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Potential access and revealed access to pain management medications

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Abstract

The area configuration of healthcare resources, such as the number of hospitals per hundred thousand population, has often been used in healthcare planning and policy making to estimate the global access (potential access) of health services to a local population. However, the actual utilization of the "available" healthcare resources (revealed access) is usually much more limited. The objectives of this study were to examine the availability of healthcare resources by measuring the potential access and the revealed access for outpatients who need to access pharmacies to fill prescriptions of Schedule II (CII) opioids for pain management, and to explore the difference between rural and urban residents in these two types of access. About 191,700 prescriptions for CII opioids dispensed in 1997 in the state of Michigan, USA were analyzed. Revealed accessibility was measured by the distance between the paired zip codes of the pharmacy and the patient listed on each prescription. Potential accessibility was measured by the distance from a patient's zip code to that of the nearest community pharmacy that could dispense the opioid prescriptions.

The analyses on revealed access showed that 50% of the CII prescriptions were dispensed by pharmacies located within a 5-mile radius of patients' residences, 75% of prescriptions were dispensed within about a 10-mile radius, and 90% were within 20 miles. If patients were free to access the nearest pharmacy for dispensing (a hypothetical situation under potential access), the median, 75th percentile, and 90th percentile distances could reduce to 2, 3, and 5 miles, respectively. Similar differences between revealed and potential access were observed in both rural and urban areas and for every major opioid drug group. We conclude that policymakers should recognize the discrepancy between potential and revealed accessibility and move beyond only considering area configuration of healthcare resources to evaluating and improving access to care.

Keywords: Opioids; Potential accessibility; Revealed accessibility; Geographic information system; Community pharmacy; USA

Introduction

Indicators such as ratios of number of healthcare providers or facilities to population are often used to evaluate the degree of access to care in a geographic area and to plan the allocation of resources. For example, the widely used Area Resource File compiled by the Bureau of Health Professions, US Department of Health and Human Services, contains thousands of variables measuring the available healthcare resources as per population ratios for each county in the USA (National Center for Health Workforce Analysis, 1993). Similar ratios are also used by the Bureau for designation of health professional shortage areas. A geographic area

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can be considered as having a shortage of primary medical care professionals if it has a population-to-physician ratio of more than 3500:1. These indicators of potential access are commonly used to explore the consequences of changing or changed spatial configuration of healthcare resources to a local population.

The potential access, however, could overestimate the actual availability of healthcare service to the population. Joseph and Phillips (1984) distinguished potential access from revealed access in examining geographic access to healthcare. While potential access estimates the aggregate supply of healthcare resources, revealed access measures the actual utilization of the resources by the population residing in the area. Potential accessibility implies a hypothetical, and often unattainable, scenario of "spatial optimality" in which patients are free to use any of the resources available in an area. Although intuitively there could be a significant gap between potential accessibility and revealed accessibility, until now there has been no empirical study to document the magnitude of the gap. In this study, we proposed a method to estimate the gap between the two indicators of accessibility by examining the access to pharmacies by patients in need of Schedule II (CII) opioids for pain management.

According to the classification system established by the US Controlled Substances Act of 1970, most opioid drugs (e.g., morphine, meperidine, fentanyl, oxycodone) with currently accepted medical uses but also with the greatest potential for abuse and diversion are designated as Schedule II controlled substances. These medications are the mainstay of treatment for moderate-to-severe pain, including but not limited to cancer-related pain. Although opioid medications are effective in controlling pain for most cancer patients, they are often underused for this indication (Agency for Health Care Policy and Research, 1994; Hill, 1993; Schug, Zech, & Dorr, 1990). Other than the misconceptions (associated with drug abuse, addiction, and criminal activity) held by patients and some healthcare givers about the use of opioids (Agency for Health Care Policy and Research, 1994), previous studies suggested that insufficient stocking of the medications by community pharmacies might also have contributed to the underuse (Kanner & Portenoy, 1986; Morrison, Wallenstein, Natale, Senzel, & Huang, 2000).

Because CII opioids are not universally available in community pharmacies, patients may have to visit or contact several pharmacies before they locate one that can dispense their prescriptions. In 2002, the Pain and Symptom Management Advisory Committee (2002) for the state of Michigan reported that CII controlled substances were not stocked in all community pharmacies, and even if usually stocked, many pharmacies lack sufficient inventory to meet patient needs. The committee noted that medication obtainment was necessary for proper treatment and effective communications among physicians, pharmacists and patients was necessary to assist the pharmacists in identifying community needs. The report stated that pharmacists should assume responsibility for either stocking adequate supplies of CII drugs or directing the patients to pharmacies within reasonable distances where they could obtain the needed medications.

Reasons cited for the reluctance of community pharmacies to stock CII opioid medications have included low demand; fear of theft, robbery, illicit use, and fraud; concern over state and federal regulations on dispensing and disposal of the medications; and the extra paperwork required to order and dispense controlled substances (Kanner & Portenoy, 1986; Krick, Lindley, & Bennett, 1994; Morrison et al., 2000). When a pharmacy cannot provide patients with the medications they need, patients usually have to travel farther (to another pharmacy) or wait longer and come back again to receive their medications. A survey of pharmacists reported that, when the required opioids were not in stock, 23% of the pharmacists could obtain the medications within 1 day, 40% in 2–3 days, and 32% in 4–7 days (Krick et al., 1994). The study also reported that 20% of the pharmacists estimated that patients could get the required opioids by traveling less than 1 mile, 37% responded 2–5 miles, and 18% indicated a driving distance of 5–15 miles might be needed. These findings suggested that, because of the restrictive nature of the medications, accessing CII opioids could be problematic in certain areas and patients may not always be able to receive the medication and consultation from a preferred pharmacy.

The objectives of this study were to estimate, from a geographic perspective, the difference between potential accessibility and revealed accessibility of CII opioid medications. This difference was estimated for rural and urban areas, and by major drug group of CII opioids.

Data sources and methods

Primary data source

A computerized CII prescription dataset obtained from the Michigan Official Prescription Program was used for the study. The dataset includes all CII prescriptions written and dispensed for ambulatory-care patients (non-institutionalized) in Michigan as part of the state prescription drug monitoring program. The program was established in 1989 to regulate the prescribing and dispensing of designated controlled substances in Michigan. At the time of data collection, regulations of the Michigan Official Prescription Program required physicians and other prescribers (e.g., dentists) to use state-issued, serialized prescription forms