

DESIGN FOR HEALTH

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Planning Information Sheet: Considering Healthcare Access through Comprehensive Planning and Ordinances



Metropolitan Design Center

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DESIGN FOR HEALTH is a collaboration between the University of Minnesota and Blue Cross and Blue Shield of Minnesota that serves to bridge the gap between the emerging research base on community design and healthy living with the every-day realities of local government planning.

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The following people were involved in the development of the Information Sheet Series:

Series Editor: Dr. Carissa Schively

Contributors: Dr. Ann Forsyth, Dr. Kevin Krizek, Dr. Carissa Schively, Amanda Johnson, Aly Pennucci, Ashley Miller.

Copy Editor: Bonnie Hayskar

Layout Designers: Anna Christiansen, Tom Hilde, Kristen Raab, Jorge Salcedo, Katie Thering, Luke Van Sistine

Website Managers: Aly Pennucci, Joanne Richardson

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Overview

The Design for Health's (DFH) Planning Information Sheets series provides planners with useful information about opportunities to address important health issues through the comprehensive planning process and plan implementation. The series addresses a range of health issues that are relevant to many communities and can be efficiently and effectively integrated into local plans and policies. This information sheet looks at the challenges planners face in locating adequate healthcare facilities, including hospitals and clinics, and in assuring that transportation and population needs are met. Several thresholds to guide the planning process and useful examples of successful healthcare planning will be summarized in this document.

Key Points

- Car ownership, ride sharing, transit access, and distance are correlated to overall use of healthcare facilities (Arcury, Gesler, et al. 2005; Arcury, Preisser, et al. 2005). Planners are advised to consider these factors related to population and transit when locating new health facilities or expanding bus and other transit lines.
- Access to healthcare is also tied to transit accessibility, one of the health topics covered in the DFH materials. For more information, see www.designforhealth.net/techassistance/accessibility.html.
- Rural areas are especially susceptible to shortfalls in healthcare access and numbers of visits to facilities, even though members of this population are more likely to have a doctor they consider to be their usual source of care than in a metropolitan area (Larson and Fleishman 2003).
- Planners can use surveys that break down non-metropolitan areas through techniques, such as the Urban Influence Code, which distinguishes different populations in counties within metropolitan statistical area (MSA) and non-MSA designations, specifying patterns of use by population very accurately.

- U.S. Department of Health and Human Services designates two main types of healthcare areas of concern: Health Professional Shortage Areas (HPSA) and Medically Underserved Areas or Populations (MUA/MUP). These use a ratio of the population of primary care physicians to the geographic service area. (Luo and Wang 2003). This information can be a useful tool to planners determining physician availability within a distance threshold.
- In planning for hospital location, the elderly require special consideration because of access and visit frequency issues that come with old age (Love et al. 1995). Geriatric services should be a priority, especially given the growing proportion of senior citizens. Providing public transit for these individuals is a key component that planners can influence (see Special Populations Web page, <http://www.designforhealth.net/techassistance/specialpopulations.html>, and DFH Accessibility Information Sheet, <http://www.designforhealth.net/techassistance/accessibility.html>).
- Decision support tools (using specialized software and geographic information system (GIS) interfaces) are one way that planners can allocate funds for public facilities, such as hospitals. This is useful to planners that want to perform location allocation analysis to determine the optimal site and capacity for facilities within a geographic region (Ribeiro and Antunes 2002).



Paratransit provides access to healthcare facilities in areas where fixed route bus or rail is too expensive, inefficient or inflexible.

Understanding the Relationship between Healthcare Access and Planning

The relationship between healthcare service provision and health outcomes seems direct, but there are many influencing factors that should be considered by planners. Access to healthcare involves several supply and demand issues including:

- potential healthcare (the total supply of healthcare resources presumably available to residents living in a specified area),
- revealed healthcare (the actual utilization of the healthcare system),
- spatial access (geographic distance),
- aspatial access (demographics/socioeconomic factors),
- regional availability (population/physician ratio), and
- regional accessibility (supply of physician interacting with patient demand) (Luo and Wang 2003).

Available literature often points to a conflict between these factors regarding which influences health access most; such uncertainty prompts a role for geographic analysis and forecasting to become vital to understanding access issues for the urban and rural poor, and young and elderly populations.

This information sheet highlights the following topics related to urban planning responses to healthcare location, including acute care and transportation access to healthcare. In addition to describing key issues relative to these topics, the information sheet highlights actions that might be undertaken by communities in addressing these issues in local plans and plan implementation. A key point to note is that while planners can have an influence on some aspects of physical access to healthcare facilities, this is only part of the total healthcare access issue.

Healthcare Location and Access

Planning for hospital and other facility locations is not a typical activity of planners at the local government level. Planners may be involved, however, in collaborative efforts that can provide data and/or influence decisions about locations. In the Charlotte-Mecklenburg County region of North Carolina, for example, decision makers looked at supply, demand, and travel cost factors in assessing access and the spatial distribution of healthcare facilities in the region (Walsh et al. 1997). In this effort, patient data, Census information and GIS analysis were used to complete the analysis. Planners often have access to this type of data and may be part of efforts to analyze transportation and health facility networks.

Addressing acute care access, one particular healthcare facility access issue, research studies are not clear in terms of what characteristics are correlated with acute care access and utilization; U.S. nationwide trends, however, still show an overall need for better allocation of emergency trauma services. The Trauma Resource Allocation Model for Ambulances and Hospitals (TRAMAH), a collaborative effort between University of Pennsylvania School of Medicine, Johns Hopkins University schools of Public Health and Engineering, for instance, found that injury is the leading cause of death in the U.S. for people under 45 years old, and that many of the 600 people who die or are permanently disabled by these injuries could be helped if a minimum trauma service delivery system was provided nationwide (University of Pennsylvania et al. 2007). This research demonstrates how GIS data can be used by medical experts and public-policy planners to create a system of equitable care.

The test run for the mathematical and geographical TRAMAH system in Maryland revealed that 95 percent of all injured patients could reach a hospital within 30 minutes, and 70 percent of all injured patients could reach a hospital within 15 minutes. Given the improved relocation of trauma centers, however, 500 to 1000 additional people could also be helped. This gap

was mainly due to service overlap in urban areas and under-serviced rural areas—a trend seen across the country (University of Pennsylvania et al. 2007).

In the future, the TRAMAH research will extend to California, Colorado, Florida, Iowa, New Jersey, New York, North Carolina, Oklahoma, Oregon, Pennsylvania, Utah, and Washington, providing valuable information tools to planners with trauma improvement goals. The planning implications for this technology include integration of public health goals with land use through the TRAMAH mathematical allocation models. This system provides a more data driven and regional approach to healthcare facility siting through information sharing between public and private entities within a geographic context.

Hospital planning systems have also come out of the 1990 Trauma Care Systems Planning and Development Act. This federal legislation helped initiate statewide coordination and resulted in many urban areas revamping their emergency care systems (Branas et al. 2000).

Transportation Access to Healthcare

Historical patterns in population, politics and private healthcare competition all influence the location of hospitals, often neglecting transportation infrastructure planning in the decision-making process. At the same time, access to public transportation and personal vehicles has varying influences on accessibility to regular, chronic, and acute care. The number of vehicles in a household was found to be inversely related to the number of acute care and chronic care visits in a North Carolina study, for example; that is, people with fewer cars had more visits, indicative of the importance of socio-economic status in health (Arcury, Gesler, et al. 2005). British research found that the highest proportion of people without cars, in low-income groups and with long-term illness, also lived in areas without bus access to healthcare (Lovett et al. 2002). Another concern is the perceived safety and accessibility of transit facilities, even where they are present in lower-income communities (McCray 2000). While these findings appear

to be contrary to popular belief, they seem to suggest greater material wealth and cars are associated with less healthcare, but more transportation options, while less material wealth is associated with more healthcare issues and less transportation options. This is especially an issue for special populations who may not be able to change their situation, such as children and the elderly. For these groups, providing alternatives is key to proper healthcare.

Some efforts to improve transportation access are occurring at the state level, which could ultimately have implications for local access. The Children’s Health Fund (CHF) Child Health Transportation Initiative, for example, seeks to bridge policy makers’ gaps in knowledge in order to coordinate funds through both private healthcare and city planning departments. The initiative funds pilot programs for improving low-income children’s healthcare access, such as the Mississippi Children’s Health Project, and evaluates the success of tools that aid this process. CHF Electronic Health software, for instance, is being test run along with transportation services to coordinate visit schedule and child pick-up address (Children’s Health Fund 2007).



Northfield Hospital, located just outside the Minneapolis-Saint Paul region, serves surrounding rural counties.

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California also provides a relevant example of a growing healthcare system and the planning solution tools to accommodate a large population. The State provides many services through its regional offices, according to the Facilities Development Division, including new construction plan review, construction compliance and geotechnical reports (for earthquake safety codes), for example, as just some of the facilities planning tools outlined on its Web site (<http://www.oshpd.ca.gov/fdd/index.html>). The Healthcare Workforce Development Division, furthermore, studies counties based on “provider-to-population ratios, poverty levels and public-health indicators for eligibility to receive federal assistance for healthcare,” providing reports on the Medical Service Study Areas (MSSA) through a “Healthcare Atlas” that tracks access to healthcare through GIS maps, including MSSA boundaries and at-a-glance information on primary-care, dental-health and mental health sites throughout the state (State of California 2008). This information is helpful to planners, because it provides a central location where they can locate all application regulations and population information.

The State of Illinois has done extensive work on healthcare accessibility for seniors, including assessing barriers to transportation, understanding the lack in services for rural elderly populations and providing financial support through the departments of Aging and Transportation. Such efforts are important, especially considering the results of a survey of senior service center users in South Florida, which found that fewer than half of the 839 respondents had been seen by a physician in the past six months, and reasons for not getting care in this time period included lack of transportation options for 66 respondents (Rittner and Kirk 1995). These findings raise concerns as most of those surveyed depended on bus transit and were required to travel an average of two hours, both ways, to healthcare centers.

Planning for Healthcare Access

There are many planning solutions to healthcare location issues. Some of these are funding coordination, others are population and service projections, and still others are location allocation based responses to underserved areas. The following are various planning approaches from across the nation that attempt to take on these issues and more, related to hospital and healthcare access.

Healthcare Location and Access

Rowan County, North Carolina, provides an example of how population projections and zoning changes can be used to identify and address increased acute care service needs. The City of Salisbury is a 30,000 person community centered in the county (City of Salisbury 1998). It showed a significant increase in demand at the time of the appeal for an expanded Rowan Regional Medical Center. The following are the Salisbury Planning Board Special Committee’s objectives for the Hospital Services District, a special services district proposed for this facility area:

- to provide for Salisbury’s present and future healthcare needs;
 - to provide regulations for such a dynamic and rapidly evolving institution as healthcare;
 - to provide protection for adjoining well established, single-family neighborhoods;
 - to promote the appearance of the area through good design of buildings, yards, streetscape, etc.; and
 - to promote the health, safety and general welfare of hospital patients, its employees, nearby neighborhoods, motorists, pedestrians, and the public at large.
- (City of Salisbury 1998)

Another issue considered in tandem with facilities expansion is rezoning for more intensive land use. In the Rowan County example, this involved a text amendment to the B-1 district ordinance setting a 75-foot height limit for the hospitals, an increase from the existing limit for office/institutional development of

35-feet. Such expansion, even in the midst of established neighborhoods, is an option for growing municipalities as long as the interests of stakeholders, such as hospital officials and surrounding neighborhoods, are included for input.

Washington State provides a structured and intergovernmental system for trauma care planning that other states might look to for guidance. They have “System Development” procedures, for example, that include regional plans consisting of the following data:

- demographics
 - local system history
 - education and training
 - communications assessment
 - prevention and public-education activities
 - pre-hospital services (including current and needed services by location and levels)
 - acute- and rehabilitative-care facilities (including recommended number and levels of designated facilities)
 - pre-hospital triage criteria and inter-hospital transfer procedures
 - financial planning
 - patient care procedures
- (Washington State Department of Health 2001)



Dependent populations have different transit needs for health care facilities.

This plan outlines the chain of command, starting with the local counties and regions that are supported by statewide technical assistance, with plans being approved by regional council steering committees. Four questions are asked to begin the planning process, including:

1. What are the causes of trauma in the region and how can they be prevented?
 2. Once an injury occurs, is the region’s trauma care system readily and efficiently accessible?
 3. Once activated, is the system efficient and effective (i.e., the right personnel and appropriate equipment are arriving at the scene in a timely manner, treatments are correct, victims are transported to the appropriate level hospital, etc.)?
 4. What information/ data is required to continuously evaluate and improve the system?
- (State of Washington 2001).

Similar systems, even if not established through a statewide plan, could be encouraged to properly allocate trauma and regular healthcare services.

San Francisco gives another perspective on the healthcare planning process, with campaigns to promote greater efficiency in the provision of hospital services. In an effort to cut back on overlapping services and minimize negative impacts from reduced services on local communities, the City drew on the California Health and Safety Code, known as the Beilenson Act, and the San Francisco Community Healthcare Planning Ordinance (Proposition Q). First, under the California Health and Safety Code, county hospitals must provide a public notice outlining the proposed reductions in services for those affected.

The second piece of legislation, the Community Healthcare Planning Ordinance, requires that both public and private facilities provide public notice ninety days prior to the reduced or closed service date and assess the negative health impacts such a change may have on the community (City and County of San Francisco 2003). The law gives the San Francisco Health Commission the authority to determine whether the proposed change will negatively affect the

community, based on feedback gathered during public hearings. The Commission can then explore other approaches to provide the services that would be reduced.

In Massachusetts, regulations on reductions in healthcare facilities are incorporated into state law through a ninety day notice before closure and a requirement to prepare a closure plan that provides the following information related to ensuring sufficient ongoing healthcare service and access:

- information on the utilization of the service prior to proposed closure,
 - information on the location and service capacity of the alternative delivery sites,
 - travel times to alternative service delivery sites,
 - an assessment of transportation needs post discontinuance and a plan for meeting those needs, and
 - a protocol that describes how patients in the hospital's service area will access the services at alternative delivery sites"
- (City and County of San Francisco 2003).

The Miami-Dade Countywide Healthcare Planning Office provides yet another example of an established planning system through an intergovernmental planning organization. Both annual and five-year plans are produced by this office that determine the "delivery of countywide healthcare, including primary, secondary and tertiary care." Some of the planning responsibilities in their Enabling Ordinance (Ord. No. 03-182, § 3, 9-9-03), for instance, include:

- 1.Planning and coordinating the delivery of countywide healthcare services.
- 2.Cooperating and fostering productive relationships among the private and public healthcare providers and healthcare consumers and other affected communities to generate mutually beneficial agreements between and among the providers that enhance the accessibility, efficiency and quality of healthcare delivery and programs affecting all residents of Miami-Dade County.

- 3.Administering and complying with all countywide policies, initiatives and programs for healthcare approved or established by the Board of County Commissioners, including any healthcare plans for the uninsured, uniform health programs, alternative healthcare delivery systems, programs for the County to maximize federal reimbursements or matching funds, public/private healthcare partnerships, systems for utilizing excess hospital bed capacity throughout the County, and standards for the provision of charity care.

- 4.Making a continuous study and review of all existing County institutions, facilities, services, and programs dealing with healthcare or affecting it, for and in consideration of the future needs of Miami-Dade County; and making studies or causing studies to be made of the problems of the uninsured and underinsured, and formulating and recommending plans and programs for the coordination of the activities of all governmental entities and non-governmental agencies dealing with these problems.

- 5.Systematically reducing the number of uninsured children in Miami-Dade County, Florida, through creative and innovative outreach programs aimed at increasing enrollment in programs designed especially for children
(Miami-Dade Countywide Healthcare 2007).

This system outlines an inclusive approach to healthcare facilities planning, involving aspects of demand, supply, efficiency, and special populations, such as children. When developing an approach that urban planners can take in this emerging issue, considering a wide scope of legislation, healthcare systems, and needs assessments is critical in providing for acute and regular healthcare access.

In addition to the broader health facilities planning and impact assessment efforts described above, communities might also express goals and policies related to the location and access of health facilities. Located approximately 65 miles west of Cleveland with a 2006 population

of 26,000, Sandusky, Ohio, elevates healthcare access to be among the ten themes that describe the city’s comprehensive plan vision. The theme states an interest in, “encouraging healthcare facilities to remain and expand in the city” (City of Sandusky 2005).

Another example comes from Seattle, Washington, where the City has incorporated a policy into the Human Development Element of its comprehensive plan that is intended to improve quality and access to healthcare:

HD24: Seek to improve the quality of, and access to, healthcare, including physical and mental health, emergency medical, and addiction services.

- a. Collaborate with community organizations and health providers to advocate for quality healthcare and broader accessibility to services.
- b. Pursue co-location of programs and services, particularly in underserved areas and in urban village areas.

(City of Seattle 2005, 9.6).

Transportation Access to Healthcare

As previously mentioned, access to an automobile or public transportation has varying influences on both likelihood and frequency of use of regular, chronic and acute care facilities. In particular, residents without access to a car, or who are unable to drive, have limited options for getting to and from healthcare facilities. Therefore, providing transit service is essential for these populations. The DFH Planning Information Sheet: Promoting Accessibility with Comprehensive Planning and Ordinances, provides useful examples of policies and tools planners can use to ensure that people can access destinations, such as healthcare facilities, by a variety of transportation modes (e.g., bicycling, walking, automobile, transit). In addition to the examples provided there, we provide a few examples below of communities and regions that are planning specifically for transportation access to healthcare facilities.

TriMet, the public transportation agency in the three county Portland, Oregon, metropolitan region, provides an example of a regional entity partnering with a statewide health insurance program to provide transportation access to healthcare. TriMet created the Medical Transportation Program that ensures transportation services to eligible OHP (Oregon Health Plan) and eligible Medicaid clients who are traveling to covered medical services (TriMet 2008). Depending on the client’s needs, a variety of transportation options are available, including bus, dial-a-ride, taxi or streetcar, and are scheduled based on availability, cost effectiveness and client needs. (For more information, see trimet.org/mtp/mtpguide.htm.)

San Bernardino Associated Governments (SANDAG) partnered with other public agencies and healthcare organizations to conduct a study that examined the challenges of non-emergency medical transportation. The study found that some segments of the population, particularly women, low-income households, MediCal recipients and Spanish speakers, are missing appointments due to transportation issues (SANDAG 2004). The study concludes that more destination-type data should be collected as part of regular transit data collection efforts to better inform transit planning. From this study, a Transit Aid Bus Rider’s Guide was developed to provide information for patients, visitors and employees traveling by bus to two regional medical facilities (see www.sanbag.ca.gov/news/non-emergency_xport/TransitAid.pdf). Transit planners can use these types of partnerships to work with local healthcare organizations to create maps that provide specific information about accessing healthcare facilities and identify areas that lack transit access.

The City of Denver, Colorado, Comprehensive Plan addresses the issue of transportation access to healthcare services in its Human Services element. The following objectives and strategies address access to healthcare and other human services:

Objective 1: Access – Improve access to personal and economic support systems.

Strategy

1-A Improve access to and convenience of public transportation to work and everyday life with special emphasis on:

- A more accommodating public transportation system, particularly at the neighborhood level. This empowers single working parents, the elderly and persons with disabilities to reach essential destinations, such as employment, grocery shopping, healthcare, child care and school.
- Reliable, around-the-clock transportation services for individuals unable to access the standard public transportation system.
- Subsidies for automobile ownership, when necessary, to maintain economic self-sufficiency, and as a last resort in addressing difficult transportation problems (City of Denver 2000).

Final Thoughts

While many of the issues related to health facility access, such as affordability and access to insurance, are beyond the scope of what planners can typically affect, there are select initiatives in which planners can engage, primarily related to healthcare locations and transportation access. The examples of approaches to dealing with these two issues provided here represent just a sample of potential techniques. Many of these examples rely on collaborative partnerships among multiple levels of government, transportation agencies and healthcare providers. Communities can, in addition, act independently through local plans and ordinances to emphasize the importance of providing health facilities and facilitating equitable and efficient access for local residents.

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