



HEALTH PROVIDER NETWORK ADEQUACY REPORT #1 2019

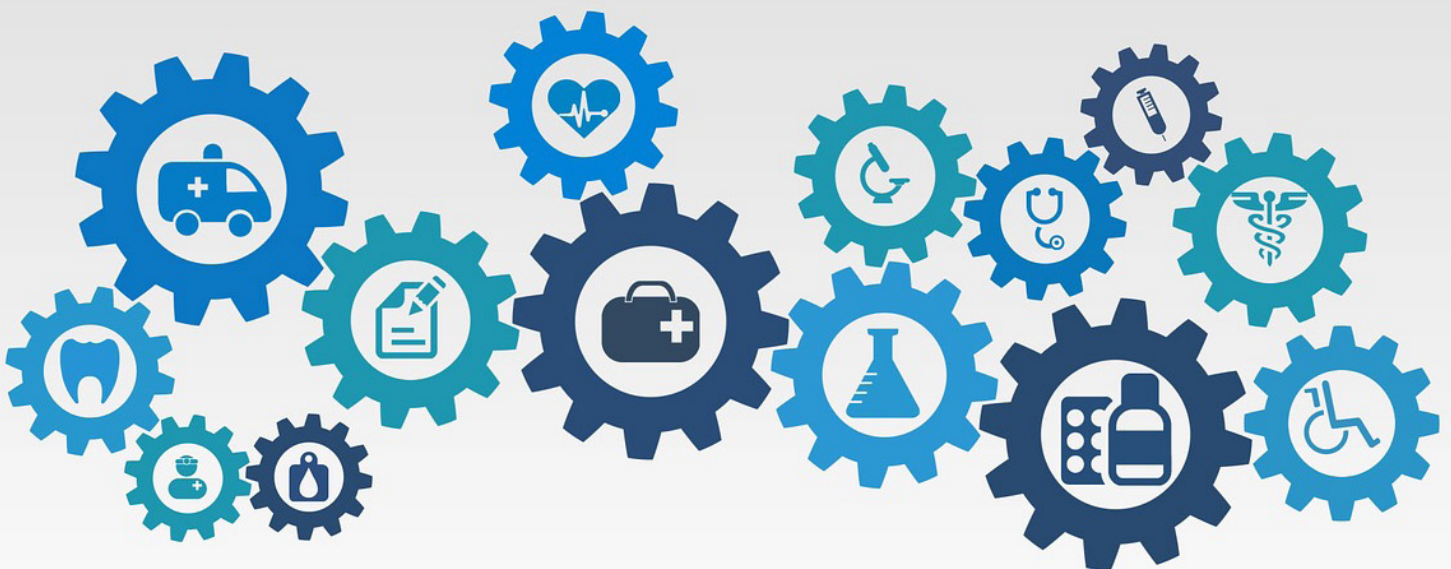


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HEALTH PROVIDER NETWORK ADEQUACY

EXECUTIVE SUMMARY

Private insurance plans are striving to bend the healthcare cost curve in response to the 2010 Affordable Care Act. There is growing concern that this trend may lead unexpectedly to inadequate or delayed coverage for plan members due to possible shrinkages of provider networks. Through a thorough review of the literature on provider network adequacy, this study identifies 34 potential criteria instrumental to measuring the adequacy of the networks and reports them one by one with their respective advantages and disadvantages. In addition, measurement strategies for each criterion are proposed. Among the 34 potential criteria, this study recommends 11 criteria best suited to measure network adequacy in Idaho. Specific data are reported for reference that could be useful to Idaho Department of Insurance in developing network adequacy standards.



INTRODUCTION

The environment of federal and state health insurance marketplaces established by the 2010 Affordable Care Act (ACA) has driven insurers to sell insurance plans with lower premiums.¹ Although this may be a sign of the containment of insurance costs, a growing concern exists that insurers may attempt to shrink their provider networks in order to sustain lower premiums, causing inadequate or delayed coverage for plan members.²

Traditionally, states are responsible for overseeing and regulating insurance plans in the private market.³ Nationally, state standards for network adequacy have two major types: qualitative or quantitative. A good example of the former is requiring health carriers maintain a network that is sufficient in numbers and appropriate types of providers.⁴ Among states that adopted quantitative standards, popular standards include maximum travel time/distance standards, wait times to appointment and member-provider ratios.⁵

This study identifies potential criteria to help Idaho ensure network adequacy of commercial plans in the private market. An extensive and rigorous literature review reveals 34 potential criteria. They are grouped into six major categories by properties of each criterion: geography, access, capacity, informational, quality and consumer protection. Among these criteria, the study recommends 11 criteria for use by the Idaho Department of Insurance based on an evaluation of their strengths and weaknesses: *travel time/distance* and *urban/rural area* from the geographic category; *multilingual access* and *24/7 access to providers* from the access category; *provider-to-member ratio*, *P-to-M ratio by specialization*, *appointment wait times*, and *out-of-network to in-network usage ratio* from the capacity category; *frequency of provider-directory update* from the informational category; *total number of complaints* from the quality category; and *continuity of care requirement* from the consumer protection category. Specific data used for Medicare Advantage plans, state marketplaces and Medicaid plans are reported for the three most commonly used criteria: *provider-to-member ratio*, *appointment wait times*, or *travel time/distance*.

This study begins with an overview of U.S. state laws followed by a description of the Centers for Medicare & Medicaid Services (CMS) standards for Medicare Advantage plans. The methods or tools currently used by other state agencies are identified and the strengths and weaknesses of potential criteria are then discussed. Next, measurement strategies for the criteria and recommendations are provided. Lastly, commercially available tools and non-commercial tools are introduced.

BACKGROUND

OVERVIEW OF U.S. LAWS

In order to assess the adequacy of Idaho's insurance provider network, it is instructive to first look at what other states have done in this area. Some sources specify state statutes or relevant regulations regarding network adequacy. Each of these has advantages and disadvantages in terms of the comprehensiveness of states included, as well as the

timeliness and depth of available information.

Model legislation prepared by the National Association of Insurance Commissioners (NAIC) known as the *Health Benefit Plan Network Access and Adequacy Model Act* (Model Act) includes a comprehensive table that specifies the status of state adoption and other activities pertaining to network adequacy with specific statutes, regulations or administrative guidance. With information current as of the Q4 2018, NAIC provides an overview for 56 jurisdictions (all 50 states plus American Samoa, District of Columbia, Guam, Northern Marianas, Puerto Rico and the U.S. Virgin Islands). Five states have adopted the latest version of the Model Act: Colorado, Connecticut, Georgia, Hawaii and Maryland. Table 1 summarizes NAIC information on network adequacy statutes or regulations for states adjacent or near Idaho: Colorado, Montana, Nevada, Oregon, Utah, Washington and Wyoming. Colorado is included because the state holds relevance for Idaho, as it is also characterized by a greater composition of rural counties like Idaho.⁶

TABLE 1: SELECTED STATES' ACTIVITIES FOR NETWORK ADEQUACY, Q4 2018

State	NAIC's Health Benefit Plan Network Access and Adequacy Model Act Adopted?	Related State Activity
Colorado	3 COLO. CODE REGS. §§ 702-4:4-2-53; 702-4:4-2-54 (2017).	COLO. REV. STAT. §§ 10-16-701 to 10-16-709 (1997/2013) (previous version of model); BULLETIN B-4.54 (2013).
Montana	No	MONT. CODE ANN. §§ 33-36-101 to 33-36-105 (1998/1999) (previous version of model).
Nevada	No	-
Oregon	No	OR. REV. STAT. § 743B.202 (1997/2015); OR. ADMIN. R. 836-053-1190 (1998/2002) (small group).
Utah	No	-
Washington	No	WASH. ADMIN. CODE §§ 284-170-200 to 284-170-390 (1998/2016).
Wyoming	No	-

Source: This is part of the complete table where the entire states are listed; NAIC. *Health Benefit Plan Network Access and Adequacy Model Act*. 4th Quarter 2018. <https://www.naic.org/store/free/MDL-074.pdf> (Accessed May 4, 2019), pp.ST-74-3 - ST-74-6.

Another source, Baker and Town's *Health Insurance Exchanges 2.0 Dataset*, offers detailed information about distance and time standards for Qualified Health Plans (QHPs) purchased in federal or state marketplaces for 50 states and the District of Columbia, current as of January 2015.⁷ This dataset also includes references to relevant laws, regulations or guidance. In particular, it specifies state standards for the maximum urban/rural/frontier travel distance both in miles and in minutes by primary care providers and other provider types (hospitals, all specialists, critical access hospitals, outpatient services, mental health/substance abuse providers). This dataset reveals that the majority of marketplaces - specifically 62%⁸ - of the total 52 marketplaces actually do not have quantitative standards set for travel distance.⁹ This study will discuss details about other states' adoption of quantitative standards later in the report.

CMS STANDARDS FOR MEDICARE ADVANTAGE PLANS (& NECESSARY ADJUSTMENTS TO USE FOR COMMERCIAL)

The Centers for Medicare & Medicaid Services (CMS) groups counties into five categories according to population and density: Large Metro, Metro, Micro, Rural and Counties with Extreme Access Considerations (CEAC).¹⁰ Specific thresholds for each type are shown in Table 2.

TABLE 2: COUNTY TYPES BY POPULATION AND DENSITY

County Designation	Population	Density
Large Metro	≥ 1,000,000	≥ 1,000/mi ²
-	500,000 – 999,999	≥ 1,500/mi ²
-	Any	≥ 5,000/mi ²
Metro	≥ 1,000,000	10 – 999.9/mi ²
-	500,000 – 999,999	10 – 1,499.9/mi ²
-	200,000 – 499,999	10 – 4,999.9/mi ²
-	50,000 – 199,999	100 – 4,999.9/mi ²
-	10,000 – 49,999	1,000 – 4,999.9/mi ²
Micro	50,000 – 199,999	10 – 99.9 /mi ²
-	10,000 – 49,999	50 – 999.9/mi ²
Rural	10,000 – 49,999	10 – 49.9/mi ²
-	<10,000	10 – 4,999.9/mi ²
CEAC	Any	<10/mi ²

Source: Table 3-1: Population and Density Parameters in CMS, Medicare Advantage and Section 1876, 8.

In Idaho, a majority of counties (24) are classified as CEAC, while 12 are Rural. This constitutes over 80% of all Idaho counties. Table 3 summarizes the CMS classifications for each county in Idaho.

CMS data includes county-specific standards for Medicare Advantage plans, including minimum provider numbers, minimum facility numbers, provider time and distance standards, as well as facility time and distance standards. For example, with provider/

TABLE 3: COUNTY TYPES IN IDAHO

County Designation	#	Counties
Metro	3	Ada; Canyon; Kootenai
Micro	5	Bannock; Bonneville; Madison; Payette; Twin Falls
Rural	12	Benewah; Bingham; Bonner; Franklin; Gem; Gooding; Jefferson; Jerome; Latah; Minidoka; Nez Perce; Teton
CEAC	24	Adams; Bear Lake; Blaine; Boise; Boundary; Butte; Camas; Caribou; Cassia; Clark; Clearwater; Custer; Elmore; Fremont; Idaho; Lemhi; Lewis; Lincoln; Oneida; Owyhee; Power; Shoshone; Valley; Washington
Total	44	

Source: CMS, HSD_2019_Reference_File_2018-08-01, (2019) <https://www.cms.gov/medicare/medicare-advantage/medicareadvantageapps/index.html> (Accessed May 5, 2019).

facility time and distance standards, CMS specifies that “at least 90 percent of the beneficiaries residing in a given county [should] have access to at least one provider/facility of each specialty type within the published time and distance standards.”¹¹ Table 4 summarizes these standards according to medical specialization.

TABLE 4: MEDICARE ADVANTAGE: PROVIDER MAXIMUM TIME/DISTANCE REQUIREMENTS

Specialty	Geographic Type									
	Large Metro		Metro		Micro		Rural		CEAC	
	Maximum Time (minutes)	Maximum Distance (miles)	Maximum Time (minutes)	Maximum Distance (miles)	Maximum Time (minutes)	Maximum Distance (miles)	Maximum Time (minutes)	Maximum Distance (miles)	Maximum Time (minutes)	Maximum Distance (miles)
Primary Care	10	5	15	10	30	20	40	30	70	60
Allergy and Immunology	30	15	45	30	80	60	90	75	125	110
Cardiology	20	10	30	20	50	35	75	60	95	85
Chiropractor	30	15	45	30	80	60	90	75	125	110
Dermatology	20	10	45	30	60	45	75	60	110	100
Endocrinology	30	15	60	40	100	75	110	90	145	130
ENT/Otolaryngology	30	15	45	30	80	60	90	75	125	110
Gastroenterology	20	10	45	30	60	45	75	60	110	100
General Surgery	20	10	30	20	50	35	75	60	95	85
Gynecology, OB/GYN	30	15	45	30	80	60	90	75	125	110
Infectious Diseases	30	15	60	40	100	75	110	90	145	130
Nephrology	30	15	45	30	80	60	90	75	125	110
Neurology	20	10	45	30	60	45	75	60	110	100
Neurosurgery	30	15	60	40	100	75	110	90	145	130
Oncology - Medical, Surgical	20	10	45	30	60	45	75	60	110	100
Oncology - Radiation/Radiation Oncology	30	15	60	40	100	75	110	90	145	130
Ophthalmology	20	10	30	20	50	35	75	60	95	85
Orthopedic Surgery	20	10	30	20	50	35	75	60	95	85
Physiatry, Rehabilitative Medicine	30	15	45	30	80	60	90	75	125	110
Plastic Surgery	30	15	60	40	100	75	110	90	145	130
Podiatry	20	10	45	30	60	45	75	60	110	100
Psychiatry	20	10	45	30	60	45	75	60	110	100
Pulmonology	20	10	45	30	60	45	75	60	110	100
Rheumatology	30	15	60	40	100	75	110	90	145	130
Urology	20	10	45	30	60	45	75	60	110	100
Vascular Surgery	30	15	60	40	100	75	110	90	145	130
Cardiothoracic Surgery	30	15	60	40	100	75	110	90	145	130

Source: Table 2: Provider Maximum Time and Maximum Distance Requirements in CMS, HSD_2019_ Reference.

Additionally, CMS standards for minimum facility numbers state: “Organizations must demonstrate that their contracted inpatient hospitals have at least the minimum number of Medicare-certified hospital beds per 1,000 beneficiaries.”¹² CMS also defines the minimum provider ratio as “the number of providers required per 1,000 beneficiaries for provider specialty types.”¹³ Table 5 summarizes these ratios.

Each of these serve as a useful starting point for establishing commercial network standards. While these adequacy standards were developed for Medicare Advantage plans, it is clear that the standards are developed in great specificity. This should be understood in the context that the need for strict protections exists for Medicare members because they are a vulnerable population consisting of seniors or those with disabilities

TABLE 5: MEDICARE ADVANTAGE: MINIMUM PROVIDER RATIOS

Specialty	Geographic Type				
	Large Metro	Metro	Micro	Rural	CEAC
Primary Care	1.67	1.67	1.42	1.42	1.42
Allergy and Immunology	0.05	0.05	0.04	0.04	0.04
Cardiology	0.27	0.27	0.23	0.23	0.23
Chiropractor	0.1	0.1	0.09	0.09	0.09
Dermatology	0.16	0.16	0.14	0.14	0.14
Endocrinology	0.04	0.04	0.03	0.03	0.03
ENT/Otolaryngology	0.06	0.06	0.05	0.05	0.05
Gastroenterology	0.12	0.12	0.1	0.1	0.1
General Surgery	0.28	0.28	0.24	0.24	0.24
Gynecology, OB/ GYN	0.04	0.04	0.03	0.03	0.03
Infectious Diseases	0.03	0.03	0.03	0.03	0.03
Nephrology	0.09	0.09	0.08	0.08	0.08
Neurology	0.12	0.12	0.1	0.1	0.1
Neurosurgery	0.01	0.01	0.01	0.01	0.01
Oncology - Medical, Surgical	0.19	0.19	0.16	0.16	0.16
Oncology - Radiation/Radiation Oncology	0.06	0.06	0.05	0.05	0.05
Ophthalmology	0.24	0.24	0.2	0.2	0.2
Orthopedic Surgery	0.2	0.2	0.17	0.17	0.17
Physiatry, Rehabilitative Medicine	0.04	0.04	0.03	0.03	0.03
Plastic Surgery	0.01	0.01	0.01	0.01	0.01
Podiatry	0.19	0.19	0.16	0.16	0.16
Psychiatry	0.14	0.14	0.12	0.12	0.12
Pulmonology	0.13	0.13	0.11	0.11	0.11
Rheumatology	0.07	0.07	0.06	0.06	0.06
Urology	0.12	0.12	0.1	0.1	0.1
Vascular Surgery	0.02	0.02	0.02	0.02	0.02
Cardiothoracic Surgery	0.01	0.01	0.01	0.01	0.01

Source: Table 1: Minimum Provider Ratios in CMS, HSD_2019_Reference.

and thus have higher demands for medical services.¹⁴ Therefore, some research suggests that standards for commercial plans could be less restrictive than those for Medicare Advantage plans, because 1) commercial plans compete for larger and more general populations than Medicare Advantage plans and 2) the market of commercial plans is, at least to some extent, competitive.¹⁵

METHODS OR TOOLS OF OTHER IDAHO STATE AGENCIES

This study examined methods and tools used by other state agencies when assessing the agency's ability to provide adequate coverage to their constituencies.

Much of the work the Idaho Transportation Department (ITD) does include travel time and distance standards as core components, which inform service level standards. Most analyses utilize GIS software (which is discussed more in-depth in a later section) and estimates travel time using a combination of speed limit data, distance on the road system and level of service to estimate. ITD data is limited to state systems, so local road data would be necessary to conduct similar analyses for provider network adequacy. Experts at ITD recommend using a road's functional class to assign a speed zone to estimate time spent traveling that portion of the road system. They note that service network analysis tools are available and estimate someone with basic GIS knowledge should be able to complete such analysis within 80-120 hours. This would be a one-time analysis, however. Consistent, long-term analysis would necessitate someone on-staff at DOI with the necessary expertise to run the analysis as-needed.

The Idaho Department of Health and Welfare's standard contract language with Idaho Medicaid Providers include travel time, with the caveat that travel time will be calculated during normal traffic conditions and not during peak commute hours. Distance measures are based on how far a provider is from the ZIP code of the enrollee's residence. Additional standards for Medicaid Providers include at least two primary care providers within 30 or 45 minutes (depending on county) or within 30 or 45 miles (also depending on county); some same-day appointments allowed; that insurers implement and maintain a system to document appointment scheduling time; required specializations within networks; and maximum transport time limits to hospitals. As Medicaid primarily serves vulnerable populations, standards for private health networks do not necessarily have to be as strict.

EVALUATION CRITERIA

CRITERIA TYPES

This study includes thorough review of relevant literature and industry materials to identify potential network adequacy criteria. Once identified, each criterion was assessed for strengths and weaknesses, as well as for challenges associated with consistent measurement.

For ease of analysis, this study categorizes each criterion according to what aspect of the provider network it actually assessed: network geography, access to the network, network capacity, informational sources, network quality and, finally, consumer protections. Each

category constitutes a very distinct part of a network’s overall adequacy and, for this reason, standards should include at least one criterion from each category.

GEOGRAPHIC CRITERIA

Geographic criteria are those that measure some spatial component or region-based context that could potentially impact network adequacy. This study identifies four potential criteria in the geographic category: *travel time/distance*, *urban/rural area*, *Health Professional Shortage Area (HPSA) or Medically Underserved Areas/Populations (MUA/P) area* and *geographic terrain*.

Travel time/distance specifies the maximum distance in miles or time between members and providers.¹⁶ This is one of the most common metrics used to assess overall adequacy of provider networks. Tables 6 and 7 summarize benchmarks for travel distance and time standards from a 2015 study by Health Management Associates (HMA), where 13 state insurance departments and eight Qualified Health Plans (QHP) in state marketplaces were surveyed regarding network adequacy standards (as they apply to QHPs).¹⁷ Table 8 summarizes the state standards for Medicaid plans from a 2014 study by the Office of Inspector General of the U.S. Department of Health and Human Services (HHS).

TABLE 6: MAXIMUM DISTANCE BENCHMARK RANGE AND MOST FREQUENTLY USED

		Marketplace	
		Range (miles)	Most Frequent (miles)
PCP	Urban	5 - 60	5, 15, 20
	Rural	15 - 60	60
	Frontier	None	None

Source: Table 3-1. HMA, Making Affordable Care Act Coverage a Reality, 33; complete benchmarks for other provider types are available on Table 3-1.

TABLE 7: MAXIMUM TIME BENCHMARK RANGE AND MOST FREQUENTLY USED

		Marketplace	
		Range (minutes)	Most Frequent (minutes)
PCP	Urban	20 - 30	20
	Rural	30 - 60	None
	Frontier	None	None

Source: Table 3-2. HMA, Making Affordable Care Act Coverage a Reality, 34; complete benchmarks for other provider types are available on Table 3-2.

The *urban/rural area* criterion is intended to measure the remoteness of an area being served by the provider network in order to indicate whether more strict or relaxed standards are necessary. As described in Table 3, Idaho is characterized by a prevalence of rural areas and many counties in the state are sparsely populated. Developing network adequacy criteria should take this into account, as other states have done. For instance, Table 8 shows different standards for Washington depending on county type.

Urban and rural designations are not the only way to consider geographic characteristics. An area’s designation as a *Health Professional Shortage Area (HPSA) or Medically Underserved Areas/Populations (MUA/P)* is another potentially useful classification to

TABLE 8: SELECTED STATES: MAXIMUM TIME/DISTANCE STANDARDS FOR MEDICAID PLANS

State	Maximum Standards for Distance or Time (2013)	
	Primary Care Providers	Specialists
Colorado	Within 30 minutes or 30 miles	Within 30 minutes or 30 miles
Nevada	Within 25 miles	No standard
Utah	At least two providers within 40 minutes or 40 miles	No standard
Washington	Urban: At least two providers within 10 miles for 90% of enrollees Rural: Within 25 miles for 90% of enrollees	No standard

Source: This is part of Table A-1: Distance and Time Standards by State, 2013 (Montana, Oregon, Wyoming are not included) in HHS, Office of Inspector General, State Standards for Access, 22-23.

identify inadequate areas of the state. HPSA or MUA/P data are electronically available by county from the Health Resources & Services Administration (HRSA).¹⁸

A final potential geographic criterion is *geographic terrain*. More specifically, local geographic barriers, such as mountain ranges or large bodies of water, may introduce a complicating factor when assessing network adequacy. If a provider network is intended to serve members across geographic barriers, then it may require additional modes of transportation, such as helicopters or specialized vehicles in order to traverse this terrain. This can have a pronounced effect on travel standards. Consequently, a lack of such alternative transportation could be considered an inadequacy of the network.¹⁹

GEOGRAPHIC CRITERIA STRENGTHS AND WEAKNESSES

Among criteria in geographic category, *travel time/distance* is the most instrumental in forming a network capable of meeting basic medical demands.²⁰ As noted, it is one of the most used criteria in assessing network adequacy, ensuring that Idaho data can be compared to other areas of the country. Additionally, it serves as an effective measure of the effort a patient must exert in order to access the network itself. That said, it only measures on dimension of a network’s overall adequacy and does not necessarily guarantee a patients timely access to providers.²¹

The remaining three criteria are similar in that each accounts for regional differences within a network, such as *urban/rural area*, *HPSA vs. MUA/P area*, and *geographic terrain*. While the *urban/rural area* criterion is widely utilized, the latter two could be considered to capture further regional diversity. The long-term usefulness of all three may be limited because they do not directly measure network adequacy and instead capture a geographic characteristic that may or may not affect the overall adequacy of the network.

ACCESS CRITERIA

Access criteria are those that assess how easily patients can access use of the provider network. For the category of access, this study identifies five potential criteria: *multilingual access*, *telephone access to providers*, *percentage of primary care providers with hospital admitting privileges*, *telemedicine access* and *access-related performance measures*.

Multilingual access refers to whether members can reach providers in their preferred languages through multilingual providers or through access to interpreters.²² According to the U.S. Census Bureau's American Community Survey (2013-2017), approximately 11 percent of Idaho's population speak a language other than English and four percent of the population speak it less than "very well."²³ Consequently, lack of multilingual access can directly impact the adequacy of a network.

Another criterion, *24/7 access to providers*, concerns whether providers can be reached by members after business hours.²⁴ This can help identify if a network is accessible to its patients throughout all hours of day or only a certain portion of it, potentially creating a gap in service.

A third criterion is *percentage of primary care providers with hospital admitting privileges*.²⁵ This criterion actually captures two dimensions of care. First, and most directly, primary care providers' hospital admitting privileges can refer to "the right granted to a doctor to admit patients to a particular hospital."²⁶ This dimension directly captures how easily a member of a network can gain access to other areas of the network, especially those located within a larger hospital, which can be particularly critical if that hospital is the only one serving a particular area. A primary care provider with admitting privileges reduces the effort the member must make in order to gain wider access to the full network. The second dimension this criterion captures is the ability of members to be treated by their own, in-network providers during periods of hospitalization, thereby increasing the continuity of their care.²⁷

Telemedicine or telehealth is a fourth criterion and is defined as "the use of technology as a substitute for an in-person encounter with a health care professional."²⁸ Known modes of telemedicine delivery include videoconferencing or electronic transference of patient information.²⁹ This increases member access to specialized care that may otherwise be unavailable to them. The State of Colorado considers telemedicine as one method of achieving network adequacy.³⁰

Lastly, *access-based performance measures* are potential criteria that can help assess a component of preventative care to increase the overall health of network members. For instance, the State of Ohio requires that Medicaid plans show a certain percent of members under 20 years of age visit primary care providers at least once per year.³¹ This is an example in which performance measures are included as a way of facilitating members' access to the network.

ACCESS CRITERIA STRENGTHS AND WEAKNESSES

Criteria in the access category contribute to the improvement of member access to care. For example, the availability of interpreters (*multilingual access*) allows minority groups to receive timely care that they otherwise would not. *24/7 access to providers* after business hours could extend member access for medical assistance even at night. While *telemedicine* or telehealth is still in its infancy, the potential of telemedicine for rural counties in Idaho is substantial, providing access to specialized care that otherwise would not be available to them.³² On the other hand, a main weakness found across these access criteria is cost or difficulty in measuring, collecting, and analyzing data in a rigorous way for each criterion for various specialties (*multilingual access, 24/7 access to providers, percentage of primary care providers with hospital admitting privileges*). This weakness could particularly loom large for states that do not have data management capacity already.

CAPACITY CRITERIA

Capacity criteria measure the ability of a network to handle more members and offer more specialized services. For this category, we identified 10 potential criteria: *member-to-provider ratio*, *member-to-provider ratio by specialization*, *appointment wait times*, *in-office wait times*, *N/rates for out-of-network providers in in-network facilities*, *utilization rates of emergency rooms*, *essential community provider in-network*, *out-of-network to in-network usage ratio*, *percentage of primary care providers accepting new patients* and *provider hours of operation*.

The first and second criteria are closely related: *member-to-provider* (or, provider-to-member) *ratio* and *member-to-provider* (or, provider-to-member) *ratio by specialization* (i.e., provider types). Like distance and travel time, it is one of the most common standards used to assess network adequacy. Despite variations of these standards, they basically concern how many members can be included at maximum per provider.³³ Table 9 shows the median number of member-to-provider ratios calculated by HMA. The study includes additional benchmark ratios for other provider types.

TABLE 9: MEDIUM MEMBER TO PROVIDER RATIO BENCHMARK

		State Insurance Department	Qualified Health Plans
PCP	Urban	2,000	600
	Rural	2,000	600
	Frontier	None provided	None

Source: Table 2-2, Health Management Associates (HMA), *Making Affordable Care Act Coverage a Reality*, 31; complete benchmarks for other provider types are available at Table 2-2.

The next criterion, *appointment wait times*, refers to “the maximum wait time in days within which a member must be seen by a provider.”³⁴ Getting members in to see providers near the time when their health issue arises is a fundamental measure of network adequacy and helps ensure that those issues do not get worse or more costly. Ranges and the most indicated number of appointment wait times from the 2015 HMA study appear in Table 10.

TABLE 10: APPOINTMENT WAIT TIME STANDARDS IN DAYS

Appointment Type	State Insurance Department		Qualified Health Plan	
	Range	Most Frequent	Range	Most Frequent
Well care	15	None	7 - 30	30
Routine care	10 - 120	None	7 - 30	14
Urgent care	2	2	1 - 2	1
Emergency care	0	None	0 - 1	0
Initial pre-natal care	None	None	None	None

Source: Table 4-2, HMA, *Making Affordable Care Act Coverage a Reality*, 35; for accurate interpretations, refer to Table 4-2 and footnotes at p.35.

Member-to-provider ratio and wait times for appointments are fairly common adequacy standards and are specified for Medicaid plans by 33 state Medicaid agencies in the 2014 HHS study.³⁵ Tables 11 and 12 show member to provider ratios and appointment wait times of selected states' Medicaid plans.

TABLE 11: SELECTED STATES: MEMBER TO PROVIDER RATIO FOR MEDICAID PLANS

State	Enrollees per Primary Care Provider	Enrollees per Specialist
Colorado	2,000 enrollees	2,000 enrollees
Nevada	1,500 enrollees	1,500 enrollees
Utah	No standard	No standard
Washington	No standard	No standard

Source: This is part of Table C-1: Provider-to-Enrollee Standards by State, 2013 (Montana, Oregon, Wyoming are not included) in HHS, Office of Inspector General, State Standards for Access, 26-27.

TABLE 12: SELECTED STATES: APPOINTMENT WAIT TIMES FOR MEDICAID PLANS

State	Maximum Appointment Wait Times (Days)			
	Primary Care		Specialist	
	Routine Care	Urgent Care	Routine Care	Urgent Care
Colorado	30	2	No standard	No standard
Nevada	14	2	30	3
Utah	30	2	30	2
Washington	30	2	No standard	No standard

Source: This is part of Table B-1: Appointment Standards by State, 2013 (Montana, Oregon, Wyoming are not included) in HHS, Office of Inspector General, State Standards for Access, 24-25.

Like appointment wait times, *in-office wait times* measures the amount of time members spend waiting to be seen in the provider's office.³⁶ As a capacity measure, this criterion is indicative of how many members a provider has the ability to handle. Minimum wait time standards can add an efficiency component to ensure that members of the network are not forced to endure extraordinary wait times or receive sub-par service within the network.

N/rates for out-of-network providers in in-network facilities is a simple measure of the number or percentage of out-of-network providers in in-network facilities.³⁷ In some instances, members may encounter an unexpected situation where they have to receive service from out-of-network providers at in-network hospitals, which can result in confusion and a higher incidence of balance billing.³⁸ A high rate of out-of-network providers in in-network facilities can be indicative of gaps in the network.

Another criterion, *utilization rates of emergency rooms*, is generally used as a proxy measure to assess network capacity. According to some studies, emergency room (ER) visits are seen as a possible indicator of "inadequate access to care," as members are unable to obtain the care through normal network options and instead opt to use ER services.³⁹ A constant increase of the ER utilization rates might be a symptom of a network getting full, which can presage a shift from adequacy to inadequacy.⁴⁰

Essential community provider in-network is a criterion that indicates whether essential community providers (ECP) are included in the network.⁴¹ ECPs are defined by CMS as

“providers that serve predominately low-income, medically underserved individuals.”⁴² Consequently, their exclusion from provider networks can be indicative of a critical gap in coverage.

The *ratio of out-of-network to in-network usage* is another potential measure of network capacity. As the ratio shifts towards higher out-of-network usage, it is an indicator that in-network services are not able to meet the needs of members. Higher ratios of out-of-network usages over in-network usages can signal that a network is becoming inadequate.⁴³

A ninth criterion, the *percentage of primary care providers accepting new patients*, refers to how many primary care providers are currently accepting new patients. Lower percentages of this measure might be a sign of a network getting full, as members have reduced ability to choose a primary care provider.⁴⁴

Finally, *provider hours of operation* is a measure of total hours of operation for providers. This helps assess whether the network is able to fulfill member needs at all hours of the day or only for select periods of time. The longer the hours of operation, the greater likelihood that members will choose an in-network solution over an out-of-network one.

CAPACITY CRITERIA STRENGTHS AND WEAKNESSES

The preceding capacity criteria can be further sub-defined into two groups: they contribute to either the formation of a capable network that can meet basic medical demands from members (*provider-to-member ratio, P-to-M ratio by specialization, essential community provider in-network, provider hours of operation*) or monitoring how a network is performing (*appointment wait times, in-office wait times, N/rates for out-of-network providers in in-network facilities, utilization rates by ERs, out-of-network to in-network usage ratio, percentage of primary care providers accepting new patients*).

A major weakness for the network formation criteria is that satisfying these criteria does not necessarily guarantee that individual members will receive timely and adequate care.⁴⁵ Also, plans in Idaho may have difficulty meeting *provider-to-member ratio, P-to-M ratio by specialization, essential community provider in-network* in rural counties due to shortages of providers and facilities.⁴⁶ On the other hand, the monitoring measures tend to have issues associated with data measurement/collection/analysis across specialties – e.g., how to measure *wait times* or *out-of-network to in-network usage ratio*? Measurement of these is certainly not impossible, but would involve considerable time and cost.

INFORMATIONAL CRITERIA

The informational criteria refer to those that measure efforts to inform members about in-network options. This study identifies four criteria are under this category: *frequency of provider-directory update, information types in provider-directories, network contraction notification* and *accepting patients notification*.

The first criterion, *frequency of provider-directory updates*, measures how often provider directories are updated to add new in-network options and remove providers that are no longer in the network. Provider directories are one of the main information sources for

current and future members. Outdated information in these directories causes significant confusion and leads to members visiting out-of-network providers, thinking they are actually in-network. Annual directory updates may be too infrequent, as there is increased likelihood of out-of-date information. Similarly, monthly updates may be too frequent, as there may be too few changes to justify the expense. Quarterly updates may strike a balance between the two. Regardless of the exact timeframe, regular updates of the directories and specifying the frequency are useful in evaluating network adequacy.⁴⁷

The second criterion, *information types in provider-directories*, refers to the type of information included within the directories. For example, does the directory indicate what language options are available?⁴⁸ The more information a member has, the better they are able to select in-network options to meet their needs rather than going out-of-network.

In a similar manner, the departure of providers should have a negative impact on network sufficiency. The third criterion, *network contraction notification*, measures whether members are actively informed when a provider leaves the network. This can help prevent members from mistakenly continuing to see a provider, thinking they are in-network when, instead, their status had changed.⁴⁹

Similarly, the final criterion, *accepting patients notifications*, is another way for members to stay informed of in-network options available to them. Actively informing members when providers are accepting new patients is useful and one potential dimension of overall network adequacy.⁵⁰

INFORMATIONAL CRITERIA STRENGTHS AND WEAKNESSES

When assessing the strengths and weaknesses of the informational criteria, it is important to note that some issues related to network inadequacy – for instance, balance bills charged due to outdated provider directories could be avoided by providing members with up-to-date and correct information. As such, informational criteria are useful in correcting information asymmetry between members and insurers/providers. On the other hand, enforcement of these requirements could also be burdensome, not only to providers but to the state. Requiring these criteria in the market would necessitate the state develop a monitoring system and attendant penalties for non-compliance, which would introduce a separate set of challenges with how to ensure that these standards are observed. An effective monitoring of the market will require expertise on data measurement, collection and analysis.

QUALITY CRITERIA

Quality criteria indicate the overall level of service of the provider network, as well as members' level of satisfaction with it. This research identifies seven potential criteria in this category: *number of complaints, complaint type/systemic coding, call center reports/volume, quality rating/customer satisfaction, accreditation, number of claims and definition of primary care provider.*

The *total number of complaints* is a useful indicator of the overall quality of the provider network. Additionally, review of member complaints is one of the most often used methods by states to ensure member access to care.⁵¹ While a simple count can be a

blunt measure, when normalized to account for population disparities, it remains a good indicator of the adequacy of the network. Inadequate networks are more likely to elicit member complaints than adequate ones.

A related metric that builds off of the number of complaints is the classification of those complaints by *complaint type/systemic coding*. This helps reveal patterns and trends within the network to identify specific areas that need attention or revision. Grouping complaints by specific types and tracking them is an effective way to monitor plans.⁵²

Similarly, research suggests that if a state runs its own call center, careful analysis of communications with members – focused on *call center reports/volume* – allow the state to identify whether a network is becoming full.⁵³

A large component of network adequacy is the overall member experience. In that sense, another potential criterion is the *quality rating/customer satisfaction* with the network. Unlike most of the criteria considered up to this point, this metric is far more subjective and would have to be self-reported by the individual members. Towards that end, member experiences with network providers could be obtained through systematic customer satisfaction surveys administered by the state. Alternatively, members could be allowed to post reviews on their insurance plans in an online marketplace.⁵⁴

Another method of assessing network adequacy is through *accreditation* by a third-party organization, such as the National Committee for Quality Assurance (NCQA).⁵⁵ These accrediting organizations have their own standards and metrics embedded in their process, providing an avenue to meet several components of network adequacy with a single criterion. Additionally, it would provide access to a network of other provider networks that have been similarly accredited. On the other hand, it would cede at least some of the ability to develop unique, state-specific standards.

Like complaint data, analysis of the *total number of claims* could be an effective method of detecting network problems.⁵⁶ Like complaints, numbers would have to be normalized to account for population disparities between regions. That being said, claims data ultimately serve as an indicator of the overall usage of the network and by itself could not be used to intuit network deficiencies. To do so, claims data would need to be analyzed to compare out-of-network claims to in-network claims.

Finally, the *definition of primary care provider* (PCP) in the network is another potential criterion. Research indicates that some networks define PCP's broadly in order to inflate the number within their network and thereby mask inadequacies. Proper utilization of this criterion would require a standardized definition across networks to ensure direct comparisons, which would then leverage the total number of PCP's within network as a stronger indicator of network adequacy.⁵⁷

QUALITY CRITERIA STRENGTHS AND WEAKNESSES

A careful examination of data for many criteria or standards in the quality category (*total number of complaints, complaint type/systemic coding, call center reports/volume, quality rating/customer satisfaction, number of claims*) could be highly useful at detecting network inadequacy. Accordingly, how to measure, collect and analyze data for these criteria or standards are barriers to using these criteria.

CONSUMER PROTECTION CRITERIA

The final category of metrics are consumer protection criteria. These criteria are network requirements that offer a safety net for members and protect them from potentially unfair practices. Our research identified four potential criteria for consumer protection: *Mandatory arbitration of balance bills*, *continuity of care requirement*, *out-of-network use compensation as a result of out-of-date directories* and *dispute resolution panel of independent medical experts*.

Mandatory arbitration of balance bills increases a patient's ability to negotiate balance bills that are incurred due to service by an out-of-network provider. Often these cases involve a specialty provider (e.g., anesthesiologist) that is out-of-network at an in-network hospital. A state insurance department could begin a mandatory arbitration procedure where plans and providers are requested to join.⁵⁸

Continuity of care requirements would mandate that plans offer temporary coverage for new members who have been receiving an out-of-network treatment for current conditions.⁵⁹

Out-of-network use compensation as a result of out-of-date directories requires plans to provide coverage for an occasion where members utilized out-of-network providers due to incorrect provider directories.⁶⁰

A dispute resolution panel of independent medical experts is a mechanism for resolving disputes between consumers and insurers. A panel of third-party medical experts hear disputed cases between patients and insurance plans when a member pursues access to a provider out of network for their particular condition due to the network insufficiency.⁶¹

CONSUMER PROTECTION CRITERIA STRENGTHS AND WEAKNESSES

Criteria or standards in the consumer protection category could be considered to ensure patients adequate/timely care with reasonable cost (*mandatory arbitration of balance bills*, *continuity of care requirement*, *out-of-network use compensation as a result of out-of-date directories*, *dispute resolution panel of independent medical experts*). In particular, *dispute resolution panel of independent medical experts* could play a quasi-judiciary role in protecting members in a dispute that happened because of an insufficient network.⁶² The reliance on the dispute resolution panel could relieve some burden from government as well.⁶³ An effective oversight of individual cases regarding most of these criteria/standards in this category (*continuity of care requirement*, *out-of-network use compensation as a result of out-of-date directories*, *dispute resolution panel of independent medical experts*) would require accurate information; therefore, these criteria share the challenges of data measurement, collection and analysis in common.

HOW TO MEASURE THESE CRITERIA

Two criteria can be measured in a very straightforward manner: *travel time/distance standards* and *quality rating*. *Travel time/distance standards* can be measured by mapping locations of providers/facilities and members.⁶⁴ *Quality rating* can be measured if states

conduct customer satisfaction surveys.

Measurement methods of other criteria tend to fall into two major categories: requesting data from insurers and using claims data. First, states can consider requesting data from insurers. In California, insurers are required to submit a series of annual reports for network adequacy to the state. These include annual provider network reports, timely access and network adequacy grievance reports, optional telehealth reports, timely access compliance reports, annual out-of-network payment reports and enrollee satisfaction surveys conducted by insurers. Requiring the same type of reporting in Idaho is likely the most effective way to gather information. Additionally, standardizing the format of this reporting will allow more longitudinal analysis in the future, as relevant metrics will be captured consistently over time.

Many criteria listed can be measured by requesting report submission from insurers as suggested below:

- Data on *multilingual access, provider-to-member ratio, P-to-M ratio by specialization, percentage of primary care providers accepting new patients* can be obtained by requiring an annual provider network report.
- A timely access and network adequacy grievance report could include specific complaint codes, such as *24/7 access to providers* and *in-office wait times*. Such reports could also measure *total number of complaints*, among other criteria.
- An annual compliance report submitted by insurers to the state could be utilized to collect the following criteria: *appointment wait time, telemedicine access, and N/rates for out-of-network providers in in-network facilities*. Other states' reports could be used as a template for development of an Idaho-specific report.
- Enrollee satisfaction surveys are typically conducted by insurers. By carefully crafting questionnaires with effective open-ended questions, information can be gathered regarding such criteria or requirements as *provider hours of operation, continuity of care, frequency of provider-directory update, information types in provider-directories, network contraction notification* and *accepting patients' notification*.

The other major category of measurement requires the use of claims data. Data on *utilization rates by ERs, out-of-network to in-network usage ratio* and *number of claims* can be obtained from claims data. Roughly 18 states have already built or are in the process of building a comprehensive claims database known as All-Payer Claims Databases (APCD).⁶⁵

RECOMMENDATIONS

There were three overriding parameters that guided the following list of recommended criteria: 1) inclusion of metrics with widespread use in other states to ensure comparative analysis opportunities with data from other states in the future; 2) inclusion of at least one metric from each of the six criteria categories in order to ensure consideration of all areas of network adequacy; and 3) inclusion of measures of core network adequacy

functionality were taken into account.

With these parameters in mind, this research recommends the following 11 criteria based on an evaluation of their strengths and weaknesses: two from the access category (*multilingual access, 24/7 access to providers*), four from the capacity category (*provider-to-member ratio, provider-to-member ratio by specialization, appointment wait times, out-of-network to in-network usage ratio*), one from the consumer protection category (*continuity of care requirement*), two from the geographic category (*travel time/distance, urban/rural area*), one from the informational category (*frequency of provider-directory updates*), and one from the quality category (*total number of complaints*).

Provider-to-member ratio, provider-to-member ratio by specialization, and travel time/distance are recommended as they are quantitative standards that are common across states. As mentioned earlier, setting up these standards facilitates the formation of a capable network satisfying basic medical demands from members and enables the state to ensure commercial plans achieve a network coverage comparable to other states. This study cites specific standards used in different markets (i.e., Medicare Advantage plans, state marketplaces and Medicaid plans) for reference in future discussions regarding the development of network adequacy standards.⁶⁶ Provider-to-member ratios need to be collected via annual reports by insurers, while travel time and distance necessitate spatial analysis of member residences and provider locations.

Appointment wait times is recommended for similar reasons; it is one of the most popular criteria used by states. It serves as a direct outcome measure of network adequacy, whereas provider-to-member ratio and travel time/distance do not necessarily promise adequate care.⁶⁷ While *appointment wait times* and *in-office wait times* are related, *appointment wait times* are recommended over *in-office wait times* because *appointment wait times* serves as a more direct measure of network adequacy. *In-office wait times* is more a performance indicator for specific providers. Additionally, *in-office wait times* are difficult to measure. *Appointment wait times* work equally well for both rural and urban counties. Again, data collection would be facilitated through an annual reports by insurers.

Out-of-network to in-network usage ratio is recommended because it indicates how full a network is getting. Members will likely seek out-of-network providers when they cannot be treated within their network in an adequate or timely manner. Thus, higher ratios of out-of-network usage over in-network have great potential as an immediate network adequacy indicator. Regular monitoring of this ratio allows ongoing tracking of network capacity. It would require the establishment of a claims database to allow for direct categorization and analysis of out-of-network versus in-network claims, which facilitates long-term evaluation.

Given its particular relevance to Idaho, we also recommend *urban/rural area* as a classification. The state has three metro and five micro counties, while the remaining counties are considered rural (12 rurals and 24 CEACs). Such a characteristic, combined with the state's shortages of providers,⁶⁸ may raise several questions worth considering:

- 1) Does strong competition among providers exist?
- 2) If competition is weak, what would the weak competition imply concerning insurance costs and network adequacy?
- 3) What regulatory role should the state government play to suppress insurance costs and achieve network adequacy?

These questions suggest paying close attention to implications of the rural prevalence when crafting network adequacy standards. The urban/rural dimension could be determined independently of data collection by adapting CMS' classification system. Each provider and/or provider-network must be appropriately classified in the network adequacy database in order to facilitate subsequent analysis.

Multilingual access is recommended as a criterion given overall demographic trends. Like the urban/rural criterion, this is more relevant to some area than others. As previously noted, statewide 11% of Idahoans over the age of five speak a language other than English, while 4% speak it less than “very well.” In Canyon County, those numbers increase to 18% and 6.7%, respectively. In Lincoln County, the increase is more dramatic: 27% speak a language other than English, while 14.7% speak it less than “very well.” In order for provider networks to be adequate in these areas, multilingual access is critical. *Multilingual access* can be collected (or verified) through an annual report by insurers.

To ensure timely access to the network, especially for acute needs, *24/7 access to providers* is recommended as criterion. Thanks to advances in technology, the form of this access can change. For some providers, it might be 24/7 telephone access. For others, a text messaging system may be preferred. Members should have some way of accessing in-network providers at all hours and this criterion is a good way of measuring that capacity. Specific access systems can be described and recorded in an annual report by insurers.

The *total number of complaints* is recommended as an indicator of member satisfaction with the network, as well as the network's quality. *Frequency of provider-directory updates* is recommended as a way to increase network efficiency and maintain a timely picture of the overall network so gaps do not go unnoticed over long periods of time. Finally, *continuity of care requirement* is recommended as a consumer protection criterion that provides a transition period when network contraction leaves members without access to a formerly in-network provider responsible for care.

TABLE 13: RECOMMENDED CRITERIA BY CATEGORY, VARIABLE AND COLLECTION MECHANISM

Criteria	Category	Variable Type	Mechanism
Multilingual Access	Access	Dummy	Annual Report
24/7 Access to Providers	Access	Percentage	Annual Report
Provider to Member Ratio	Capacity	Calculation	Annual Report
Provider to Member Ratio by Specialization	Capacity	Calculation	Annual Report
Appointment Wait Times	Capacity	Time	Annual Report
Out of Network to In-Network Usage Ratio	Capacity	Calculation	Claims Database
Continuity of Care Requirement	Consumer Protection	Dummy	Annual Report
Travel Time/Distance	Geographic	Spatial	Mapping Locations
Urban/Rural Area	Geographic	Categorical	Dept. Classification
Frequency of Provider-Directory Update	Informational	Time	Annual Report
Total Number of Complaints	Quality	Quantity	Annual Report

TOOLS AVAILABLE

Once network adequacy criteria are selected, it is important to consider the logistics of collecting the data and identifying the toolsets necessary to analyze the data. These are generally sorted into two sets of needs. The first is database storage of discrete metrics at the provider or network level. Seven of the ten metrics recommended in this report are anticipated to be collected via an annual report by the insurer. These metrics would be entered into a database that can be used in other programs for analytic purposes. There is an opportunity for an electronic reporting system that automatically enters data into a database at the point of collection. Compatibility with subsequent software should be a consideration, but most basic database creation tools (such as Access or SQL-based alternatives) have the ability to export to Excel, which most spatial software can import. Ideally, this dataset is then used to supplement additional and more specialized analysis. Spatial programs are necessary in order to assess time and distance metrics, although spatial analysis of other collected criteria is essential in assessing full network adequacy. This review of potential software options identified eight potential options (Table 13 summarizes these options):

- **ArcGIS** – The ArcGIS software from Esri is an industry standard for spatial analysis that offers a robust support system and is widely used. While not geared specifically to health provider networks, specialized toolsets for ArcGIS are able to conduct network analysis and DOI would be able to leverage pre-existing Idaho data. ArcGIS is used by the Idaho Transportation Department, suggesting opportunities for agency-to-agency collaboration. Additionally, GIS classes are available at Boise State University. Single-user prices range from \$500/year (ArcGIS Online); \$700/year (ArcGIS Pro Basic); \$2,750/year (ArcGIS Pro Standard); \$3,800/year (ArcGIS Pro Advanced). Basic spatial analysis is possible with the <\$1,000 alternatives, although more advanced packages may be desired depending on employee skill-level with GIS. Experts at ITD estimate that modeling service area adequacy using ArcGIS is anticipated to require approximately 80-120 hours for someone with experience using the program. (<http://www.esri.com/en-us/arcgis/>)
- **QGIS** – QGIS is an open source (i.e., no cost) alternative to ArcGIS. QGIS is not as robust or reliable as ArcGIS and does not have as many specialized plug-ins available. However, it remains a viable alternative that is still able to perform basic spatial analysis. As open source software, it is possible to directly alter the source code to suit DOI's needs. QGIS does boast a limited network of contractors to provide training and support (at separate cost). While core contributors to the project are primarily European-based, there are some contributing companies based in Texas and New Mexico. (<http://www.qgis.org>)
- **Quest Analytics** – Quest Analytics specializes in health plan and healthcare networks, assessing their access, adequacy and accuracy. They offer a range of services, from licensing component pieces of software that DOI can use as a full-service solution wherein Quest Analytics' own team would manage all data and analysis. Pricing would be dependent on the level of service desired. An analysis by Mathematica Policy Research (2017) provides extensive detail of the Quest Analytics software and examines its suitability to the needs of the Washington Health Care Authority, but notes that the “[c]ost of a fully outsourced solution may exceed an internally managed approach” (p. 26). (<http://www.questanalytics.com>)

- **Optum GeoAccess**– The GeoAccess software from Optum is a specialized package of five toolsets intended for analysis of provider networks. The software is able to perform Disruption Analysis, which models the anticipated effect of a change to a provider network. It is also able to natively export provider directories. The aforementioned Mathematica Policy Research analysis directly compares and contrasts GeoAccess with Quest Analytics. One limitation is that GeoAccess does not store data directly and must write to an external database (i.e., SQL, Access). It can use data from Excel to run analyses. Pricing is dependent on how many of the toolsets for which a license is desired. Optum’s website notes that it “serves more than 37 state government Medicaid and health and human service (HHS) agencies” of which Idaho is one. This research was unable to definitively confirm which Idaho state agency, but it suggests an existing support network that DOI could tap into. (<http://www.optum.com>)
- **Encompass** – Encompass is an open source geographic analysis tool developed by Beacon Labs to facilitate analysis of social services. While some spatial analysis is possible with the software, it is not actively supported by Beacon Labs and does not have a robust support network. This would result in DOI largely being responsible for the program’s stability and have limited support in the event of a software crash. (<http://encompass.thebeaconlabs.org>)
- **AccessMod 5** – AccessMod is a free package of tools offered by the World Health Organization to help GIS analysis of physical accessibility issues within health networks. These tools are able to analyze time, coverage areas, time/distance between facilities, geographic sub-areas, as well as ideal locations for future providers. While the toolset is free, it requires the use of existing spatial data for analysis, meaning spatial data must be prepared in another software package first. Consequently, AccessMod 5 is more useful as a facilitator of analysis, but not creation of spatial data. (<http://www.accessmod.org>)
- **R** – R is an open source statistical analysis software package. While not specifically designed for spatial analysis, there are a number of geospatial plug-ins for the software that could be leveraged to meet the needs of DOI. For example, one of these plug-ins, Spatial Accessibility Measures (SpatialAcc) “[p]rovides a set of spatial accessibility measures from a set of locations (demand) to another set of locations (supply). It aims, among others, to support research on spatial accessibility to health care facilities. Includes the locations and some characteristics of major public hospitals in Greece.” There is a significant learning curve for someone who has never used R and some comfort with the software is necessary in order to utilize the more specialized spatial plug-ins. Spatial analysis is limited by what these plug-ins allow. (<https://CRAN.R-project.org>) and <https://CRAN.R-project.org/package=SpatialAcc>)
- **External quality review organizations (EQROs)** – Similar to the end-to-end option from Quest Analytics, another alternative would be for DOI to engage the services of outside organizations and essentially contract-out network adequacy monitoring. This negates the need for specialized software to monitor the provider network in-house, but at a higher cost. Identification of potential EQROs in Idaho falls outside the scope of this report but is a potential option to explore if none of the software alternatives outlined above meet the needs of DOI.

TABLE 14: SUMMARY OF AVAILABLE TOOLS

Tool	Cost	Considerations
ArcGIS	\$500-3,800/year	Industry standard, robust support, does require specialized knowledge
QGIS	Free (open source)	Access to open source spatial analysis toolsets, will require specialized knowledge of platform, additional costs if training is required
Quest Analytics	Custom Pricing depending on client needs	Offers range of services, from individual toolsets up to their own team managing the network adequacy database and analysis; cost could be an issue; specialized in health care
Optum GeoAccess	Custom Pricing depending on client needs	Ability to do disruption analysis, experience with CMS-compliant reporting; does not store data natively within the program, must write to external database; specialized in health care; existing Idaho connection
Encompass	Free (open source)	No longer actively supported, could result in Department wholly responsible for its usage
AccessMod 5	Free (open source)	Requires data prepared for spatial analysis prior to using toolset, potentially necessitating another program first
R	Free (open source)	Growing user base, access to specialized packages, would require learning the underlying statistical program in addition to the spatial plug-in
EQRO	Depends on client needs	Would be necessary to identify companies within this market; may require out-of-state alternatives

CONCLUSION

There are many options for the Department of Insurance to consider when developing network adequacy standards. Measurement of some of the criteria necessitates specialized software or toolsets that may have attendant costs and expertise requirements. Once the Department has selected their preferred criteria a subsequent report will provide an in depth analysis of the considerations, logistics, and requirements of implementing full network adequacy evaluation.

ENDNOTES

- 1 Mark A. Hall and Paul B. Ginsburg, “A Better Approach to Regulating Provider Network Adequacy,” *White Paper of the USC-Brookings Schaeffer Initiative for Health Policy* Washington, DC: The Brookings Institution, Sep 2017. <https://www.brookings.edu/research/a-better-approach-to-regulating-provider-network-adequacy/> (Accessed May 2, 2019), p.ii
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- 4 NAIC. *Health Benefit Plan Network Access and Adequacy Model Act*. 4th Quarter 2018. <https://www.naic.org/store/free/MDL-074.pdf> (Accessed May 4, 2019), p.74-5; also, Mark A. Hall and Paul B. Ginsburg, “A Better Approach to Regulating Provider Network Adequacy,” *White Paper of the USC-Brookings Schaeffer Initiative for Health Policy* Washington, DC: The Brookings Institution, Sep 2017. <https://www.brookings.edu/research/a-better-approach-to-regulating-provider-network-adequacy/> (Accessed May 2, 2019), p.ii
- 5 The Urban Institute, *Ensuring Compliance with Network Adequacy Standards: Lessons from Four States*, prepared by Jane B. Wishner and Jeremy Marks. Mar 2017. https://www.urban.org/sites/default/files/publication/88946/2001184-ensuring-compliance-with-network-adequacy-standards-lessons-from-four-states_0.pdf (Accessed May 6, 2019), pp.3-4.
- 6 Out of a total 64 counties, 48 tend to be rural; 17 Rural + 31 Counties with Extreme Access Considerations (CEAC) by The Centers for Medicare & Medicaid Services (CMS). Source: CMS, *HSD_2019_Reference_File_2018-08-01*, (2019) <https://www.cms.gov/medicare/medicare-advantage/medicareadvantageapps/index.html> (Accessed May 5, 2019).
- 7 T. Baker, and R. Town, *Health Insurance Exchanges 2.0 Dataset*, (2014) Leonard Davis Institute of Health Economics, Wharton School, University of Pennsylvania, <http://www.rwjf.org/en/library/research/2015/01/network-adequacy-and-travel-standards-dataset.html> (Accessed May 5, 2019)
- 8 Texas is counted as two; one for HMO and the other for PPO.
- 9 Responses to this question, “01.b.i. What is the maximum urban/all travel distance standard, in miles, specified by the state for primary care providers?” in T. Baker, and R. Town, *Health Insurance Exchanges 2.0 Dataset*, (2014) Leonard Davis Institute of Health Economics, Wharton School, University of Pennsylvania, <http://www.rwjf.org/en/library/research/2015/01/network-adequacy-and-travel-standards-dataset.html> (Accessed May 5, 2019)
- 10 The Centers for Medicare & Medicaid Services (CMS), *Medicare Advantage and Section 1876 Cost Plan Network Adequacy Guidance*. Feb 2018. <https://www.cms.gov/Medicare/Medicare-Advantage/MedicareAdvantageApps/Downloads/2018-Network-Adequacy-Guidance.pdf> (Accessed May 5, 2019), p.7
- 11 The Centers for Medicare & Medicaid Services (CMS), *Medicare Advantage and Section 1876 Cost Plan Network Adequacy Guidance*. Feb 2018. <https://www.cms.gov/Medicare/Medicare-Advantage/MedicareAdvantageApps/Downloads/2018-Network-Adequacy-Guidance.pdf> (Accessed May 5, 2019), p.10
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This report was prepared by Idaho Policy Institute at Boise State University
and commissioned by the Idaho Department of Insurance.

The project described was supported by Funding Opportunity Number PR-PRP-18-001
from the U.S. Department of Health & Human Services, Centers for Medicare & Medicaid
Services. The contents provided are solely the responsibility of the authors and do not
necessarily represent the official views of HHS or any of its agencies.

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