

Access to Rural Health Care – A Literature Review and New Synthesis

*Prepared by the
RUPRI Health Panel*

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August 2014



Acknowledgements

This report was supported by the Rural Policy Research Institute through a cooperative agreement with the Federal Office of Rural Health Policy, Health Resources and Services Administration, US Department of Health and Human Services, Grant U18RH03719.

Support was also provided by the Leona M. and Harry B. Helmsley Charitable Trust, Grant No. 2012PG-RHC030.

We wish to thank Emily Schlicting (an Office of Rural Health Policy Truman Scholar during initial research) for her contributions to this document. We also thank Susan Nardie for her assistance in editing and formatting the document.

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Abstract

Purpose

In the 2011 paper, *The Rural High Performance Health Care System of the Future*, the RUPRI Health Panel included accessibility in its five principles of a high performance rural health system: affordability, accessibility, community health, high quality care, and patient centeredness (Mueller et al. 2011). To design and develop a high performance rural health system, researchers, policy makers, providers, and the public need to understand clearly the concept of access to health care. This paper reviews important access definitions and frameworks from the literature. The review serves as a concept map to create a unique synthesis of perspectives that may be used by researchers and policy makers to design or clarify access to health care policies.

Recommendation

A synthesis of frameworks that includes four dimensions of access (people, place, provider, payment) serves as a basis for health care policy assessment. Among the four dimensions, access is only as strong as its weakest link. Therefore, an access synthesis must recognize the interconnections and interactions between each dimension. Changes to one affect another—or all three others. The synthesis recognizes that access, in its multiple dimensions, changes over time. Thus, to ensure best outcomes, policy makers should address all four health care access dimensions during policy design, deliberation, and implementation.

Implications

When designing or evaluating health care policy, policy makers should specifically consider each of the four access dimensions: people, place, provider, and payment. How does the policy affect each of these dimensions, and how does the policy change the dynamic between the dimensions? As the current health care delivery system begins to respond to increasing demands for quality improvement and cost control, access to health care services is at risk. Health services researchers should refocus on understanding health care access and designing access measures that help key stakeholders evaluate rural health care policies.

Introduction

In its 2011 paper, *The Rural High Performance Health Care System of the Future*, the RUPRI Health Panel included accessibility in its five principles of a high performance rural health system: affordability, accessibility, community health, high quality care, and patient centeredness (Mueller et al. 2011). Mueller and MacKinney (2006) specifically suggested that all rural communities should have local access to public health services, emergency medical services, and primary care.

As investments to improve rural health access have become more significant, and as demographic and economic changes reshape settlement patterns across the United States, policy makers have used discrete measures (e.g., health care service utilization or access to a regular source of care) to assess access and identify areas for special policy consideration. When research has shown rural and urban health care service utilization to be similar, and rural and urban populations to be similarly satisfied with access, some have questioned the need for special policies to ensure rural health care access (MedPAC 2012). Others have argued that assessing access by simply measuring care affordability or provider availability is neither adequate nor appropriate to understand health care access (Khan and Bhardwaj 1994). In the context of the RUPRI Health Panel's vision of a high performance rural health care system of the future, it is essential to understand more clearly the concept of access and, most importantly, to understand how to assess rural health system performance and policy proposals regarding access to health care services. This paper will describe why access to health care services is important to the national experience and will explore the rich academic literature regarding access to health care services. The paper will then propose a new synthesis of access characteristics suitable for ensuring that new policies designed to improve access consider the complex concept of access in its entirety. Lastly, the paper will outline how current and future health care system changes will influence societal consideration of access.

Access Importance

Americans ask, "Will I be able to get the care I need if I become seriously ill?" (Institute of Medicine [IOM] 1993, 31) Questions regarding health care affordability and health care provider availability often weigh heavily. For rural Americans, the issue of access to health care services is particularly acute. By definition, rural places have lower population densities, resulting in rural residents having to travel greater distances to access health care and in health care providers being less proximate to the people they serve. Health care system redesign policies should include accessibility as a fundamental focus, preserving access to health care when populations are served well and improving access when they are not.

Health care is a uniquely vital service in the human experience—at times literally life and death. In *Securing Access to Health Care*, a report on the ethical implications of differences in availability of health services, the introduction states:

The prevention of death and disability, the relief of pain and suffering, the restoration of functioning: these are the aims of health care. Beyond its tangible benefits, health care touches on countless important and in some ways mysterious aspects of personal life that invest it with significant value as a thing in itself (President's Commission 1983).

The President's Commission describes health care as a social obligation. Daniels goes further to describe the central moral importance of health care for the purposes of justice. Effective health care services protect an individual's normal functioning, preserve an individual's ability to participate fully in society, and protect a fair share of the opportunities most people would choose. He notes that health care as a right derives from societal obligations to protect equality of opportunity (Daniels 1985).

Health care is often considered a merit good—a commodity that an individual or society should have based on need, rather than on the ability or the willingness to pay (Johnson 2005). When health care is considered a merit good, equitable access to health care without excessive burden becomes an ethical obligation of society (IOM 1993). Thus, health care is both a social good and a human right (Gulliford et al. 2002).

Access to health care services means timely use of personal health services to achieve the best health outcomes. Furthermore, access to health care influences overall physical, social, and mental health status; prevention of disease and disability; detection and treatment of health conditions; quality of life; preventable death; and life expectancy (Healthy People 2020.gov 2012). Barriers to access result in unmet health care needs, delays in receiving appropriate care, inability to get preventive services, and hospitalizations that could have been prevented (Healthy People.gov 2012). More fundamentally, societal progress and individual productivity is dependent on the health of the population. Thus, health care is a fundamental prerequisite to realizing individual potential and equal opportunity for all.

Despite its status as a merit good and a human right, access to health care is inconsistent. In 1981, Vladeck noted, “[There are] thousands of instances daily where people who need medical attention fail to receive it because of economic barriers, transportation difficulties, racial or ethnic discrimination, or unavailable services” (Vladeck 1981, 77). Despite decades of attention through research and public policy, and new opportunities for expanded health insurance coverage via the Patient Protection and Affordable Care Act of 2010 (ACA), the most fundamental question about access in 2013 remains “Will I be able to get the care I need if I become seriously ill?” However, access to preventive services and other services designed to keep people healthy must also be seen as fundamental. Global health care budgeting and regional health care delivery planning (e.g., facility investments and physician recruitment) require a method for determining how best to match the health care delivery system to the population it serves (Connor, Kralewski, and Hillson 1994). Yet access is not an end in itself (IOM 1993). Access to medical care does not guarantee good health. In fact, medical care is unlikely to be the major determinant of healthy outcomes (Gold 1998). Nonetheless, access to health care is critical to ensuring that society enjoys optimal health, productivity, and well-being.

Rural Applicability

When the words *rural* and *access* are used together, the conversation tends to focus on geographic areas characterized by low population densities and long distances to providers. Therefore, it is appropriate that the “dispersed settlement characteristics of most rural areas elevates geographic accessibility to a position of primary importance” (Joseph and Bantock 1982, 85). Rural access to health care providers is not simply a provider-to-population ratio issue however. The increasing demand for costly medical technology requires economies of scale and centralized services. Medical education specialization (in organ systems and/or disease states) over the past century has similarly fostered economies of scale and centralization, driving many health care professionals to practice in urban locations (Joseph and Bantock 1982).

“Where a person lives matters,” that is, where a person lives influences his or her ability to obtain health care (access) and the quality of health care he or she obtains (Radley and Schoen 2012, 3). Although the causations are complex, rural residence is associated with multiple characteristics associated with poor access. Primary care Health Professional Shortage Areas (HPSAs) are areas that have a population-to-full-time-equivalent-primary-care-physician ratio of at least 3,500:1 (Health Resources and Services Administration [HRSA] 2012a). HPSAs are used to determine eligibility for certain programs and grants. Compared to people not residing in a HPSA, those residing in a HPSA are more likely to be uninsured, less likely to have private insurance, more likely to have Medicaid or other public insurance, more likely to be in fair or poor health, and more likely to be ill with any chronic condition (Table 1) (Hoffman, Damico, and Garfield 2011).

Table 1. Comparison of Populations Residing in a HPSA and Not Residing in a HPSA

Population Characteristics	Residing in a HPSA	Not Residing in a HPSA
Percentage uninsured	23.9%	17.3%
Percentage with private insurance	47.2%	65.2%
Percentage with public insurance	28.9%	17.5%
Percentage in fair/poor health	17.7%	13.3%
Percentage ill with any chronic condition	32.6%	29.3%

Source: Hoffman, C., Damico, A., and Garfield, R. 2011. *Research Brief: Insurance Coverage and Access to Care in Primary Care Shortage Areas*. Washington, DC: Henry J. Kaiser Family Foundation.

In contrast to studies showing a correlation between rural residence and lower utilization of health care services, the Medicare Payment Advisory Commission (MedPAC) found equivalent utilization of health care services between rural and urban Medicare beneficiaries. MedPAC asserts that equitable access is not measured in distance to providers, but by the volume of services delivered and beneficiaries’ satisfaction with access to services. MedPAC found that service utilization and patient satisfaction varies by geographic region, but varies little between rural and urban areas within the same region (MedPAC 2012). In addition, Blue Cross Blue

Shield of Tennessee found that among its commercially insured consumers, a patient's proximity to a mammography facility did not predict if she were more likely to be compliant with guidelines for mammography screening (Coulter, Jones, and Carden 2012). However, rural-urban access disparities can be masked when evaluation is done at a very large scale with gross rural-urban indicators (Sibley and Weiner 2011). For example, there is significant variation in areas designated as rural: population density difference between micropolitan areas and frontier areas is substantial. MedPAC notes "service volume for rural patients is maintained in part by patients traveling to urban areas" (MedPAC 2012, 117). However, travel burden is a barrier to access (Khan 1992; New Mexico Health Policy Commission). Access at a distance is not necessarily equivalent to access in one's community. On the other hand, new health care delivery modes (e.g., telehealth) and new service locations (e.g., in one's home) may change our understanding of access. Patient satisfaction with a current level of access does not necessarily mean that the access is adequate. Access assessment should include measures of health care service use and *nonuse* (i.e., that is, health care services desired but not received).

Access Descriptions

Despite a long and rich history examining access to health care services, there remains surprising ambiguity regarding the definition of *access* (Sibley and Weiner 2011). Too often, the academic literature and public policies inadequately describe or define access with reference to health insurance coverage and/or health care provider distance to patients. Limiting the access discussion to dimensions of health care affordability and geographic proximity is readily understandable and relatively simple to measure. It is the easy way out for regulatory agencies charged with ensuring access (Khan and Bhardwaj 1994). Yet accurately conceptualizing access requires a richer perspective. Access can be described with four different approaches: definitions, measures, barriers, and frameworks.

Definitions

Definitions by design are brief and often simple, yet attempt to describe a complex concept. Several definitions of access have been described in the health services literature (Table 2).

Table 2. Access Definitions

Definition
The use of services, not simply the presence of a facility (Donabedian 1972)
The availability of services whenever or wherever the need for such services arose (Freeborn and Greenlick 1973)
The ability to reach, afford, and obtain entrance to services (Parker 1974)
The fit between population/need attributes and provider/supply attributes (Penchansky and Thomas 1981)
The timely use of personal health services to achieve the best possible health outcomes (IOM 1993)
The ability of a population or a segment of the population to obtain health services (Khan and Bhardwarj 1994)
The end result of a process flowing from predisposing characteristics and enabling resources through need to ultimate health outcomes (Andersen 1995)
The provision of the right service, at the right time, in the right place (Rogers, Flowers, and Pencheon 1999)
The availability of an adequate supply of health care services and the individual’s opportunity to obtain health care when it is wanted or needed (Gulliford et al. 2002)
Considered in terms of four key aspects: availability, utilisation, relevance and effectiveness, and equity (Chapman et al. 2002)

Measures

Access measures describe access indirectly. Measures do not define access, but rather evaluate access performance. Yet despite indirect description, access measures have important uses. Measures can benchmark success trends within policy-relevant groups, assess performance of accountable entities (e.g., insurers and providers), and provide consumer information (Gold 1998). Access can be measured with either process measures or outcome measures. Process measures quantify how the system works, while outcome measures quantify results or final products.

Several researchers have used process measures such as “have a regular source of care,” “likelihood of delaying health care,” “doctor visit within the past year,” and “did not fill prescription due to cost” to assess access (Hartley et al. 1994, Schoen and Osborn 2011). The IOM (1993) suggested outcome measures of access such as birth outcomes, vaccine preventable illness, early detection of treatable diseases, reduced effects of chronic disease, prolonged life, and reduced morbidity and pain through timely and appropriate treatment. The County Health Rankings and Roadmaps (2013) uses percentage of those younger than 65 years without health insurance and ratio of population to primary care providers (process measures). McGrail and Humphreys (2009) developed an access to primary care index that used a combination of measures—spatial accessibility, population health needs, and mobility. Examples of process and outcome measures of access are listed in Table 3.

Table 3. Examples of Process and Outcome Measures of Access

Process Access Measures	Outcome Access Measures
Having a regular source of care (Hartley, et al. 1994)	Birth outcomes
Likelihood of delaying health care (Cohen and Bloom 2010)	Vaccine preventable illness rate
Doctor visit within the past year (Schoen and Osborn 2011)	Early detection of treatable diseases
Did not fill prescription due to cost (Reed 2005)	Reduced effects of chronic disease
Percent < 65 years old with health insurance and ratio of population to primary care providers (County Health Rankings and Roadmaps 2013)	Prolonged life and reduced morbidity/pain through timely and appropriate treatment (IOM 1993)
Provider acceptance of insurance plans	Chronic disease complication rates
Ease of contacting a provider	Ambulatory care sensitive condition admissions
Length of time to appointment	Preventable disease rates
Geographic proximity to providers	Mortality rates
Availability of usual source of care	
After-hours care availability	
Usual source of care availability by travel	
Usual source of care availability by telephone	
Travel time to usual source of care	
Had a medical problem, but did not visit a doctor	
Skipped recommended test or follow-up	

Barriers

Barriers to access are an effective, but also indirect, method to describe access. Access barriers are often countered by access facilitators (or mediators). An analogy is instructive. Consider the desire or need to buy groceries. Barriers to buying groceries include inadequate cash to buy groceries, high cost of groceries, long distance to the grocery store, absent transportation options for travel to the grocery store, limited hours of grocery store operation, physical inaccessibility of the grocery store, personal preference for unavailable foods, culturally appropriate foods unavailable in the grocery store, inability to read food labels, lack of knowledge about nutritional food values, and so on. The parallels to accessing health care services are self-evident and just as complex, if not more so.

The IOM (1993) proposed an access conceptualization based on three types of access barriers: structural, financial, and personal (Table 4). Carillo et al. (2011) built on the access barrier concept using cognitive barriers rather than personal and cultural. Access barriers influence use of services, which in turn is influenced by access mediators (IOM 1993). Importantly, the IOM conceptualization highlights outcomes that are truly outcome measures (e.g., patient/provider satisfaction, health status, morbidity), not process measures. Therefore, access barriers and measures are important to patients, consumers, and policy makers. The MedPAC approach of measuring health care service utilization as a proxy for access becomes inadequate when access

is assessed by health care outcomes, not simply process measures. Yet collecting statistically valid and reliable health care outcome data can be challenging. Outcomes may occur infrequently (mortality is a good example) and/or evaluations may require excessively large populations. Furthermore, the causal relationships between an access intervention and a particular outcome may be complex and even unknowable. Despite these limitations, the link between many access barriers and outcome measures is both intuitive and important to the human experience, making access barriers an important consideration during public policy debate.

Table 4. Barriers to Access

Barriers	Definition and Examples
Structural	<p>The number, type, concentration, location, and organizational configuration of providers (often predicated by the health care financing system)</p> <ul style="list-style-type: none"> • Health care plan or provider refuses care • Inadequate supply of providers • Prolonged waiting times
Financial	<p>The cost of care to individuals and families, including the presence and type of health insurance coverage (includes consideration of the underinsured)</p> <ul style="list-style-type: none"> • Uninsured cannot afford care • Underinsured cannot afford co-pay or deductible • Absent coverage for certain conditions
Personal and Cultural	<p>A set of either explicit or implicit rules that determine the behavior of social subjects in relation to their health (IOM 1993)</p> <ul style="list-style-type: none"> • Unable to travel to care • Unable to communicate with providers • Disrespectful provider behavior

Frameworks

Access definitions, measures, and barriers do not tell the whole access story. To honor its complexity, access should be considered within a framework that describes the richness of interaction between multiple access influences and system characteristics. A framework considers mutable factors (those factors changeable by policy) and immutable factors to ensure that well-intended policies do not have a negative impact on the people and places they were designed to help. The following is a brief review of some of the more important access frameworks from the academic literature.

Donabedian (1972) argued that proof of access is the use of services, not the presence of a provider. In addition, adequate access would not only generate use, but also provide equal health potential by social class, geographic location, etc. Features of care delivery likely to impact access include temporal (the match between providers' care delivery schedule and patients' work/play schedules), spatial (the location of facilities to deliver care), and socio-organizational (patients' socioeconomic class, gender, ethnicity, mental health status, etc. that differ from mainstream society). Furthermore, multiple levels of health care financing (from patient out-of-pocket liabilities to physician payment mechanisms) will influence access.

Despite the influence health care financing systems have on access, Donabedian nonetheless states, “One cannot expect the design of the payment mechanism to bring about the fine adjustment between use of service and the ‘health’ payoff that is being sought” (135) Although laudable for its early attention to access, the Donabedian model does not address the issue of nonuse in which people are asked if they delayed or did not receive care due to actual or perceived barriers to access (Ricketts and Goldsmith 2005).

Arguably, the most important and most cited access framework is that of Aday and Andersen (Ricketts and Goldsmith 2005). Aday and Andersen (1974) importantly noted that access is more a political concept than an operational one. Consequently, access has remained at least an implicit goal of many health policies, yet difficult to operationalize. Aday and Andersen described an access framework that begins with health policy objectives. Health policy objectives then lead to characteristics of both the health care system and populations at risk. System/population characteristics then lead to the outcomes of health service utilization and consumer satisfaction. The framework underscores the interplay between characteristics and outcomes. This framework built on the Donabedian (1972) assertion that proof of access is not simply presence of a provider. Uniquely at the time, the Aday and Andersen model emphasized potential access (as opposed to realized access or health care utilization) and actual or realized outcomes. Early adopters of the Aday and Andersen framework designed process access measures such as having a regular source of care, which continue to be used in national surveys (Ricketts and Goldsmith 2005). However, as noted previously, utilization is not necessarily a proxy for desired outcomes. Therefore, Aday and Andersen (1975) later developed outcome measures to assess what they termed “appropriate” utilization (Ricketts and Goldsmith 2005). However, appropriate utilization, and even consumer satisfaction (which requires utilization), is an imperfect measure of access.

Penchansky and Thomas (1981) presented the concept of fit between clients and the system within five elements of access: affordability, accommodation, availability, accessibility, acceptability. Variations in access are presumed to influence patient satisfaction, service utilization, and provider practice patterns. These outcomes are interrelated. However, Penchansky and Thomas focused on patient satisfaction in each of the five access elements as the outcome of interest. Taylor et al. (1995) expanded the concept of fit to describe access as the fit between the interrelated dimensions of resources, need, and demand. This framing was used in proposals to modify federal government HPSA and Medically Underserved Area/Population (MUA/P) designations (Ricketts and Goldsmith 2005). The five elements of access are comprehensive and interrelated, but patient satisfaction alone is an incomplete assessment of access. As in prior frameworks, nonuse was not specifically addressed.

Khan and Bhardwaj (1994) expanded the Aday and Andersen framework to include an intermediate dimension between system/population characteristics and outcomes; that is, barriers to access (countered by facilitators). Barriers can be related to either production of services (e.g., the number, type, and distribution of providers) or consumption of services (e.g., economic, financial, psychosocial factors). Khan and Bhardwaj continued by expanding Aday and Andersen’s (1974, 1975) previous discussion regarding the concepts of potential access

(availability of health care resources) and realized access (the use of health care resources). A potential access measure might be having a usual source of care and a realized access might be mammography utilization rate. Khan and Bhardwaj then parsed both potential and realized access in a 2x2 table into spatial/geographic factors and aspatial/social factors. Two additional dimensions were then added to the framework: opportunities and costs. Khan and Bhardwaj's contribution was the explicit acknowledgement in a framework that barriers and facilitators are a critical dimension to understanding access. Access occurs when facilitators overwhelm barriers. Furthermore, the concept of potential access begins to address the issue of nonuse.

In the 1990s, managed care and competition became a major force in health care delivery. In 1998, Gold realized that the then current models of access were person- and population-based, focusing on financial and geographic barriers to access. New managed care models introduced the opportunity to improve care efficiency, but also introduced the risk of under-treatment and limited access to appropriate care. New care models were integrating health care finance and delivery. Providers were offered unprecedented risk-bearing contracts, and consumers were choosing health plans that determined when, how, and why they were to access care. Fifteen years after Gold's article, the same concerns are valid today as the nation explores new health care delivery financing and delivery alternatives, such as accountable care organizations and value-based purchasing systems. Gold suggested an expanded view of access that considers covered benefits and services, assessment of care appropriateness and effectiveness, and the tensions raised by limited resources. Gold reframed the IOM barriers to access (structural, financial, and personal) as determinants for plan selection. These determinants influence consumer choice of health plan and include, for example, available plan choices and characteristics/reputation (structural); premiums, benefits, cost-sharing (financial); and knowledge/assumptions regarding managed care and requirements (personal). Similarly, consumer satisfaction is assessed by determinants of continuity of enrollment. Determinants of continuity include patient satisfaction and provider satisfaction. Mediators (e.g., provider quality and care timeliness) also influence consumer decisions to continue enrollment. Finally, in Gold's framework, mediators and other continued enrollment factors determine clinical and policy outcomes (e.g., health status and morbidity). Adding the complexities of new health care financing and delivery systems to the IOM conceptualization was a critical update. Yet, Gold's framework is challenged by its complexity. Framework complexity may capture the complicated access determinant interrelations, but also makes application to health policy more challenging.

Ricketts and Goldsmith's (2005) review of the access literature offers an important addition to the access analyses, in their observation that access is not a static experience in which one person requires care, seeks out care, and then receives care (or does not receive care). In reality, people react to, and interact with, the health care system at multiple levels repeatedly over time. People's experiences during health care system interactions, and thus their perceptions of the health care system, change. It is a dynamic relationship. Thus, as Ricketts and Goldsmith astutely comment, "The changes that people undergo as a result of using health services, or seeking to use them, should be an important, if not central, aspect of an access theory" (278). Unlike prior frameworks, Ricketts and Goldsmith address nonuse of health care services specifically. They note that measures of nonuse are poorly understood. The decision to

forgo or delay care may be personal and unique to the individual, and thus may be unrelated to the health care system or cultural context. For example, nonuse may result from a negative experience with the health care delivery system in the past, such as disrespectful provider behavior. As another example, implicit insurance policies, such as the employer who dissuades an employee from seeking care due to anticipated Workers Compensation costs, may obstruct health care services utilization. These factors may not be accounted for when assessing access from a spatial or even cultural perspective. Ricketts and Goldsmith suggest that policy makers primarily consider the dynamic influences on access and pay less attention to static barriers such as provider proximity or insurance coverage. Yet, many static barriers are mutable by public policy. For example, expanded insurance coverage and locally available health care providers likely improve access.

Electronic accessibility to information and providers has the capacity to change dramatically the consideration of access. In 2011, Fortney et al.—as did Penchansky and Thomas in 1981—argued that access should be considered as the fit between an individual and the health care system. However, opportunities for fit have changed in 30 years. Consumers and patients can now access, and interact with, the health care system electronically and remotely. Face-to-face encounters are no longer the exclusive indicator of utilization, and thus access. Fortney et al. list multiple electronic media through which access may occur: “cell phones, smartphones, interactive voice response, text messages, e-mails, clinic-based interactive video, home-based web-cams, mobile smartphone two-way cameras, personal monitoring devices, kiosks, dashboards, personal health records, web-based portals, social networking sites, secure chat rooms, and on-line forums” (S639). In this re-conceptualization of access, digital joins the traditional elements of access that include geographical, temporal, financial, and cultural.

Current Public Policy

Public policies regarding access to health care often drive program funding. For example, health care service payment rates may be increased, or provider educational loans forgiven, in areas defined by lesser access. Thus, appropriately defining access is critically important to policy makers. Most current public policies define access with distance-to-provider measures or provider-to-population ratios. As noted above, a primary medical care HPSA must have a population-to-full-time-equivalent-primary-care-physician ratio of at least 3,500:1 (HRSA 2012a). Critical Access Hospitals (CAHs) must be 35 miles from the nearest hospital (Title 42 Public Health. Subpart F. § 485.610). The Frontier Extended Stay Clinic (FESC) demonstration requires that a FESC be farther than 75 miles from the nearest hospital, or inaccessible by road (MacKinney et al. 2012). The Balanced Budget Act of 1997 mandates that Medicaid covered services must be available within reasonable time frames (Sec. 4705). For Medicaid managed care organizations, access rules require each state overseeing managed care programs to take into account the “geographic location of providers and Medicaid enrollees, considering distance, travel time, [and] the means of transportation ordinarily used by Medicaid recipients” (Balanced Budget Act of 1997). Federal regulations do not specify particular time and distance standards for measuring Medicaid provider access. Thus, federal law defers to state regulation

for access specificity. As one state example, Oregon Medicaid access standards mandate that 90% of rural enrollees must be within 60 miles/60 minutes of a primary care provider, or the community standard, whichever is greater. Urban standards are 30 miles/30 minutes (Oregon Temporary Rule § 414.645). Note that Oregon’s urban and rural access standards differ.

Travel time/distance and provider/population ratio policies are pragmatic; they are easily understood, readily measureable, and relatively defensible. However, as this paper notes, travel time/distances and provider/population ratios do not capture the complexity of access. The MUA designation improves on the provider/population ratio process with an Index of Medical Underservice (IMU) score. “The IMU involves four variables—ratio of primary medical care physicians per 1,000 population, infant mortality rate, percentage of the population with incomes below the poverty level, and percentage of the population age 65 or over. The value of each of these variables for the service area is converted to a weighted value, according to established criteria. The four values are summed to obtain the area’s IMU score” (HRSA 2012b). The MUP designation also uses the IMU, but additionally includes populations with economic barriers (low-income or Medicaid-eligible populations), or cultural and/or linguistic access barriers to primary medical care services (HRSA 2012b). In comparison to other public policies that link access to funding, the MUA/P more adequately addresses the complexity of access to health care.

Policies establish access standards within contracts with health care organization (e.g., health maintenance organizations and accountable care organizations) and health plans. These policies and contracts create expectations for achieving access defined by measures such as proximity to primary care providers, but rely on provider systems and health plans to implement processes (such as payment incentives) to meet those standards.

Thus, current public policies tend to define access via time- or distance-to-provider measures and provider-to-population ratios within a previously defined jurisdiction. These limitations are understandable; the aforementioned metrics are tangible and relatively easy to measure, and therefore lend themselves to straightforward program implementation and adjudication. Yet, current policies are also problematic. Time or distance to provider mandates are often arbitrary and “policies tied to existing political jurisdictions (e.g., counties) have little or nothing to do with geographic access” (Ricketts, T. C., personal communication, 2013).

Access Synthesis for Policy Analysis

The meaning of “access” in public policy has evolved to reflect changes in health care delivery (including capabilities of different health care professionals, such as physician assistants and nurse practitioners), population characteristics (demographics and dispersion), and technology (such as telehealth). As previously discussed, the academic literature describes different approaches to design access frameworks and different measures to assess access outcomes. These frameworks and measures can serve as the basis of a new synthesis of access perspectives. Donabedian (1972) declared that access is use of services, not presence of providers. Aday and Andersen (1974, 1975) described characteristics of both the health care system and populations at risk that are likely to influence access. Penchansky and Thomas (1981) offered the concept of fit between clients and the health care system. The IOM (1993) discussed barriers to access and health outcomes as critical access indicators. Gold (1998) updated the IOM access conceptualization with consideration of new health care financing and delivery integrations. Ricketts and Goldsmith (2005) highlighted that access is a dynamic relationship between people and the health care system that changes over time. Most recently, Fortney et al. (2011) added electronic connectivity as a new access dimension that may eventually diminish the importance of geographic proximity between people and providers.

To be effective for policy and practice, access should be considered as a synthesis of perspectives. An access synthesis should be practical for measuring outcomes, tracking change, developing policy, assessing equity, and holding stakeholders accountable. An access synthesis should assess policy choices, including areas or providers eligible for special payments, investments designed to enhance access, and payments that encourage access innovations. An access synthesis should help policy makers and key stakeholders consider access as a complex, interrelated, and dynamic process with certain desirable and/or advantageous outcomes. The study of access also must be actionable, and there exists a tension. Framework complexity may lead to misunderstanding or misuse, while framework simplicity may not capture the rich interconnections of access determinants. Both public and private policies have the potential to improve desirable access outcomes. However, new policies may also expend resources unnecessarily or result in unintended consequences. Therefore, in the interest of inclusiveness and simplicity, rural health care policy should consider access within a synthesis of four dimensions: people, place, providers, and payment.

People

Characteristics of a population at risk for inadequate or inappropriate health care include age, gender, family size, education, occupation, and culture (Fiedler 1981). Personal, cultural, and belief systems are crucial characteristics in an increasingly diverse rural population. Person or population characteristics can represent important barriers to access, especially if provider characteristics differ from patient characteristics, such as cultural or ethnic variances. Yet, the characteristics of rural people and the communities in which they live may not necessarily be a barrier to access. For example, community social capital enables better access to care (Hendryx 2002).

Place

Traditionally, spatial barriers to access involve travel burden experienced by people desiring a health care service. Geographic access is an easily understood concept and tends to define the rural condition—sparsely populated areas with few providers. For example, HPSAs are defined by provider-to-population ratios, and any new CAH must be 35 miles from the nearest hospital. Thus, the dimension of place is important to the consideration of access. However, these legislative standards represent an incomplete and unrefined picture. Multiple examples demonstrate rural geographic and population/provider diversity. Distance to provider is a relative term that incompletely captures travel burden—road miles are different from air miles, mountainous terrain is different from flat land, winter snowstorms are different from sunny days. Furthermore, travel burden increases, and access decreases, exponentially with increasing distance. Terms describing this phenomenon include *distance decay* and *gravity weighting* (Khan 1992; New Mexico Health Policy Commission). Thus, access to health care services takes on special significance in the nation’s frontier areas, where very low population densities and great distances to providers are particularly acute challenges, often requiring special policy consideration. While many rural areas experience persistent and significant provider shortages, some rural areas appear flush with health care services (e.g., Marshfield, Wisconsin – population 19,110 and site of Marshfield Clinic, or Danville, Pennsylvania – population 4,699 and site of Geisinger Clinic). Yet, Marshfield Clinic and Geisinger Clinic serve patients who reside well beyond the clinics’ respective community borders, demonstrating the inappropriately arbitrary use of preexisting jurisdictions to define access. Therefore, while spatial considerations of access are important and *prima facie* rural concerns, access discussions should be informed by more than simply distance between patient and provider.

Provider

Traditionally, access discussions refer to the location (addressed above), number, and type of health care professionals and facilities. Rural provider examples include primary care physician, nurse practitioner, physician assistant, CAH, Rural Health Clinic, and others. However, discussions of access to providers should not be limited to certain provider types. Instead, the more appropriate consideration is access to services delivered by providers, allowing innovative health care delivery models not tied to traditional provider types. The provider dimension also includes the provider organizational infrastructure and policies that potentially influence access (e.g., facility hours of operation, provider cultural competence, practice patient-centeredness, etc.). Fortney et al. explicitly adopted a patient-centered view of access—the fit between an individual and the health care system (Fortney et al. 2011, with reference to Penchansky and Thomas 1981). With a definable community and presumably well-established patient relationships, rural providers are well-positioned to address access concerns with a patient-centered approach to health care.

Payment

Increased health insurance coverage due to implementation of the ACA should ameliorate payment barriers for many rural people, but out-of-pocket costs (thus barriers) for health care

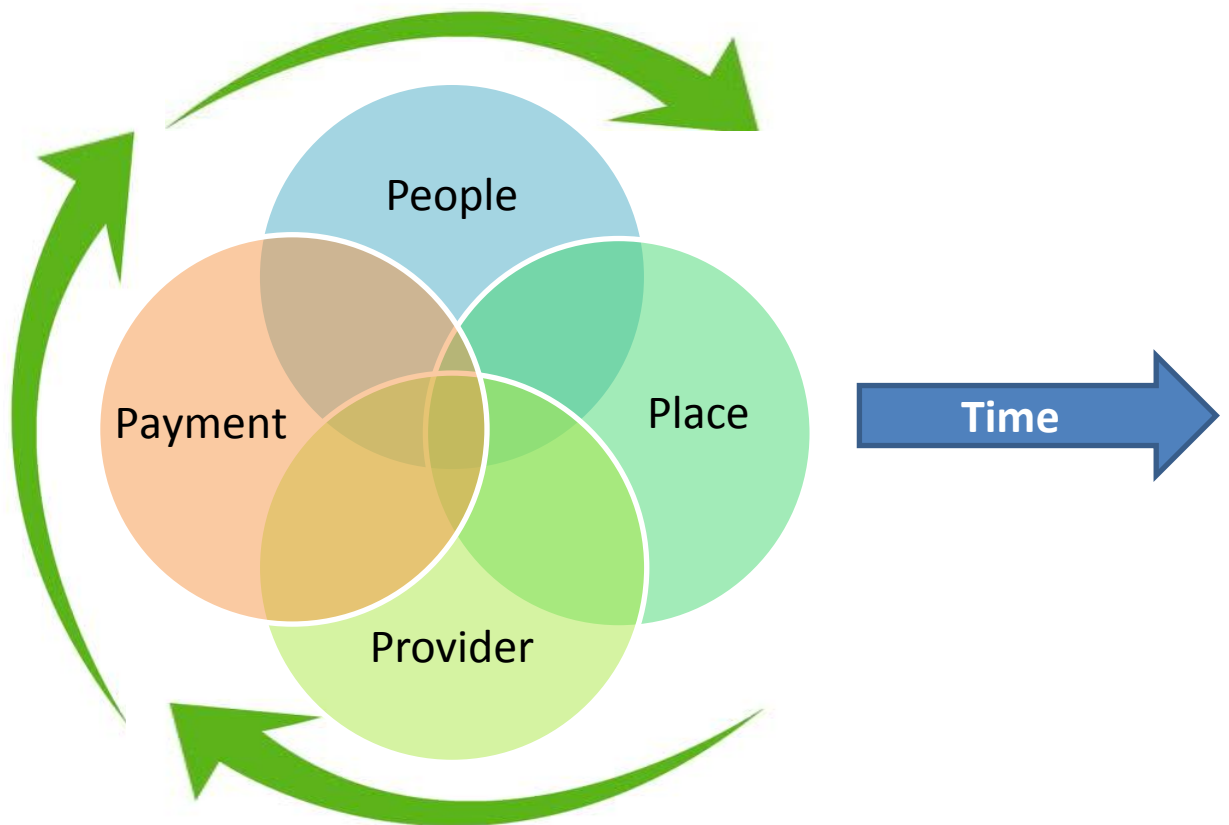
will persist. Insurance policies, such as preauthorization requirements, may be barriers to access. On the other hand, insurance policies, such as absent co-pay or deductible charges for preventive health care, may facilitate access. Although payment considerations are generally attributed to people (e.g., insured, underinsured, or uninsured people), the financial condition of providers can influence access as well. Public payers (Medicare and Medicaid primarily) and commercial insurer policies and regulations induce the type, prevalence, and location of providers, plus the scope of care they deliver. Bonus payment programs, such as Medicare's scarcity area bonus and primary care incentive payment, have supported certain physician practices. However, relatively greater payment for procedures, compared to payment for cognitive services, may dissuade newly graduated providers from pursuing primary care specialties that are most needed in rural areas. Low payment rates from Medicare, Medicaid, or other insurers are a particularly important rural issue due to a disproportionately aged rural population and a disproportionate rural reliance on public health insurance. Furthermore, if rural providers choose not to participate with low-paying insurers, rural patients may have few provider alternatives.

The introduction of the hospital prospective payment system (PPS) demonstrated the interaction between payment and access. Prospective payment tends to reward economies of scale. Absent large patient volumes, many small rural hospitals could not remain profitable under PPS, potentially jeopardizing access to hospital care in those communities. In response, the CAH program and Medicare cost-based reimbursement for CAHs was introduced. Cost-based reimbursement has also supported Rural Health Clinics and Community Health Centers (transition to PPS is underway for the latter with initial rates reflecting current costs). For hospitals that did not meet the federal statutory requirement that CAHs be located at least 35 miles from the nearest acute care hospital, legislation originally allowed state governors to designate Necessary Provider CAHs. Currently, there are 1,329 CAHs representing approximately one-quarter of all acute care hospitals in the nation. Approximately 75% (864) of CAHs are Necessary Provider CAHs (U.S. Department of Health and Human Services 2013). In August 2013, the U.S. Department of Health and Human Services Office of Inspector General (OIG) released a report asserting that CAH certification results in increased spending for both Medicare and beneficiaries. The OIG recommends, "CMS should ensure that the only CAHs to remain certified would be those that serve beneficiaries who would otherwise be unable to *reasonably access* hospital services, and that CMS seek legislative authority to remove Necessary Provider CAHs' permanent exemption from the distance requirement, thus allowing CMS to reassess these CAHs" (U.S. Department of Health and Human Services 2013, 2; *italics added*). Presumably, de-designated CAHs would revert to PPS payments. Historic experience suggests that the PPS provided inadequate payment for many small rural hospitals to survive, thus compromising rural health care access (Congressional Budget Office 1991). Although the OIG notes that Medicare beneficiaries should have reasonable access to hospital services, the OIG does not define "reasonable access." The OIG report exemplifies the critical need for a comprehensive and analytic consideration of access to health care services in any policy discussion.

Summary

Despite the encompassing nature of the people, place, provider, and payment dimensions, the picture of access is still incomplete. Among the four dimensions, access is only as strong as its weakest link. A new access synthesis must recognize the interconnections and interactions between each dimension. Changes to one affect another—or all three others. Furthermore, the synthesis must recognize that access, in its multiple dimensions, changes over time. Thus, to ensure the best outcomes, it is essential that policy makers specifically assess potential policy impact, and unintended policy consequences, in all four health care access dimensions during policy design, deliberation, and implementation. The people, place, provider, and payment synthesis can be considered as a Venn diagram, with all four dimensions constantly turning and creating new relationships both within and between the dimensions. The four dimensions also move forward along a timeline of continual change (Figure 1).

Figure 1. Dimensions of Access as a Dynamic Process



The Future

How policy researchers define access, and how the public perceives access, will change, and it is already doing so. Rural people are changing. The rural U.S. minority population grew 21.3% during the past decade compared with a gain of just 0.95% among the much more numerous non-Hispanic white population. Although rural America remains less diverse than urban America, minority growth now accounts for most rural population increase (Johnson 2012). New concepts of place germane to access should be considered. Most strikingly, electronic interaction with the health care system (facilitated by telehealth software and technologies) will expand, and the rural/urban digital divide will gradually lessen, reducing the importance of geographic place. New sites of care such as home, school, mobile clinics, and the workplace may obviate some travel burdens. In a changing health care workforce, providers may include community health workers, community paramedics, care coordinators, health coaches, and new roles within health care teams. As the ACA is implemented, more Americans will be insured, potentially reducing, but not eliminating, financial barriers to health care. New health care delivery and financing innovations, such as accountable care organizations and value-based purchasing, will continue their remarkable expansion, changing the way that payment influences access. Finally, as the health care system places greater focus on prevention, the services that people value will change how we define access.

Actionable Access Measurement

Access to health care is as fundamental a human concern as health itself. When designing or evaluating health care policy, it is essential that policy makers specifically consider each of the four access dimensions: people, place, provider, and payment. How does the policy affect each of these dimensions, and how does the policy change the dynamic between the dimensions? Due to its complexity, access tends to defy definition through discrete measures. Ricketts and Goldsmith (2005) recommend that policy makers focus on access dynamism rather than static measures. Nonetheless, policy makers need objective, accessible, valid, and reliable measures of access to assess current and intended health care policies. The following examples of access measures are not exhaustive, but demonstrate the importance of considering the four dimensions of access collectively (Table 5). In addition, access measures are interactive; a change in one may influence another. Like access itself, the measure of access should be dynamic and always improving. As the current health care delivery system begins to respond to increasing demands for quality improvement and cost control, access to health care services is at increasing risk. Health services researchers should refocus on understanding health care access and designing access measures that help key stakeholders evaluate rural health care policies.

Table 5. Examples of Access Measures within Four Dimensions

People	Place	Provider	Payment
Health care visit within the last year	Travel time to health care	Primary care professional availability	Health insurance options available
Utilization rate of preventive services	Travel distance to health care	Practice patient-centeredness	Premiums, co-pay, and deductible rates
Culturally sensitive care available	Geographic barriers to health care access	After-hours care available	Payment consideration for low-volume services
Ambulatory care sensitive conditions rate	Transportation to health care options	Care coordinator and coordination availability	Primary versus specialty care payment rates
Skipped recommended test or follow-up	Electronic connectivity to health care options	Age- and gender-sensitive care available	Public program payment rates

Conclusion

Health is a fundamental prerequisite to realizing individual potential and equal opportunity for all. Thus, access to health care is desirable. Access is a complex and dynamic concept that defies simple definition and explanation. This paper reviews the scientific literature that describes access through definitions, measures, barriers, and frameworks. When describing access, a tension exists between access framework complexity and practicality. Due to a dispersed population, relative provider shortages, and a rapidly changing cultural composition, access to care is exceedingly important to the health and well-being of rural people and places. When considering rural access to health care, a geographic default is understandable—dispersed populations and people distant from providers often defines rural. Yet, geographic definitions of access are incomplete; they do not recognize the unique characteristics of rural people and the burden of certain payment policies. The characteristics of rural people are important and in many ways make them vulnerable to access challenges.

To assist policy makers and key stakeholders, this paper proposes a new access synthesis described by four dimensions: people, place, providers, and payment. The dimensions are not static; they are interconnected and changeable over time. For example, ethnic changes in rural America, new locations and technologies for health care delivery, new roles for health providers in teams, and innovative health care financing and delivery systems will dramatically change how researchers describe access. Furthermore and importantly, a person's life experience with the health care system will influence perspectives of access. The four dimensions of access, people, place, providers, and payment, provide a comprehensive perspective and a reminder that complex systems require careful thought about the consequences of health care policy change.

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