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Access as a policy-relevant concept in low- and middle-income countries

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Abstract: Although access to health care is frequently identified as a goal for health care policy, the precise meaning of access to health care often remains unclear. We present a conceptual framework that defines access to health care as the *empowerment* of an individual to use health care and as a multidimensional concept based on the interaction (or degree of fit) between health care systems and individuals, households, and communities. Three dimensions of access are identified: availability, affordability, and acceptability, through which access can be evaluated directly instead of focusing on utilisation of care as a proxy for access. We present the case for the comprehensive evaluation of health care systems as well as the dimensions of access, and the factors underlying each dimension. Such systemic analyses can inform policy-makers about the 'fit' between needs for health care and receipt of care, and provide the basis for developing policies that promote improvements in the empowerment to use care.

Introduction

The need to strengthen health care systems, in terms of improving the capacity to meet the health care needs of populations has become a high priority, particularly, but not exclusively, in low- and middle-income countries. However, we seldom see *systemic* analyses that inform policy-makers about the 'fit' between needs for health care and receipt of care. Instead, research has focussed on particular components of the health care system, such as the effect of a particular financing mechanism on the distribution of service use in the population. As a result, recommendations and policy responses are often limited to methods of service delivery or service financing without recognition being given to

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understanding the incidence, levels and types of use, or, indeed, and perhaps more importantly, non-use of services in terms of how (and whether) the health care system interacts with individuals, households, and communities.[1]

Although access to health care is frequently identified as a goal for health care policy, the precise meaning of access to health care often remains unclear. Definitions of access to care tend to be presented at the conceptual level without much attention being given to the application of the concept and its measurement. Despite substantial research being reported in the literature (Goddard and Smith, 2001; Gulliford *et al.*, 2002; Gulliford and Morgan, 2003; Oliver and Mossialos, 2005; Ricketts and Goldsmith, 2005), consensus on the meaning of access or its measurement remains absent.

In this article, we develop a conceptual framework that defines access as a multidimensional concept based on the interaction between health care systems and individuals. The framework is presented as a basis for understanding the opportunities and constraints that influence health care seeking behaviour of different individuals in different settings in a systemic and integrated way. Broader analyses of how individuals (as part of households and communities) and health care systems (defined by their capacities, structures, and policies) interact are required to effectively inform policy and support aspirations such as the United Nation's Millennium Development Goals[2].

Key concepts and definitions

Need for care is defined as the capacity to benefit from that care (Culyer and Wagstaff, 1993). However, capacity to benefit is usually based on clinical epidemiological evidence of effectiveness resulting from clinical trials in which many of the factors that define the individual are 'controlled' even though these characteristics are potential determinants of capacity to benefit (Birch, 1997). For our purposes, capacity to benefit exists where there is evidence that care provides benefits among *similar individuals* with the particular condition. Need remains linked to effectiveness but effectiveness encompasses improvements in health-related well-being in terms of reducing risks of illness, generating information important to individuals making health care decisions, and enhancing peace and comfort associated with conditions for which no treatment exists.

1 We often refer jointly to individuals, households, and communities as many of the decisions and actions of individuals are influenced by their household circumstances and given the importance of recognizing that individuals and households are embedded within communities. Where we refer to individuals, this is simply for brevity and should be seen as incorporating the associated notions of households and communities.

2 A set of eight social development goals that include specific health goals of reducing child mortality, improving maternal health and combating HIV/AIDs, malaria, and other diseases by 2015 (see www.un.org/milleniumgoals)

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The economic problem of scarce resources means that no health care system can provide sufficient services to meet all needs for care. Hence, even in the most financially prosperous societies, choices must be made between serving the needs of a wider population for a restricted range of services (e.g., primary care to all) or serving the needs of a more restricted population for a wider range of services (e.g., comprehensive care for some groups).

However, meeting needs under either option requires more than meeting the cost of services for these groups. Policy aimed at increasing *access to care* cannot be evaluated by the effect on the level of service use. Instead, access to health care represents the *empowerment* of an individual to use health care and reflects an individual's capacity to benefit from services given the individual's circumstances and experiences in relation to the health care system. In this way, policies concerned with access to care imply an obligation on decision-makers to not just make services available, but to actively empower individuals to use those services when needed. This requires a participatory process involving the exchange of information between health system decision-makers at various levels on the one hand and community members on the other.

Differences in access (i.e. empowerment) between individuals may cause differences in the use of health care services. However, differences in use may occur even with equal access to services where individuals make different choices in relation to exercising their empowerment to use the service. Each culture has unique attitudes towards disease and health care. These attitudes relate to the fundamental beliefs in different healing systems and types of services. For example, particular cultural or religious beliefs may influence an individual's use of blood transfusions or birth control services, independent of the level of empowerment. This contrasts with an individual who may not use such services because they are unaware of the effectiveness of the service, or the service is not available in their own community, or they may have previously been subjected to abusive treatment by the service provider, all of which do reflect problems of empowerment.

Donabedian (1973) and Penchansky (1977) identify the compatibility of (or degree of fit between) a health care system and individuals as the core of the access concept. In this way, access is not a passive concept but relates to the communicative *interaction* between individuals and the health care system. It implies that a 'one size fits all' approach is not appropriate for health care policy; an individual's circumstances, including experience with the health care system, provide a context within which access is determined. What constitutes compatibility between one individual and the system (e.g., the availability of female physicians) may represent incompatibility between another individual and the same system.

Access as empowerment arising from interaction between the health care system and individuals differs from concepts of access used in much of the current literature. Some researchers interpret access as purely a supply concept relating

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to the *availability* of services (or spatial accessibility) (e.g., Guagliardo, 2004; Perry and Gesler, 2000; Rosero-Bixby, 2004). Under this approach, access is simply a matter of location measured by provider–population ratios. However, simply locating a provider in a community does not ensure that individuals with needs are empowered to receive care.

Other researchers interpret access as a demand concept relating to the affordability of, or ability to pay for services (e.g., Falkingham, 2004; Jütting, 2001). Supplementing incomes of those needing care improves affordability to those in need and may increase the demand for the services. However, affordability has generally been considered in terms of whether those with needs for services have a means of paying the provider the cost of the service and hence concerned with insurance coverage, eligibility criteria for publicly funded programmes or other matters related to the cost of care at the point of delivery. But affordability is not sufficient to empower individuals with needs to use services. Birch and Anderson (2005) note that prevailing reimbursement levels for dental care under public programmes are often too low to attract dentists to offer care under these programmes where there is a parallel private market for dental care supported by private insurance plans with substantially higher fee levels. Where providers are prevented from 'extra-billing', or topping up payments by charging additional amounts to patients, services remain inaccessible, despite the general availability of providers and the affordability of services under public programmes.

A third approach adopts service use as the concept of access, either in absolute terms, i.e. 'who uses services?' (Wang and Luo, 2005), or in relative terms, i.e. 'does use differ between groups with different needs and do needs differ between groups with the same use?'. Andersen (1995) considers different types of access to care, ranging from *potential* access to *efficient* access building on his earlier research on behavioural models of service use. Each type of access is considered in terms of its association with use. This might be explained by Andersen's previous work being focussed on understanding variations in use, both between individuals and over time, in which one group of determinants of use was presented as 'access'. However, Andersen's framework does accommodate many other factors (broadly defined as enabling, predisposing, and system factors) that can explain variations in use where 'access' is the same.

Andersen's work on understanding variations in use has been associated with a considerable body of research in which the quantity or type of service used is adopted as the indicator of access (e.g., Aday, 1975; Benzeval and Judge, 1996; Finkelstein, 2001; Puffer, 1986; Taylor *et al.*, 1975; Vilhjalmsson, 2005; Waters, 2000). But interpreting access as use implies that an individual who did not use services, or used services differently from others with the same needs, had in some way different access to care. But this would only be the case if all other aspects of the interaction of supply-side and demand-side considerations, including individuals' fundamental beliefs,

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values, and attitudes towards illness and health care were the same for the individuals.

A fourth approach has been to interpret access as the full cost, or shadow price, of using a service, including the cost of travelling to and from the provider, waiting for service and additional costs associated with using care (e.g., paying for dependents to be cared for while receiving health care) in addition to any price at the point of delivery. Goddard and Smith (2001) go further to include quality and information as important supply-side factors, contributing to the costs of care in addition to availability and user price. Although this focuses attention exclusively on supply-side considerations, these are expressed in an inclusive and individualized way (e.g., full cost to the patient as opposed to simply provider's charges) (Katz and Hofer, 1994; Mooney *et al.*, 1991). However, Le Grand (1991) notes that the implications of the shadow price of services will depend on the context in which the costs are experienced. Costs of using services need to be interpreted in terms of the opportunity costs, or the opportunities forgone by using services. In this way, Le Grand introduces an affordability element, albeit in its broadest sense of the opportunity sets that individuals operate within (strictly a demand-side influence on behaviour), alongside the supply-side influence of cost or shadow price. Both supply-side and demand-side influences within the opportunity cost concept are 'individualized'. Moreover, the opportunity cost framework has the capacity to incorporate other elements of 'access' not generally considered in the conceptualization literature. For example, ensuring that services are available and affordable would not be sufficient to ensure access to care if service providers were predominantly male in countries where at least part of the population believed it inappropriate for women to be examined by male physicians. Using the service would impose a significant opportunity cost on the woman in terms of self-esteem, personal standing, and community acceptability, beyond the elements of opportunity cost associated with the shadow price of care and the woman's capacity to incur the shadow price. Le Grand's notion of opportunity cost as the meaning of access has been adopted by others (e.g., Birch and Abelson, 1993; Grytten *et al.*, 1995). However, difficulties in applying the concept of opportunity cost in empirical studies has led some authors to fall back on using simple, supply-side measures (e.g., physician-population ratios, Grytten *et al.*, 1995).

Our definition of access as empowerment incorporates the interaction of several dimensions. In the following section, we explore the role of each dimension in determining access to care and hence providing potential policy levers for improving access to care in populations.

Dimensions of access

We argue that access is a multi-dimensional concept based on three dimensions: availability (or physical access), affordability (or financial access), and acceptability

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(or cultural access). Although each dimension is distinct and focuses on a set of clearly distinguishable issues, it is the interaction between the dimensions that determines access. For example, the effect of improving the geographic distribution of providers (availability) on individual empowerment is dependent on or influenced by whether the services of the providers are affordable (e.g., the mean travel time to providers might be less but provider fees may have increased) and acceptable (the providers may not be consistent with the cultural expectations of the population). After describing each dimension in some detail, the inter-relationship of these dimensions is discussed further.

Availability

This is concerned with whether the appropriate health care providers or services are supplied in the right place and at the right time to meet the prevailing needs of the population. It includes issues such as:

- The relationship between the location of health care facilities (system factor) and the location of those who need these services and their transportation opportunities (individual factors) (e.g., are obstetric services located and configured in ways that reflect the variations in need for these services in the population?).
- The ability and willingness of service providers to serve the population (system factor) in accordance with the type and severity of their condition (individual factor) (e.g. home visits for individuals confined to bed but not needing in-patient care).
- The 'degree of fit' between the hours of service of health care facilities, or the use of appointment systems (system factors), and the times that individuals need services to be provided (individual factors) (e.g., working adults may have difficulty attending facilities during normal working hours; some needs require urgent attention with treatment effectiveness being compromised by delay in service provision).
- The relationship between the type, range, quantity, and quality of health care services provided at a facility (system factors) and the nature and extent of the health needs of the individuals being served (individual factors) (e.g., do facilities provide comprehensive care or does comprehensive care require referrals between different facilities in multiple locations?)

The access literature as it relates to availability focuses almost exclusively on 'spatial access', i.e. distance between the service provider and the individual (Brabyn and Skelly, 2002; Guagliardo, 2004; Perry and Gesler, 2000; Rosero-Bixby, 2004; Tanser *et al.*, 2006). While some studies consider issues such as the level of supply of staff or drugs (e.g. (Grytten *et al.*, 1995), the other factors that influence availability are rarely considered. For example, Perera *et al.* (2007) showed that, although the geographic distribution of health care facilities in Sri Lanka was good, there was poor availability of services for those

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with chronic diseases such as diabetes in many of these facilities. Peripheral facilities have not been updated in line with the population's progression to a growing burden of non-communicable diseases, and diagnosis and treatment of chronic diseases remain concentrated in central facilities.

Similarly, the effect of facility hours of service on the ability of individual's to seek care is rarely considered in the research literature, although it may be recognized as a problem among policy makers. In low- and middle-income countries, the limited hours of service at many public sector facilities, particularly at the primary care level, has been found to influence individuals' choice of provider, despite the much higher costs of using the private sector. Hours of service are also an important aspect of availability in high-income countries. For example, recent reforms to primary care in Ontario, Canada have included the use of capitation payments enabling providers to reduce office hours without loss of income. However reducing hours of service restricts the choices of patients for primary care visits and produces a reduction in total hours of service, generating shortages of physician services and problems for patients looking to find a primary care practice willing to accept new patients.

Evaluation of the influence of availability on the individual's empowerment to use services requires that the inter-relationships between the different determinants of availability are recognized. Trade-offs may exist between geographic distance to facilities and the quality of care provided. For example, Tianviwat *et al.* (2008) found that parents of Thai schoolchildren were willing to pay more for primary dental care delivered at the regional hospital clinic than for the same services delivered at a mobile clinic that visited each school, despite the considerable reduction in costs to the parent of travelling to and waiting at the hospital clinic. The difference in willingness to pay was associated with differences in the effectiveness of service between the two settings. An appropriate policy response may be to address issues associated with access to care at the hospital as opposed to investing more funds in satellite or mobile services where they are unable to achieve similar levels of service quality.

Affordability

Affordability is concerned with the 'degree of fit' between the full costs to the individual of using the service and the individual's ability to pay in the context of the household budget and other demands on that budget. The full costs of service use include:

- The price of service at point of delivery which cover a range of items (e.g., formal consultation fees, unofficial or 'under-the-counter' fees, diagnostic tests and medicine charges, pre-admission deposits, ward and theatre fees). The level of public funding, whether through general tax revenue funding of providers or through publicly subsidized health insurance, influences the extent to which individuals can 'afford' to meet the costs of using care.

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- Other direct costs associated with transportation, special diets, child care costs, etc.
- Indirect costs such as lost income or productivity while travelling to and from, and waiting to be seen by, a health care provider.

Ability to pay relates to an individual's ability to secure funds from their household or family and the other demands placed on those potential sources of funds, including:

- The eligibility of individuals for financial support from health care financing mechanisms that subsidize or cover the costs of health care at the time of service use.
- The ability of households or family units to cover the costs of services at the point of delivery, including:

  the amount, timing, and frequency of income flows, and the individual's ability to draw on these income streams;
  the level of cash savings that can be used to cover health care costs;
  the assets owned by the household and whether these assets can be easily and rapidly translated into cash;
  the extent and nature of social networks from which households can mobilize cash (either via gifts or loans);
  the ability to secure formal credit arrangements and the conditions for loans (e.g. repayment period and interest rate charges).

- The ability of individuals to incur indirect costs (e.g. sick leave benefits to protect income while incapacitated for employees and the ability to mobilize substitute labour to protect productivity for the self-employed).

However, affordability goes beyond 'ability to pay' by also requiring consideration of the potential impact on household well-being of using household resources to cover the full cost to the individual of health care use. Two individuals may face the same full costs of care and they both may have the ability to pay those costs, but the consequences for the rest of their lives and that of their families may differ. While the impact of illness and payments for health care on household well-being has been most vividly demonstrated in low- and middle-income countries (Russell, 2001), it is also important in high-income countries, particularly as the rapid introduction of new, and frequently expensive, technologies often remains beyond the coverage provided by publicly funded health care systems or social health insurance schemes.

Affordability also depends on the form of payment required by the health care provider or system. Is payment in cash required upfront? In low-income contexts is payment in kind (e.g. a chicken or some grain) acceptable? Where health insurance exists, is service use dependent on evidence of insurance cover being provided?

Affordability has received some attention in the empirical literature although the focus has been largely restricted to the effect of one element of affordability,

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insurance cover, on the use of health services, as opposed to access to care (Jütting, 2001; Lieu *et al.*, 1993; Waters, 2000). However, there is a growing literature documenting the impact of ill-health and of paying for health care on households, which provides a useful basis for more detailed analyses of affordability (McIntyre *et al.*, 2005; Perera *et al.*, 2007; Russell, 2001, 2004; Whitehead *et al.*, 2001).

Acceptability

Acceptability is concerned with the fit between provider and patient attitudes towards and expectations of each other. Provider attitudes towards patient characteristics (e.g., type of patient, age, gender, 'race' or ethnicity, language) and an individual's attitudes towards provider characteristics (e.g., type of provider, age, gender, 'race' or ethnicity, language) will influence the individual's ability to receive care. Providers may be less 'accommodating' of individuals who they perceive to be partly to 'blame' for their condition (e.g., individuals who smoke, alcoholics, etc.), while some individuals may be less willing to receive care from physicians of a different gender or race. These attitudes influence the nature and outcomes of the interactions between providers and individuals.

Expectations of providers and individuals also influence acceptability of health care services and include:

- Provider expectations that patients respect their professional status and comply with their prescribed treatment.
- Patient expectations that providers treat them respectfully, listen to their symptom descriptions, undertake a thorough examination, explain their illness, and discuss treatment alternatives, etc.
- Patient expectations about an efficient process of using services, from the point of first contact (reception) through referral between providers in ways that minimize the burden on individuals, respect individual privacy, and avoid stigmatization.

Beliefs and perceptions also influence acceptability. For example, self-care or traditional healing may be seen as the most appropriate response to a particular illness, based on beliefs about different healing systems. In addition, perceptions of the effectiveness of alternative health care services and provider competence, which are frequently influenced by past experience, are important.

Acceptability is the dimension of access that is most neglected in the empirical literature (Gilson, 2007). Yet, it is critical to ensuring the individual's empowerment to use services and hence is an important aspect of achieving public health goals that depend on patient compliance. Acceptability problems arise where health care services are organized from the perspective of the system and its providers, i.e. a normative perspective under which individuals 'should' be expected to use services, as opposed to from the perspective of individuals or

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patients, i.e. a positive perspective concerned with the conditions required to empower individuals to use services.

Inter-relationship between dimensions and cross-cutting issues

Interactions between the dimensions of access determine the level of access to care. For example, the *availability* of only male health care providers for the provision of women's health services may pose *acceptability* problems among women for whom the services are intended. Where the *availability* of specific drugs is left to private pharmacies, *affordability* may be a problem. Charging a fee at the point of service may affect both *affordability* and *acceptability* if individuals perceive that health care providers are primarily concerned with income generation with patient well-being remaining a secondary consideration.

In addition, issues such as information and power relations cut across all dimensions. Information and communication facilitates a good 'fit' between the health care system and individuals. For example, availability is likely to be improved where health care planners, managers, and providers have information on the epidemiological profile of the population as well as information on levels of health risk. Similarly, affordability can be improved if individuals are informed about the cost of services, forms of payment, eligibility for payment exemptions, and procedures for claiming exemptions. Acceptability can be improved if providers are aware of cultural beliefs in the local community so that they can adapt services accordingly.

Asymmetry of information and the professional status of health care providers generate power relationships that are distributed unequally between providers and individuals and can dramatically influence each access dimension. For example, *availability* is affected if facility opening hours are planned to meet the preferences of health care providers. *Affordability* may be dependent on whether or not a health care provider agrees to a fee exemption to which an individual is legally entitled. *Acceptability* may be affected by the health care provider's willingness to involve an individual in decision-making around alternative treatment options.

The pervasiveness of the influence of information and power relations on access provides the rationale for adopting 'empowerment' as the definition of access. Access is more than simply the opportunity to use health care services. Effective communication of information on health and appropriate health care responses are required in addition to opportunities to use health care in order to empower individuals with the knowledge to move towards a balance of power between individuals and providers that supports or improves access to services.

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Other views on access dimensions

Penchansky (1977) proposed dimensions of access that included accommodation (incorporating issues such as appointment systems, walk-in facilities, etc.) and accessibility (geographic location) in addition to availability, affordability, and acceptability. His definition of availability was restricted to the volume and type of services in aggregate. In practice, our conceptualization of access combines Penchansky's dimensions of accommodation, accessibility, and availability into a comprehensive definition of availability – the right health services being available in the right place and at the right time. Variations on Penchansky's model have been used by others (Guilliford and Morgan, 2003).

More recently Goddard and Smith (2001) sought 'to formulate an operationally useful concept of access', arguing that access relates to dimensions of availability, quality, costs, and information. They suggest that access 'is a supply side issue and indicates the level of service which the health care system offers the individual'. Although information is seen as a key element of their framework, Goddard and Smith overlook acceptability as an important dimension of access. Moreover, their framework ignores 'demand-side' issues, instead relying exclusively on the supply side to explain access and hence generate solutions to problems of access. No attempt is made to consider how the context of individuals' own circumstances and experiences affect the individuals' ability and willingness to seek care.

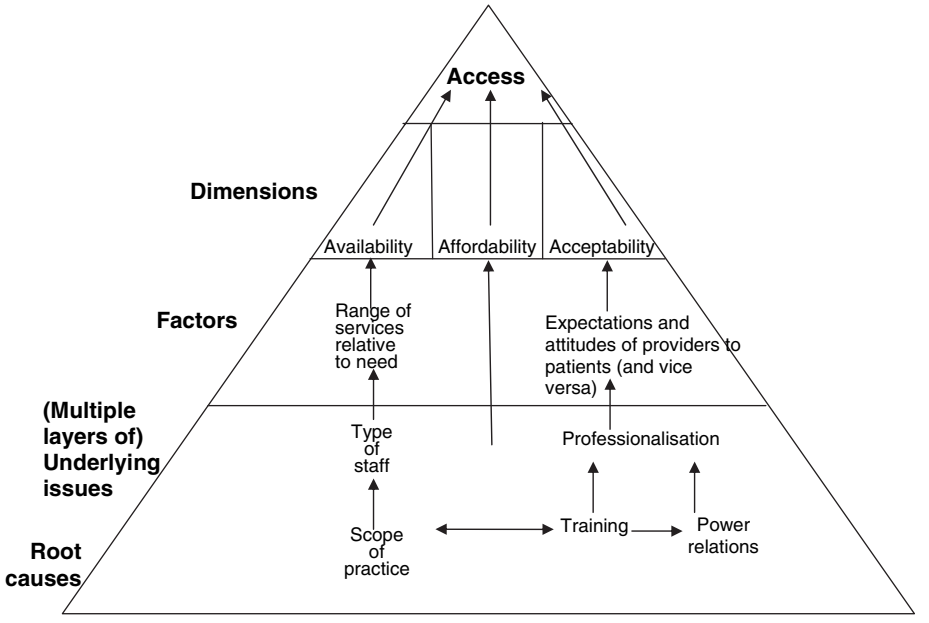
Oliver and Mossialos (2005) support the notion of access relating to the interaction between supply- and demand-side factors, but they define these narrowly as supply relating mainly to geographic location of facilities and demand relating primarily to individuals' ability to pay for health care.

The framework we present represents a further development of Penchansky's initial model. While we do not claim that our interpretation is the only valid perspective, we believe that a clear conceptualization or definition of access is critical to determining the validity or otherwise of potential measures of access and hence planning and evaluating policies aimed at improving access. Defining a limited set of access dimensions facilitates the potentially daunting task of undertaking a comprehensive evaluation of access as they provide entry points for detailed consideration of the factors and issues underlying each dimension, and ultimately to identify the root causes of access deficiencies (see Figure 1).

As illustrated in Figure 1, a key factor influencing availability may be that the range of services provided at a particular facility is inappropriate to meet the needs of the individuals being served. In turn, the range of services may be limited due to the categories of staff working in that facility and their legislated scopes of practice. Changing scope of practice of staff (which may require additional training) may therefore provide an effective means of improving access rather than simply employing additional, yet different categories of, staff.

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Figure 1. Access evaluation framework



Note: Due to space constraints only one example is given for each of availability and acceptability. Clearly many factors can influence each dimension.

There may be some commonality in the underlying issues across the dimensions of access. Current health care provider training may be problematic because (1) it limits the scope of practice of key categories of staff (which leads to availability problems) and (2) it doesn't engender an ethos of communicating with patients about their diagnosis and treatment options, and instead reinforces unequal power relations. Access, or empowerment to use health care services, will only be achievable if all dimensions of access are addressed and both the health care system and individual perspectives are taken into account.

Conclusion

We set out to develop a broad conceptual framework for understanding access to health care, and for developing a basis for the empirical evaluation of access problems. The intention was to present a general framework relevant for different cultural, economic, and geographic settings. However, the framework also has important uses beyond the evaluation of policies on access to care. In particular, decision-makers may need to explore the use of access to care as a policy tool for achieving broader public health goals. Where goals are concerned with universal coverage (such as for some screening or vaccination

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programmes) defined either within entire populations or for more targeted population subgroups, unequal access, in terms of positive discrimination towards some groups may be required. Similarly, policies concerned with promoting 'patient choice' among providers or service locations may be inconsistent with stated goals for access to care. Only by considering access in the broad conceptual framework presented here will we be able to identify these implications and hence consider the trade-offs between concerns with access and concerns with other health policy goals.

For too long, researchers have taken the easy route of evaluating use of health services, due to its ease of measurement, and drawing sometimes ill-founded conclusions on health service access constraints. 'Access' research has focussed only on limited elements of geographic and financial access. The time has come to evaluate access directly, to consider *all* dimensions of access from both the perspective of the individual and the health system, and to explore in detail the factors underlying access constraints. Only then can we develop policies and plans that promote real improvements in access.

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