, 2013, p. 31). Despite the challenges in Idaho to increase the rate of individuals who have completed some form of post-secondary education, a number of quality opportunities exist throughout the state to educate and immerse future health providers in critical primary care disciplines. Focus upon these programs, and continued efforts to improve retention and completion of post-secondary education in Idaho, may lead to an increase of state residents matriculating to medical schools and health professional training programs as employment trends point towards a continued growth of jobs in the healthcare sector.

Boise State University

Doctor of Nursing Practice Program

To address a shortage of leaders within the healthcare workforce, spearhead initiatives, and reinforce nursing practice, Boise State University (2014) offers an online post-master's Doctor of Nursing Practice (DNP) program. The program offered by the university includes four faculty members who have completed a DNP program. Furthermore, Boise State University's School of Nursing has collaborated with several community agencies, organizations, and other universities to structure and successfully conduct distance education programs for students at both the undergraduate and graduate level for over four years (Boise State University, 2014).

The degree is the highest level of education possible for those involved in a nursing profession, and offers a practical alternative for nurses seeking greater education in the practice-based aspects of nursing practice, as compared to the research-centered Ph.D. degree. The program follows

recommended concepts in the American Association of Colleges of Nursing (2006) *Essentials of Doctoral Education for Advanced Nursing Practice*, emphasizing scientific underpinnings for practice, organizational and systems leadership for quality, clinical scholarship and analytical methods for evidence-based practice, information systems and patient care technology, healthcare policy for advocacy, inter-professional collaboration for improved patient and population outcomes, clinical prevention, and advanced nursing practice.

Idaho State University

Physician Assistant Studies Program

In addition to the Family Medicine Residency Program, Idaho State University offers the only Physician Assistant (PA) Studies program available in Idaho. The two-year PA graduate program offered through the ISU Meridian and Pocatello campuses reinforces both rural and urban primary care delivery systems across the state through a rigid curriculum structured to develop individuals into skilled health providers capable of diagnosing and treating patients under physician supervision. Program graduates are eligible to take the Physician Assistant National Certification Examination (PANCE) offered by the National Commission for Certification of Physician Assistants (NCCPA). Of the total PANCE exams administered to graduating students within the program since 2009, 96.7% of the exams were successfully passed. Furthermore, 99.6% of students among the graduating classes received Physician Assistant certification. The program offers thirty seats at the Meridian campus and 30 seats at the Pocatello campus for training prospective Physician Assistants. Thanks to a partnership with the College of Idaho, the program will offer an additional 12 seats at the College of Idaho campus starting Fall 2014, expanding the capacity for medical professional training in primary care services in Idaho (Idaho State University).

Doctor of Nursing Practice Program

Idaho State University's School of Nursing also boasts an established online Doctor of Nursing Practice (DNP) Program. This doctoral program offers prospective nursing professionals the opportunity to attain a doctoral degree with degree options in the specialties of Family Nurse Practitioner (FNP), Psychiatric Mental Health Nurse Practitioner (PMHNP), or Adult Gerontology Clinical Nurse Specialist (ACNS). As of Fall 2014, the program was undertaking the process of becoming accredited by the Commission on Collegiate Nursing Education (CCNE). This commendable accreditation would nationally recognize the program's commitment to providing quality education in nursing practice, and attest to the resolve and commitment of Idaho's health education programs to providing excellence in educational opportunities (Idaho State University).

WWAMI

Regional Medical Education Program

As the University of Washington (2014) mentions, the WWAMI Regional Medical Education Program has become an absolutely necessary medical education and training program for the states it serves since its inception in early 1970s. WWAMI, an acronym representing the member states of Washington,

Wyoming, Alaska, Montana, and Idaho, supports the primary care mission of Idaho by focusing upon the goals of providing publically supported and community-based medical education, increasing the number of primary care physicians, expanding both graduate and continuing medical education, and making such efforts possible in an affordable manner (University of Washington, 2014). As a result of the program's efforts, a substantial number of students within the program remain to practice within the five-state Northwest region, and over half of program participants choose careers in primary care. It has been recognized as the nation's foremost primary care, family medicine, and rural medicine training program by *U.S. News & World Report* for 23 years (University of Washington, 2014).

Participating states partner with the University of Washington School of Medicine in the WWAMI program to annually train a fixed number of medical students from their state. Students in the first year of the program study at an institution within their state in preparation for a medical profession. Upon completion of their first year, students then attend the University of Washington or Washington State University's Spokane campus for a full year. Following the second year of the program, students are then immersed in medical practice by completing clinical rotations in a diverse range of facilities and locations in the five-state region, to gain knowledge through a comprehensive clinical experience (University of Washington, 2014).

Grasping the importance of the WWAMI program and need for primary care physicians across Idaho, in each of the past two years the Idaho Legislature has approved five additional state-supported student seats in the program, allowing Idaho to provide for the medical training of 30 first-year students at the University of Idaho in Moscow. Other states in the program, such as Montana, are also taking action to increase support for the medical education of students as the workforce demands upon those states to support communities grows (University of Washington, 2014).

Looking forward, the program will only become more critical to the training of a quality primary care workforce in future years as it continues to grow and expand programs and resources integral to its partner states. In 2015, the University of Washington will include a new curriculum emphasizing contemporary medical education, as well as clinical training rotations in underserved areas throughout Washington, and search to connect medical research with clinical innovation to foster the development of biomedical research in the Northwest (University of Washington, 2014). As WWAMI progresses, further milestones are to be expected as the WWAMI Center for Workforce Studies and WWAMI Rural Health Research Center inform, develop, and refine healthcare policy affecting regional health care issues related to workforce and care in rural or underserved areas (University of Washington, 2014).

Section IX: Residency Programs

Overview

Following successful attainment of a medical professional degree, residencies provide an essential period of training for direct application of medical knowledge and development of clinical skills in patient care. A critical element of education for a medical professional, residency programs offer not only advanced training within Idaho to ensure a well-trained workforce, but offer the opportunity to expand the state's medical professional workforce through retaining providers as they apply their knowledge and skills in Idaho clinics and hospitals. 195 of 348 (56%) physicians who completed their Graduate Medical Education (GME) in an Accreditation Council for Graduate Medical Education (ACGME) certified program within Idaho continue to actively practice within the state, ranking 7th in the nation in GME retention, well above the national rate of 47.4% (Center for Workforce Studies, 2013, p. 53).

Idaho has also experienced the most substantial change in the total number of residents and fellows on duty in ACGME-accredited programs in the United States. From 2001-2011, the total number of residents and fellows in ACGME programs increased from 41 to 76 (85.4%), well above the state which experienced the second largest percent of growth in residents and fellows (Nevada, 45%) (Center for Workforce Studies, 2013, p. 45). With a number of new residency programs launching within Idaho in 2014, residencies are only expected to continue to grow and influence physician retention both for primary care and the state physician workforce in the foreseeable future. For a summary of Idaho's primary care residency programs, please see Table 83.

Bingham Memorial Hospital

Internal Medicine Residency Program

In early 2014, Bingham Memorial Hospital pioneered the implementation of Idaho's first internal medicine residency program. According to Shane Robinson, M.TD (2014), Administrative Director of Graduate Medical Education at Bingham Memorial Hospital, the three-year osteopathic internal medicine residency program is the first residency in Idaho to be accredited by the American Osteopathic Association, the primary accreditation body for osteopathic physicians in the United States. Four new residents are accepted annually from any of the 30 osteopathic medical schools nationwide accredited by the AOA's Commission on Osteopathic College Accreditation (COCA); by 2017, the residency program is expected to have twelve total residents (Robinson, 2014).

The program has placed a strong emphasis on seeking medical students who have a connection to the region: 3 of the 4 residents currently within the residency program have strong ties within the Northwest (Robinson, 2014). Although focusing training with an overlying emphasis in inpatient and ambulatory care, the residency program also stresses the importance of rural training rotations in its curriculum.

In the first year of curriculum taught at Bingham Memorial Hospital and the Idaho Physicians Clinic in Blackfoot, residents are trained in core topics such as cardiology, emergency medicine, general inpatient

medicine, critical care, and women's health (Bingham Memorial Hospital). Following one year of training in core curriculum to attain general medical education (GME) and board eligibility, physicians will then practice internal medicine in subsequent locations such as Community Family Clinic outpatient locations in Blackfoot and Idaho Falls, as well as inpatient care at State Hospital South and other settings such as the Idaho Kidney Institute and Teton Cancer Institute (Bingham Memorial Hospital). Currently, rural rotations are being discussed with partner organizations in southeastern Idaho, such as Bear Lake Memorial Hospital, Steele Memorial Medical Center, and Teton Valley Health Care (Robinson, 2014). Looking ahead, Bingham Memorial Hospital's Internal Medicine Residency program is a necessary addition fundamental to developing an extensive scope of all primary care specialties within southeastern Idaho and the state.

Family Medicine Residency of Idaho

Family Medicine Residency Program

The Family Medicine Residency of Idaho (FMRI) Residency Program is a significant resource contributing to the medical training and retention of family medicine providers within the state. Since 1975, there have been 293 graduates from the Family Medicine Residency program at FMRI, ranging from 29 to 54 years of age, with an average resident age of 34.4 years. 54% of graduates from the program remain to practice within Idaho communities, helping Idaho rank 7th in the nation in graduate retention. Moreover, 41% of graduates from the program continue on to provide primary care services in rural and underserved Idaho communities, proving to be a necessary resource to improving health care access across the state (Family Medicine Residency of Idaho).

With an expansive curriculum instructed by talented faculty, the three-year program hosts 16 family medicine residents annually. To attract medical students for the program, FMRI is an active participant in the National Residency Matching Program, and promotes recruitment through opportunities including but not limited to personal references, medical student rotations, and attendance at the American Academy of Family Physician's (AAFP) National Conference of Medical Students and Residents. Family Medicine Residency of Idaho encourages residents to serve rural and underserved populations through a core program in Boise, Idaho reinforced by two Rural Training Track (RTT) programs. Located in southern Idaho, the RTT programs endeavor to sustain health professions education in a rural area through mutual encouragement, peer learning, practice improvement, and the delivery of technical expertise in support of a quality rural workforce.

Caldwell Rural Training Track

Within the welcoming communities of Canyon County, the Family Medicine Residency of Idaho Caldwell RTT began in 1995 with one resident accepted into the RTT each year (Family Medicine Residency of Idaho, 2014). As part of the program, residents within the RTT complete their first year of training in Boise with the core residency, and later finish the second and third year of residency training in

Caldwell, Idaho (about 20 miles west of Boise). With the devout support of the local medical communities and inclusion of the residents into the medical group, the program has thrived through fulfillment and flexibility.

After the first resident completed the residency program in 1998, the success of the program spread soon thereafter. In 2006, the Caldwell RTT was expanded to accept two new residents annually, and host six residents total. Since its inception, 21 of the 293 program graduates have successfully graduated from the Caldwell RTT, averaging 35 years in age. Additionally, every Caldwell RTT graduate is a board-certified family medicine physician. 80% of graduates remain to practice family medicine in Idaho, and 70% currently serve in rural areas across Idaho (Family Medicine Residency of Idaho, 2014).

Magic Valley Rural Training Track

Following the success of the Caldwell RTT, Family Medicine Residency of Idaho introduced the Magic Valley RTT in 2009, admitting one resident annually (Family Medicine Residency of Idaho, 2014). Much like the Caldwell RTT, first year residents receive training in Boise with the core residency program, and complete the second and third year of training in the residency program in the Magic Valley, a south-central region of Idaho approximately 120 miles east of Boise, consisting of Blaine, Camas, Cassia, Gooding, Jerome, Lincoln, Minidoka, and Twin Falls County.

Due to its recent creation, only 4 residents have graduated from the Magic Valley RTT. Graduates of the Magic Valley RTT have ranged in age from 30-54 years old, with an average age of 38.25 years. Of these graduates, one continues to practice in Idaho; three practice out-of-state. However, half of the RTTs inaugural class practices in rural areas with Primary Care HPSAs, for facilities that serve underserved populations (Community Health Centers, Rural Health Clinics, and Critical Access Hospitals).

Idaho State University

Family Medicine Residency Program

The Idaho State University (2014) Family Medicine Residency Program supports Idaho's primary care endeavors by equipping physicians with the necessary skills and knowledge needed for practicing family medicine in rural areas. Based upon the Idaho State University (ISU) campus in Pocatello, Idaho, the ISU Family Medicine Residency program is accredited by the Accreditation Council for Graduate Medical Education (ACGME) and annually trains seven residents for rural family practice.

Idaho State
UNIVERSITY

Each year, residency faculty review hundreds of applications to the program from fourth-year medical students and determines which applicants would be the best fit for the residency according to William Woodhouse, M.D. (2014), Associate Director of the ISU Family Medicine Residency Program. To attract applicants and increase awareness of the residency program, ISU is involved in numerous activities such as residency fairs, inpatient and clinic externships for fourth-year students, as well as internet outreach through mediums such as the ISU website and Facebook. Candidates who exhibit exceptional academic and clinical skills, are bilingual, interested in rural and underserved practice, and possess Idaho ties are

given priority in admission to the residency program. Approximately 70 interviews are conducted annually by the program to select candidates for each incoming class (Woodhouse, 2014).

Primarily, hospital rotations occur at Portneuf Medical Center in Pocatello, Idaho. Pediatric rotations take place at St. Luke's Medical Center in Boise, Idaho, or the Primary Children's Hospital in Salt Lake City, Utah, an affiliate of the University of Utah School of Medicine. Idaho State's curriculum also requires residents to complete one month of rural rotations in the second and third years within the program. Overall, ISU's Family Medicine Residency Program has affiliation agreements with over 200 physicians, practices, and hospitals throughout Idaho to provide necessary training for residents in specialty, elective, and rural rotations (Woodhouse, 2014).

Of the 109 residents who have begun advanced training in family medicine with the program, 102 residents (94%) have successfully graduated from the program since its inception in 1991 (Woodhouse, 2014). 98% of residency program graduates have attained board certification from the American Board of Family Medicine (ABFM), and every graduate from the Idaho State University Family Medicine Residency Program is engaged in clinical practice (Woodhouse, 2014).

The program also has a history of training physicians who remain to practice in Idaho: 50% of program graduates have continued to provide primary care services to communities in Idaho following graduation (Woodhouse, 2014). Furthermore, the program has demonstrated itself to be of great value in efforts towards growth of the primary care workforce among rural and underserved populations, as 60% of graduates practice in rural settings, and 56% serve within a designated Primary Care Health Professional Shortage Area (HPSA) (Woodhouse, 2014). Although early data for the program is incomplete, William Woodhouse, M.D., estimates as well that approximately 78% of graduating physicians have entered practice at a facility which concentrates efforts upon assisting underserved populations, such as CHC's and RHC's (Woodhouse, 2014).

Looking ahead, the challenges the program faces to expanding the scope of its service and outreach in contribution of developing Idaho's primary care workforce relates to recruitment and retention issues associated with workforce shortages and acquiring qualified faculty. To successfully expand the program and address shortage concerns within the state, greater incentive must be placed upon advanced training programs such as those offered at ISU to increase recruitment and retention not only of developing health professionals, but mentors as well.

Kootenai Health

Family Medicine Residency Program

Under the guidance of an experienced, multifaceted faculty in Coeur d'Alene, the Kootenai Health Family Medicine Residency Program offers medical students the unique opportunity to develop family and rural medicine skills in scenic northern Idaho on the campus of the 246-bed, non-profit Kootenai Health district hospital. As an affiliate program of the University of Washington Family Medicine Residency Network, the new three-year ACGME accredited program founded in July 2014 addresses rural and primary care challenges through strong regional partnerships aligned with WWAMI areas of focus intended to increase awareness of the family medicine, rural practice, and patient-centered

primary care landscape (McLandress, 2014). Applications from all ACGME accredited medical schools are accepted.

Six residents are accepted to the program annually, and the residency expects to serve 18 residents total by 2017 (Grady, 2014). Like Bingham Memorial's Internal Medicine Residency Program, the Kootenai Health Residency Program has a strong Northwest emphasis as well. Of the six residents accepted into the inaugural class in July 2014, two residents had Colorado ties, two had ties to Idaho, and one resident had a Washington background, according to Rachel Grady, MBA/HCM, and the Residency Program Development Manager at Kootenai Health. The program offers training and rotations in areas such as high-intensity OB care, inpatient adult medicine, general surgery, and emergency medicine (Grady, 2014).

First-year residents will have the opportunity to work in conjunction with the Panhandle Health District working participating in home visits, Women, Infants, and Children (WIC) visits, as well as exploring water quality and other health-related topics. Furthermore, residents will get the chance to expand inpatient pediatric knowledge at Providence Children's Hospital in Spokane, WA, as well as learn from a variety of pediatric specialists in the region. Kootenai Health provides other interesting curriculum opportunities for residents, such as training in wilderness medicine with Schweitzer Ski Patrol (Grady, 2014). Similarly, the program also partners to provide wilderness medicine opportunities for residents with ROW Adventures (2014), an organization offering adventure rafting trips down the Middle Fork of the Salmon River. At the conclusion of the program, each resident will have experienced 13 four-week blocks immersed within a variety of rotations to become compassionate, reliable family medicine providers.

With other Idaho residencies based in Southeast and Southwest Idaho, the Kootenai Health Family Medicine Residency Program provides educational opportunity in the northern portion of the state. Looking forward, the program anticipates to be much different than it is now. As the program continues to develop and establish itself among residency programs offered in the state, further development with international rotations, rural rotations, sports and wilderness medicine, and other curriculum is expected as Kootenai Health acknowledges, applies, and satisfies resident and faculty interests within the program itself.

Boise Veterans Affairs Medical Center

Center of Excellence in Primary Care Education

Innovation creates quality. In 2010, the Boise Veterans Affairs Medical Center was one of five hospitals nationwide selected to become a "Center of Excellence", receiving a $5 million grant as part of the Department of Veteran's Affair's New Models of Care initiative to improve primary care education outcomes in the United States. Under this initiative, the medical center makes use of Veteran's Affairs resources and settings to create original and inventive methods to train primary care providers and staff in primary care practice, as well as delves into exploring collaboration between differing health professional programs and examining cultural shifts in education (University of Washington-Boise Internal Medicine Residency).

The project strives to develop the Medical Home Model in primary care, encouraging growth of patient-aligned care. In Boise, the project integrates residents and other trainees of multiple disciplines in an ambulatory clinic while also stressing long-term, continuous care of patients. With more than 30 years

of experience as a site for post-secondary education, the Boise Veterans Affairs Medical Center has been and will continue to be adept in developing new leaders in health care, discovering new strategies to improve primary care outcomes, and training medical professionals for clinical practice in both primary care and specialty disciplines (University of Washington-Boise Internal Medicine Residency).

University of Washington Boise Internal Medicine Residency Program

Since 1977, residents affiliated with the University of Washington Department of Medicine have trained in the Boise Internal Training Track at the Boise Veterans Affairs Medical Center to acquire specific skills to excel in autonomous outpatient primary care and inpatient hospital practice. Over that course of time, the track has produced 223 graduates, 31% of which continue to practice in Idaho, while approximately 70% of the track graduates overall remain practicing in WWAMI states. The program's ability to contribute internal medicine physicians to the geographic area makes it to be a great resource in creating internal medicine physicians not only for Idaho, but the Northwest region.

In July 2011, the Boise Internal Training Track became the University of Washington-Boise Internal Medicine Residency Program, only the second residency in the University of Washington Department Of Medicine. Within the residency program, residents are required to complete 36 months of training divided into 2 to 4 week-long blocks. Eight categorical residents are accepted into the program each year, along with four to five residents who attend to receive one-year of internal medicine training before continuing their education in a medicine specialty or subspecialty of interest. To develop a culture and tradition to reflect the philosophies and expectations of the program, some residents who have graduated from the program remain to become chief residents and junior faculty members after their education is complete.

Since its transition from a training track into a residency program, the University of Washington-Boise Internal Medicine Residency program has contributed eight internal medicine physicians to the primary care workforce, successfully graduating every resident who entered the residency's inaugural class. Every program graduate has continued on to engage in clinical practice, and 50% of the graduates continued to remain in Idaho.

Looking ahead, the program hopes to become an even greater resource to the primary care network, and expose residents to a greater proportion of clinics outside of the Veteran's Administration. The program is currently working to add a second continuity clinic with Terry Reilly Health Services in which residents build a relationship with patients to offer continuous care, and is looking into the opportunity to incorporate fellowships as well.

Appendix A: Health Status Indicator Supplemental Materials

Table 1-1: Health Status Indicator Rankings by County, Idaho

Table 1-2: Health Access Indicator Rankings by County, Idaho

Table 1-3: Health Risk Indicator Rankings by County, Idaho

Table 2: Life Expectancy at Birth by County of Residence, Idaho, 2009-2013

Table 3: Infant Deaths and Births by County of Residence, Idaho, 2009-2013

Table 4: Resident Deaths (Total) and Age-Adjusted Rates by County of Residence, Idaho, 2009-2013

Table 5: Resident Deaths (Cancer) and Age-Adjusted Rates by County of Residence, Idaho, 2009-2013

Table 6: Resident Deaths (Heart Disease) and Age-Adjusted Rates by County of Residence, Idaho, 2009-2013

Table 7: Resident Deaths (Lower Respiratory Disease) and Age-Adjusted Rates by County of Residence, Idaho, 2009-2013

Table 8: Resident Deaths (Unintentional Injury) and Age-Adjusted Rates by County of Residence, Idaho, 2009-2013

Table 9: Resident Deaths (Stroke) and Age-Adjusted Rates by County of Residence, Idaho, 2009-2013

Table 10: Fertility Rate by County of Residence, Idaho, 2009-2013

Table 11: Self-Reported Health Status by County of Residence, Idaho, 2011-2013

Table 12: Physical Health by County of Residence, Idaho, 2011-2013

Table 13: Mental Health by County of Residence, Idaho, 2011-2013

Table 14: Obesity Prevalence by County of Residence, Idaho, 2011-2013

Table 15: Diabetes Prevalence by County of Residence, Idaho, 2011-2013

Table 16: Asthma Prevalence by County of Residence, Idaho, 2011-2013

Table 17: Arthritis Prevalence by County of Residence, Idaho, 2011-2013

Table 18: High Cholesterol Prevalence by County of Residence, Idaho, 2011-2013

Table 19: High Blood Pressure Prevalence by County of Residence, Idaho, 2011-2013

Table 20: Reported Enteric Disease Cases, Idaho, 2013

Table 21: Enteric Disease Incidence Rates, Idaho, 2013

Table 22: Reported Pertussis Cases, Idaho, 2013

Table 23 Pertussis Incidence Rates, Idaho, 2013

Table 24: Reported Sexually Transmitted Diseases in Idaho by District and County, Idaho, 2013

Table 25: Reported Sexually Transmitted Diseases in Idaho by District, Idaho, 2013

Table 26: Sexually Transmitted Disease Incidence Rates, Idaho, 2013

Appendix B: Health Access Indicator Supplemental Materials

Table 27: Poverty Level by County of Residence, Idaho, 2012

Table 28: Personal Doctor, Idaho, 2011-2013

Table 29: Perceived Affordability of Health Care Access (Could Not See Doctor Due to Cost), Idaho, 2011-2013

Table 30: Live Birth Rate by County of Residence, Idaho, 2009-2013

Table 31: Resident Live Births: Low Birth Weight by County of Residence, Idaho, 2009-2013

Table 32: Colorectal Cancer Screening, Idaho, 2012

Table 33: Breast Cancer Screening, Idaho, 2012

Table 34: Cervical Cancer Screening, Idaho, 2012

Table 35: Cholesterol Screening, Idaho, 2012

Table 36: Yearly Routine Check-up, Idaho, 2011-2013

Table 37: Lifetime Pneumonia Vaccination, Idaho, 2011-2013

Table 38: Yearly Influenza Vaccination, Idaho, 2011-2013

Table 39: HIV Testing, Idaho, 2011-2013

Table 40: Health Care Coverage, Percentage Without Coverage, Idaho, 2011-2013

Table 41: Medicaid Enrollment: Annual Average Enrollees, Idaho, 2012

Table 42: Medicare Enrollment, Aged and Disabled, Total, Idaho, 2012

Table 43: Medicare Advantage Enrollment, Number of Enrollees, Idaho, 2012

Table 44: Primary Care Physicians, Non-Federal, Primary Care, Idaho, 2012

Appendix C: Health Risk Indicator Supplemental Materials

Table 45: Fruit and Vegetable Consumption, Idaho, 2011-2013

Table 46: Physical Activity, Idaho, 2011-2013

Table 47: Cigarette Smoking, Idaho, 2011-2013

Table 48: Smokeless Tobacco Use, Idaho, 2011-2013

Table 49: Binge Drinking, Idaho, 2011-2013

Table 50: Heavy Drinking, Idaho, 2011-2013

Table 51: Illicit Drug Use, Idaho, 2011-2013

Table 52: Seat Belt Use, Idaho, 2011-2013

Appendix D: Shortage Designation Development Supplemental Materials

Map 1: Primary Care Health Professional Shortage Area Service Areas, Idaho, 2014

Map 2: Dental Health Professional Shortage Area Service Areas, Idaho, 2014

Map 3: Mental Health Professional Shortage Area Service Areas, Idaho, 2014

Map 4: Facility Health Professional Shortage Area Service Areas, Idaho, 2014

Map 5: Medically Underserved Areas (MUAs) and Medically Underserved Populations (MUPs), Idaho, 2014

Table 53: Primary Care Health Professional Shortage Areas (HPSAs), Idaho 2014

Table 54: Dental Health Professional Shortage Areas (HPSAs), Idaho, 2014

Table 55: Mental Health Professional Shortage Areas (HPSAs), Idaho, 2014

Table 56: Facility Health Professional Shortage Areas (HPSAs), Idaho, 2014

Table 57: Medically Underserved Areas and Populations, Idaho, 2014

Table 58: Primary Care Health Professional Shortage Areas, Designated Land Area, Idaho, 2014

Table 59: Dental Health Professional Shortage Areas, Designated Land Area, Idaho, 2014

Table 60: Medically Underserved Areas and Populations, Designated Land Area, Idaho, 2014

Table 61: Primary Care Health Professional Shortage Areas, Percent Designated (State Total), Idaho, 2014

Table 62: Dental Health Professional Shortage Areas, Percent Designated (State Total), Idaho, 2014

Table 63: Mental Health Professional Shortage Areas, Percent Designated (State Total), Idaho, 2014

Table 64: Medically Underserved Areas and Populations, Percent Designated (State Total), Idaho, 2014

Appendix E: Primary Care Programs and Resources Supplemental Materials

Table 65: Community Health Centers, Locations and Services, Idaho, 2014

Table 66: Rural Health Clinics, Idaho, 2014

Table 67: Critical Access Hospitals, Idaho, 2014

Table 68: Critical Access Hospitals, Hospital-Owned or Operated Primary Care Clinics, Idaho, 2013

Table 69: Critical Access Hospitals, Facility Beds (by Type), Idaho, 2013

Table 70: Critical Access Hospitals, Services Offered, Idaho, 2013

Table 71: National Health Service Corps, Providers by Discipline and Specialty, Idaho, 2014

Table 72: National Health Service Corps, Primary Care Providers by County and Specialty, Idaho, 2014

Table 73: National Health Service Corps, Primary Care Providers by County and Discipline, Idaho, 2014

Table 74: National Health Service Corps, Primary Care Providers by County and Obligation End Date, Idaho, 2014

Table 75: National Health Service Corps, Dental Providers by County and Specialty, Idaho, 2014

Table 76: National Health Service Corps, Dental Providers by County and Discipline, Idaho, 2014

Table 77: National Health Service Corps, Dental Providers by County and Obligation End Date, Idaho, 2014

Table 78: National Health Service Corps, Mental Health Providers by County and Specialty, Idaho, 2014

Table 79: National Health Service Corps, Mental Health Providers by County and Discipline, Idaho, 2014

Table 80: Conrad J-1 Visa Waiver Program, Idaho, 2004-2014

Table 81: Conrad J-1 Visa Waiver Program, Specialties by County, 2004-2014

Table 82: Conrad J-1 Visa Waiver Program, Annual Applications by Specialty, Idaho, 2004-2014

Appendix F: Educational Opportunity and Residency Program, Miscellaneous Supplemental Materials

Table 83: Residency Program Overview, Idaho, 2014

Table 84: Total Resident Population (by Race), Idaho, 2012

Table 85: Total Resident Population (Age 65 Years and Over), Idaho, 2012

Glossary of Acronyms

AAFP – American Academy of Family Physicians

AAMC – Association of American Medical Colleges

ABFM – American Board of Family Medicine

ACA – Affordable Care Act

ACGME – Accreditation Council for Graduate Medical Education

ACNS – Adult Gerontology Clinical Nurse Specialist

AHEC – Area Health Education Center

AHRF – Area Health Resource File

AMA – American Medical Association

AOA – American Osteopathic Association

ARRA – American Recovery and Reinvestment Act

BCRS – Bureau of Clinician Recruitment and Service

BRFSS – Behavioral Risk Factor Surveillance System

BSU – Boise State University

CAFM – Council of Academic Family Medicine

CAH – Critical Access Hospital

CHC – Community Health Center

COCA – Commission on Osteopathic College Accreditation

DNP – Doctor of Nursing Practice

FACP – Fellow of the American College of Physicians

FAAFP – Fellow of the American Academy of Family Practice

FMRI – Family Medicine Residency of Idaho

FNP – Family Nurse Practitioner

GME – Graduate Medical Education

HPSA – Health Professional Shortage Area

HRSA – Health Resources and Services Administration

IAC – Idaho Association of Counties

IAFP – Idaho Academy of Family Physicians

IDHW – Idaho Department of Health and Welfare

IMA – Idaho Medical Association

IMG – International Medical Graduate

IMU – Index of Medical Underservice

IPCA – Idaho Primary Care Association

ISU – Idaho State University

MUA – Medically Underserved Area

MUP – Medically Underserved Population

NCCPA – National Commission for Certification of Physician Assistants

NHSC – National Health Service Corps

NPDB- National Practitioner Data Bank

PANCE – Physician Assistant National Certification Examination

PCMH – Patient Centered Medical Home

PCO – Primary Care Office

PMHNP – Psychiatric Mental Health Nurse Practitioner

RHC – Rural Health Clinic

RHCAP – Rural Health Care Access Program

RPIP – Rural Physician Incentive Program

RTT – Rural Training Track

SAIPE – Small Area Income and Poverty Estimates

SLRP – State Loan Repayment Program

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