



HEALTH PROVIDER NETWORK ADEQUACY **REPORT #2** 2019



BOISE STATE UNIVERSITY
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INTRODUCTION

This report examines the necessary functionality of toolsets to analyze evaluation criteria for network adequacy of commercial health insurance plans in the private market. Following an initial report, the Idaho Department of Insurance (DOI) narrowed the scope of this report to encompass four specific criteria: 1) **provider-to-member ratio**, 2) **provider-to-member ratio by specialization**, 3) **out-of-network to in-network usage ratio** and 4) **travel time/distance**.

The first report in this study identified seven potential toolsets available to DOI to facilitate data collection and analysis of these criteria. These were: 1) ArcGIS, 2) QGIS, 3) Quest Analytics, 4) Optum GeoAccess, 5) Encompass, 5) Access Mod 5, 6) R and 7) External Quality Review Organizations (EQROs).

The scope of this report is limited to descriptions of toolset functionality necessary to collect and analyze data related to provider network evaluations. It is organized into two major sections. In the first section, the criteria selected by DOI are discussed, including a description of measurement and which of the identified toolsets (if any) are capable of facilitating data collection and analysis. In the second section, the focus is on a series of other factors identified by DOI, such as the urban/rural nature of the networks and health plan types. This section describes functionality requirements in order for toolsets to include these additional factors in network adequacy analyses.



SELECTED CRITERIA

PROVIDER-TO-MEMBER RATIO AND PROVIDER-TO-MEMBER RATIO BY SPECIALIZATION

Provider-to-member ratios take one of two forms, depending on whether the ratio establishes a minimum or a maximum. The first option is to calculate the minimum number of providers per member, similar to Medicare Advantage plans. The second option is to establish a maximum number of members per provider. Regardless of the option chosen, these data must be collected directly from insurers.

Toolsets must have the ability to calculate provider-to-member ratios from available data that includes the total number of members within a given network, the total number of providers and the total number of providers within a given specialty. Functionality should include the ability to create new indicators from mathematical formulas that incorporate data from existing indicators. Toolsets should be able to compare this indicator against DOI-defined standards and classify networks accordingly. Toolsets should allow for subsequent network analysis based on these classifications.

Potential Measurement Tools: Annual report, Quest Analytics, Optum GeoAccess, EQROs (if contracted out)

OUT-OF-NETWORK TO IN-NETWORK USAGE RATIO

The out-of-network to in-network usage ratio is a measure of a network's capacity. Higher incidence of members obtaining services from an out-of-network provider is an indicator that either the network does not offer the necessary services or a patient has concerns about providers that are in network. Data must be collected by DOI either through a required annual report from insurance carriers or through the establishment of an all-payers claims database (APCD).

Prospective toolsets must have the ability to import claims data at the insurance carrier or network level. Toolsets must also have the ability to calculate new indicators from claims data, using mathematical formulas or logical expressions. Toolsets should have the ability use this indicator in spatial analysis.

Potential Measurement Tools: Annual report, APCD

TRAVEL TIME/DISTANCE

Travel time/distance is one of the most common criteria used to evaluate health network adequacy. Maximum travel time/distance standards define the acceptable limits of time (in minutes) and distance (in miles) from a member's primary residence to at least one provider.

Potential toolsets must have the ability to calculate travel times and distances within a specific network through analysis of spatial data. Toolsets must have the ability to incorporate spatial data such as ZIP codes, roadways, speed limits and traffic conditions. Travel time and distance should be measured from a starting point (broadly representing a network members’ home) and an end point (representing specific providers within the network). Toolsets must have the ability to estimate relative distribution of the population within a geographic area, either using weighted ZIP codes or analysis of Census-tract data. Toolsets must be able to apply different time and distance standards that are dependent upon the network’s classification in other variables. These time and distance standards within the toolset should be subject to change at DOI’s discretion. Toolset must be able to convert units-of-measurement (i.e., from miles to kilometers or from minutes to hours) according to DOI’s needs.

Potential Measurement Tools: ArcGIS, QGIS, Quest Analytics, Optum GeoAccess, Access Mod 5 (requires existing data prepared for spatial analysis), R and EQROs

TOOLSET CONSIDERATIONS

Based on the criteria selected by DOI, collection of the necessary data to determine network adequacy requires annual reports from carriers as well as access to spatial analysis computer software.

An annual report is necessary to collect data for provider-to-member ratios and out-of-network to in-network usage ratios. Ideally, these data are entered into a database for subsequent use in spatial analysis. Travel time/distance requires at least one spatial program in order to independently calculate conditions within a given network. As noted in the first report of this study, ArcGIS is the industry standard in spatial analysis, although QGIS provides an open-source alternative. Toolsets such as Optum GeoAccess, AccessMod 5 and Quest Analytics provide access to more specialized analysis, but require underlying spatial data. Alternatively, these functions can be contracted out to EQROs to perform the analysis independently and deliver the results.

Most of the identified toolsets possess the functionality necessary to analyze the network

TABLE 1: TOOLSET MEASUREMENT SUITABILITY BY SELECT ADEQUACY CRITERIA

Toolset	Criteria			
	Provider-to-Member Ratio	Provider-to-Member Ratio by Specialization	Out-of-Network to In-Network Usage Ratio	Travel Time/Distance
ArcGIS				X
QGIS				X
Quest Analytics	X	X		X
Optum GeoAccess	X	X		X
Encompass				
AccessMod 5				X
R				X
EQROs	X	X		X
Annual Report	X	X	X	

adequacy criteria. Some variability exists when it comes to direct measurement of the criteria, however, making some toolsets more suitable than others. Table 1 summarizes toolset measurement suitability.

ADDITIONAL IDENTIFIED CONSIDERATIONS

In addition to the selected criteria, DOI has identified the following elements as potential considerations in the analysis of network adequacy. This report considers each and describes necessary functionality with prospective toolsets.

RURAL VS. NON-RURAL CLASSIFICATION

Toolsets must be able to classify provider networks based on population and population density within said networks (i.e., see CMS' categorization of counties into Large Metro, Metro, Micro, Rural and Counties with Extreme Access Considerations). Toolsets should have the ability to make calculations at multiple geographic levels, including county level, ZIP code level and Census-tract level. DOI must retain the ability to adjust thresholds for these classifications within the toolset at a future date, if warranted by population growth.

Additionally, for purposes of analysis, the toolset must be able to apply different adequacy standards depending upon the network's rural/non-rural classification. Toolsets that cannot calculate this information natively would, at minimum, need to allow the information to be imported and incorporated as an additional data element for analytical purposes.

ANALYSIS BY CATEGORICAL DESIGNATION

Toolsets must have the ability to filter analysis of provider networks according to DOI designated classifications, such as specific provider types or specific health plan types. Toolset must have the ability to create new fields of data that consist of categorical designations determined by DOI. These categorical designations should be possible at multiple levels of analysis, most importantly at the network-level. Toolsets should be able to filter network adequacy results by each category, or by a combination of categories and indicators. DOI must have the ability to alter the number and types of categories and indicators, as well as require specific designations for each category.

Toolsets should be able to natively generate new variables as a result of logical expressions and numeric formulas using existing variables. If not, they must allow for the information to be imported for subsequent integration into the tool's network analysis.

NETWORK CLASSIFICATION

Toolsets must have the ability to classify provider networks into DOI-designated categories such as basic, standard or broad. Toolsets must be able to use combinations of existing variables to generate new variables with logical expressions and numeric formulas. The DOI will determine indicators and standards for network classification that are subject to change with DOI's discretion and toolset must be able to incorporate those changes

when they occur. Standards will vary by network category. To ensure classifications stay up to date, calculations will need to be periodically updated at a frequency determined by DOI. Toolsets should also allow for analytical results to be filtered according to these classifications.

Toolset must allow for the integration of this network classification information into the State's Your Health Idaho (YHI) shopping portal. Toolsets should either have an ability to mirror the data on the public facing website, whether as a spatial representation or data card element, or allow for regular exportation of data that can be transferred to a more web-friendly interface (to be determined in consultation with YHI's web manager/designer).

SPECIFIC POPULATIONS

Toolsets must be able to incorporate demographic data into network adequacy analysis. These include, but are not limited to, tribal members, non-English speakers or those with disabilities. Toolsets should be able to import demographic data of geographic areas, such as cities, counties, ZIP codes or Census-tracts, and intersect this data with provider network coverage. Toolsets must also be able to import network specific demographic information, as reported to DOI by insurance carriers. Toolsets should be able to filter results for specific demographic characteristics in combination with other indicators.

CHANGES IN NETWORK

Toolsets should provide a mechanism to verify when an individual record was last checked or updated, as well as allow for identification of out-of-date records that may need to be excluded from future analyses. Toolsets must be able to adjust analytical results to account for providers entering or leaving an existing network. Ability to perform disruption analysis is preferred.

LICENSING COSTS

Toolsets should provide options for DOI to produce customized network reports in-house. Toolsets should integrate open source alternatives, where feasible, to minimize costs.

TOOLSET CONSIDERATIONS

Most of the identified considerations require reporting from insurance carriers and must be entered into a database for any subsequent analysis to occur. Once these data are entered, however, most of the identified toolsets can use them in concert with other evaluative variables. Table 2 summarizes which of the identified toolsets are able to meet each indicator's requirements.

TABLE 2: TOOLSET FUNCTIONALITY SUITABILITY BY CONSIDERATION

Toolset	Consideration					
	Rural vs. Non-Rural	Categorical Designation	Network Classification	Specific Populations	Changes in Network	Licensing Costs
ArcGIS	x	x	x	x	-	
QGIS	x	x	x	x	-	x
Quest Analytics	x	x	x	x	-	
Optum GeoAccess	x	x	x	-	x	
Encompass						x
AccessMod 5	x			x		x
R	-	-	-	-		x

x toolset has functionality
 - potential for added functionality

CONCLUSION

Following the first report, the scope of this study was narrowed to only encompass the following criteria: 1) provider-to-member ratio, 2) provider-to-member ratio by specialization, 3) out-of-network to in-network usage ratio and 4) travel time/distance.

Based on these criteria and additional identified considerations, this study outlined the necessary functionality that toolsets must have in order to meet DOI’s needs to evaluate health provider network adequacy. Measurement of data requires an annual report from carriers to DOI and spatial analysis computer software (such as ArcGIS) is necessary in order to complete analysis of the networks. Use of this software may require additional training for existing DOI employees or the creation of a new network analyst position. Alternatively, these functions could be contracted out to an external organization.

Moving forward, DOI can use the suggestions throughout this report to clearly define what data to collect, choose an appropriate collection mechanism and identify which toolsets have the required functionality. This is the first required step toward a full analysis of network adequacy in Idaho.

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