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Inequality in America: The Contribution of Health Centers in Reducing and Eliminating Disparities in Access to Care

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Reducing and eliminating health status disparities by providing access to appropriate health care is a goal of the nation’s health care delivery system. This article reviews the literature that demonstrates a relationship between access to appropriate health care and reductions in health status disparities. Using comprehensive site-level data, patient surveys, and medical record reviews, the authors present an evaluation of the ability of health centers to provide such access. Access to a regular and usual source of care alone can mitigate health status disparities. The safety net health center network has reduced racial/ethnic, income, and insurance status disparities in access to primary care and important preventive screening procedures. In addition, the network has reduced low birth weight disparities for African American infants. Evidence suggests that health centers are successful in reducing and eliminating health access disparities by establishing themselves as their patients’ usual and regular source of care. This relationship portends well for reducing and eliminating health status disparities.
Persistent and widening health care access and health status disparities (Center for Disease Control 1999) are particularly disturbing as evidence emerges that links access to a usual and regular source of primary care with improvements in health status, regardless of income (Shi and Starfield 2001). It has been argued that health care access can contribute only marginally to reducing or eliminating these disparities when facing formidable opposition from lack of education, poverty, and poor social environment (Williams 1999; Wilkinson 1997; Kennedy, Kawachi, and Prothrow-Stith 1996). Evidence indicates that access to primary care alone can mitigate health status disparities (Shi and Starfield 2001).

Internationally, there is concordance between the strength of a nation’s primary care delivery system and its health status indicators (Starfield 1998). In studies within the United States, primary care was identified as the most significant medical care variable associated with better health status (Shi 1992; Farmer, Stokes, and Fisher 1991). One study demonstrated that primary care exerted a strong and significant influence on life expectancy and total mortality even after controlling for the adverse impact of income inequality (Shi et al. 1999). This study was replicated for U.S. metropolitan areas (Shi and Starfield 2001) and for several points in time (Shi and Starfield 2001) with similar results.

Other researchers have demonstrated the relationship between the performance of essential primary care functions and improved health status (Rosenblatt et al. 1998; Bunker, Frazier, and Mosteller 1994; Weiner and Starfield 1983). Studies have found that populations in geographic areas with higher family/general physician-to-population ratios had lower rates of avoidable hospitalization for Ambulatory Care Sensitive Conditions (ACSCs; Parchman and Culler 1994), and men appearing at emergency rooms with complications of hypertension were less likely to have a source of primary care than those without complications (Shea et al. 1992). Controlling for demographics and diagnoses, one study found that patients with a primary care physician as their personal physician had lower mortality than those with a specialist as their personal physician (Franks and Fiscella 1998). Finally, a recent study captured the domains of primary care (i.e., continuity, accessibility) and determined that quality primary care attenuates the adverse impact of income inequality on health (Shi and Starfield 2000).

The views expressed in this article are those of the authors and should not be inferred to the department or any of its components. We express our appreciation to Uma Gavarasana, M.D., a third year medical resident at Long Island Jewish Medical Center, New Hyde Park, NY, for her review and editing of this manuscript. This article, submitted to Medical Care Research and Review on July 19, 2000, was revised and accepted for publication on December 15, 2000.
This evidence demonstrates that primary care services have the potential to mitigate the negative effects of income inequality on health status. However, this source of care must be regular and usual, user-friendly, and engender the trust of its patients. Services must be integrated and accessible, and delivered by clinicians who are accountable for addressing a large majority of personal health care needs and who develop and sustain effective provider-patient relationships in the context of family and community (Institute of Medicine 1996).

Poor, uninsured people from racial/ethnic minority groups seek care, if at all, from a variety of providers known as the nation’s safety net. An appreciable percentage of such vulnerable people do seek care at the offices of private physicians. However, core safety net providers (for the most part) are hospital emergency rooms, outpatient departments, and health centers located in communities (Institute of Medicine 2000).

Health centers have a history that dates back to the mid-1960s (Lefkowitz and Todd 1999). Today’s health centers provide comprehensive preventive and primary health care services to people living in federally designated rural and inner-city underserved areas at low or no cost to patients. In addition to conventional community-based primary care and preventive services, health centers generally provide a broad spectrum of assistance and enabling services such as case management, health education, nutrition counseling, transportation, translation, child care, and child parenting classes. Health centers coordinate with other community services and are governed by boards whose membership in the majority are health center patients. This national network of 700 centers serves nearly 10 million poor, uninsured Americans from racial/ethnic minority groups at more than 3,000 sites, including community, migrant, school-based, public housing, and health care for the homeless sites in all 50 states and territories. Approximately half of the health center patients are rural dwellers. Health centers receive more than one third of their revenue from Medicaid reimbursement, with additional smaller percentages from a variety of sources including Medicare, self-pay, and other public and private coverage. Contributing about 26 percent of their annual revenue, the Department of Health and Human Services’ (DHHS) Health Resources and Services Administration’s (HRSA) Bureau of Primary Health Care (BPHC) is the custodian of federal support for health centers. Health centers work to reduce and eliminate access barriers to become their patients’ usual and regular source of care (Dievler and Giovannini 1998).
NEW CONTRIBUTION

This article synthesizes results from the most recent literature in an attempt to establish the link between access to primary care and reductions in health status disparities. It presents the most up-to-date data on the performance and effectiveness of federally funded health centers in providing such access to primary care for vulnerable populations.

DATA COLLECTION METHOD

The BPHC has established a three-stage data collection activity to assess the effectiveness of health centers. At Stage 1, the Uniform Data System (UDS) collects a variety of financial, socioeconomic, demographic, and utilization information for every health center that receives federal support. Second, in 1995 a survey was launched of health center patients who had received care from a health center the previous year using an instrument comparable to the Center for Disease Control and Prevention’s (CDC) National Health Interview Survey (NHIS). By using a similar tool and method, peer (i.e., adjusted for age, race, and socioeconomic status) comparison groups were created from the NHIS data. NHIS survey respondents were included only if they had at least one medical encounter with a health care professional. The health centers survey included patient demographics, insurance coverage, self-perceived health status, access to care, quality of care, patient satisfaction, activities of daily living, receipt of preventive services, and treatment of chronic conditions (for details on methodology, see Regan, Lefkowitz, and Gaston 1999). Finally, intensive studies were conducted of health center medical records and other databases (such as the Health Care Financing Administration’s State Medicaid Research Files) to compare outcomes of health center patients with similar patients who obtained care from other sources.

RESULTS

HEALTH CENTER PATIENTS

An estimated 43 million people (1 in 6 Americans) live in federally designated underserved areas and lack access to a private primary care provider (Lefkowitz and Todd 1999). In 1998, 8.7 million people, one fifth of the 43
million, were served by health centers. Generating more than 35 million encounters, health center patients are more likely to be uninsured, poor, and from racial/ethnic minority groups (BPHC 1998), individuals with significant health care needs who traditionally face substantial barriers to care (Fiscella et al. 2000). The vast majority of health center patients are people from racial/ethnic minority groups (see Table 1). Nearly two thirds are at or below the poverty level, and 20 percent are between 100 percent and 200 percent of poverty (see Table 1). More than 40 percent of health center patients are uninsured (see Table 1). In fact, in two of five health centers, the majority of patients are uninsured (BPHC 1998). The number of uninsured patients in health centers has increased by nearly 60 percent since 1990, from 2.2 million to more than 3.5 million in 1998, representing about 8 percent of the nation’s 44.3 million uninsured (BPHC 1999; U.S. Census Bureau 1999). Caseloads of private physicians in the primary care specialties include 10 percent uninsured, and clinics in hospital outpatient departments include 12 percent uninsured (Lefkowitz and Todd 1999). In addition, about 33 percent of health center patients are Medicaid beneficiaries (BPHC 1998), representing about 9 percent of the nation’s 33 million Medicaid recipients (Lefkowitz and Todd 1999), while nationally Medicaid beneficiaries represent 10 percent of patients that seek care.

About 3.5 million (40 percent) of the health center patients are children, and 1.2 million or about one third are uninsured (BPHC 1998). Nearly 25 percent of the nation’s 3.4 million poor, uninsured children seek and receive care at health centers (Lewis-Idema et al., Health Centers, 1999).

A greater percentage of health center patients in all age groups reported having fair or poor health status than in the U.S. population. While almost half of the health center patients were aged 45 to 74 years and more than half of those over the age of 74 reported having fair or poor health status, one third of the U.S. population ages 45 and older reported having fair or poor health status (BPHC 1995). Among those aged 25 to 44 years, 25 percent of health center patients had some activity limitation compared with 11 percent in the nation; for those aged 45 to 64 years, 48 percent had some activity limitation compared with 23 percent in the nation.

Nearly 2 million patient encounters in health centers are for hypertension, followed by more than 1.5 million for alcohol, drug dependence, or other mental disorder, and 1.4 million for diabetes (BPHC 1998). Overall, 36 percent of adult patients have been diagnosed with hypertension, compared with 27 percent for low-income U.S. adults. Half of middle-aged health center patients are hypertensive, significantly higher than the 34 percent for low-income middle-aged adults in the general population. While it is established that African Americans have the highest rates of hypertension in the
nation, African American health center patients have even higher rates; nearly half have hypertension, compared with 35 percent for low-income, adult African Americans (Mathematica Policy Research 1998b). Also, the prevalence of diabetes is higher among health center patients. This finding holds regardless of racial/ethnic group, income level, age, gender, or even among the obese. Even after controlling for risk factors such as obesity, race/ethnicity, and age, health center patients are significantly more likely to have the disease (Mathematica Policy Research 1998a).

About 7.1 percent of births to health center women are at or below 2,500 grams. This figure is comparable to the nation’s, but health center women are more likely to be teenagers and from racial/ethnic minority groups with higher rates than the national average. African American women who use health centers give birth to low birth weight infants at a rate of 9.9 percent, in contrast to their national rate of 13.0 percent. Compared with national figures, health center rates represent a 50 percent reduction in this disparity.

TABLE 1 Distribution of Health Center Patients by Race/Ethnicity, Income, and Insurance

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race/ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>3,117,129</td>
<td>36</td>
</tr>
<tr>
<td>Hispanic</td>
<td>2,943,955</td>
<td>34</td>
</tr>
<tr>
<td>African American</td>
<td>2,251,259</td>
<td>26</td>
</tr>
<tr>
<td>Asian/other</td>
<td>346,347</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>8,658,690</td>
<td>100</td>
</tr>
<tr>
<td>Income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below poverty</td>
<td>5,714,735</td>
<td>66</td>
</tr>
<tr>
<td>100% to 200% poverty</td>
<td>1,731,738</td>
<td>20</td>
</tr>
<tr>
<td>Below 200% poverty</td>
<td>1,212,217</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>8,658,690</td>
<td>100</td>
</tr>
<tr>
<td>Type of insurance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uninsured</td>
<td>3,550,063</td>
<td>41</td>
</tr>
<tr>
<td>Medicaid</td>
<td>2,857,368</td>
<td>33</td>
</tr>
<tr>
<td>Medicare</td>
<td>606,108</td>
<td>7</td>
</tr>
<tr>
<td>Other/private</td>
<td>1,645,151</td>
<td>19</td>
</tr>
<tr>
<td>Total</td>
<td>8,658,690</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Adapted from the Bureau of Primary Health Care (1998).
Note: Income is defined according to the federal poverty guidelines. Below 200 percent poverty is $33,400 for a family of four in 1999. Unknown were distributed as known.
Rural health center infants have made even greater strides at eliminating this racial/ethnic disparity: African American infants from rural health centers had a low birth weight rate of 7.4 percent, representing a 77 percent reduction in the disparity between African American and all rural infants. Urban health center infants have demonstrated a reduction in racial disparity, but not to the extent as in rural health centers (see Figure 1).

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**ACCESS TO CARE AT HEALTH CENTERS**

As previously noted, poor people from racial/ethnic minority groups face substantial barriers to health care (such as lack of insurance) and subsequently experience greater disparities in health status and health outcomes. Nationally, the majority of uninsured (55 percent) report that they delayed seeking care because of costs; 30 percent did not get medical care that they felt they needed, and 24 percent did not fill prescriptions (Hoffman 1998). A survey of health center patients found that these measures of unmet needs for those without insurance were significantly lower; health center uninsured patients reported rates that were about half the rates of the nation’s uninsured.
While 75 percent of the nation’s uninsured reported having a usual source of care, 99 percent of health center uninsured reported having a usual source of care (Mathematica Policy Research 1999). A study comparing pediatric visits to health centers with such visits to hospital-based primary care clinics and generalist office-based practices revealed that a greater percentage of health center visits were made by known patients returning for a new problem (odds ratios: 1.77 for health centers, 1.0 for offices, and 0.70 for clinics). Hospital-based clinics and generalist office-based practices, on the other hand, saw a greater percentage of known patients for old problems (Forrest and Whelan 2000; Whelan and Forrest 1999). Other researchers have demonstrated that the visit category “known patient for new problem” can be used as a proxy for continuity of care (Starfield 1998).

**PREVENTION/SCREENING**

Health center uninsured adults are more likely to receive counseling on lifestyle issues than uninsured adults who seek care elsewhere. Health center uninsured adults are more likely to be counseled about diet and eating habits (54 percent vs. 43 percent), physical activity (57 percent vs. 48.5 percent), smoking (75.4 percent vs. 63.9 percent), drinking (67.8 percent vs. 52.3 percent), drug use (55.2 percent vs. 38.7 percent), and sexually transmitted diseases (53.7 percent vs. 36.2 percent) than U.S. uninsured adults. However, in most cases the health center rate has not met the Healthy People 2000 goal, except for physical activity and tobacco use (Mathematica Policy Research 1999).

Pap smears, mammograms, and clinical breast examinations can detect disease in its early stages, significantly reducing morbidity and mortality. Even though the long-awaited decline in U.S. breast cancer mortality has arrived, the disparity between African American and white women persists (Chevarley and White 1997). One of the factors contributing to higher mortality for African American women is their higher likelihood of later stage diagnosis. Nationally, mammography rates for low-income women are below 50 percent across racial/ethnic groups and fall below the Healthy People 2000 goal of 60 percent (U.S. DHHS 1997). Yet for the 2.5 million health center women of childbearing age, their rates far exceed those of comparable women in the nation and meet or exceed the Healthy People 2000 goal (see Table 2).

For clinical breast examinations, health center women have rates around 80 percent, far exceeding the national rate for comparable women (62 percent). For up-to-date Pap smears, health center women not only exceed the national
comparable rate (75 percent), but they also exceed the 80 percent Healthy People 2000 goal (see Table 3). In addition, these up-to-date Pap smear rates exceed the goal for each racial/ethnic minority group (Regan, Lefkowitz, and Gaston 1999). Finally, the absence of racial/ethnic disparities in screening persists for health center patients receiving other conventional tests (see Table 3).

Cancer-screening rates for women do not seem to vary significantly by insurance status as they do in the general population (see Table 4). Health center screening examination rates seem to be impartial to income, insurance status, and race/ethnicity (Frick and Regan 2000; Carlson et al. 1999). Although health centers have not yet measured the health status of women diagnosed with breast cancer, their reduction and elimination of disparities in key screening examinations, while serving as a regular source of care for poor, uninsured people from racial/ethnic minority groups, are necessary precursors for future success at eliminating health status disparities.

Another measure of access to appropriate ambulatory care is the rate of hospitalization for potentially avoidable conditions, called ACSCs. Medicaid beneficiaries who seek care at health centers were 22 percent less likely to be hospitalized for such conditions than beneficiaries who obtain care elsewhere—14.7 percent for health centers and 18.9 percent for other Medicaid beneficiaries (Falik et al. 1998). Also, health center patients were 16 percent more likely to have outpatient visits for ACSC-associated conditions. As a result, health centers have demonstrated reductions in Medicaid costs of 30 percent to 34 percent, compared with patients receiving care elsewhere (Center for Health Policy Studies 1994).

### TABLE 2

<table>
<thead>
<tr>
<th>Mammogram</th>
<th>Health Center</th>
<th>NHIS Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hispanic</td>
<td>76</td>
<td>48</td>
</tr>
<tr>
<td>White, non-Hispanic</td>
<td>58</td>
<td>44</td>
</tr>
<tr>
<td>Black, non-Hispanic</td>
<td>61</td>
<td>49</td>
</tr>
<tr>
<td>Other</td>
<td>73</td>
<td>a</td>
</tr>
</tbody>
</table>


a. Data not available.
TABLE 3  Health Center Screening by Race/Ethnicity (in percentages)

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Breast Exam</th>
<th>Mammogram</th>
<th>Pap Smear</th>
<th>Testicular Exam</th>
<th>Cholesterol Screening</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>82</td>
<td>57</td>
<td>82</td>
<td>47</td>
<td>44</td>
</tr>
<tr>
<td>Non-white</td>
<td>79</td>
<td>64</td>
<td>84</td>
<td>48</td>
<td>46</td>
</tr>
</tbody>
</table>

Source: Adapted from Frick and Regan (2000).

TABLE 4  Up-to-Date Cancer Screening among Adult Health Center Women by Insurance Status (in percentages)

<table>
<thead>
<tr>
<th>Insurance</th>
<th>Health Center&lt;sup&gt;a&lt;/sup&gt;</th>
<th>United States&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pap Smear</td>
<td>Mammography</td>
</tr>
<tr>
<td>Medicaid</td>
<td>93.4</td>
<td>65.6</td>
</tr>
<tr>
<td>Uninsured</td>
<td>88.2</td>
<td>55.9</td>
</tr>
<tr>
<td>Private/other insurance</td>
<td>91.6</td>
<td>56.2</td>
</tr>
</tbody>
</table>

Source: Adapted from Regan, Lefkowitz, and Gaston (1999) and Makuc, Freid, and Parsons (1994).
<sup>a</sup> Pap smear within 1 to 3 years. Mammography and breast exams in the past 2 years.
<sup>b</sup> Within the past year.

**QUALITY OF CARE**

Additional evidence of health center ability to provide access to appropriate care can be gleaned from its chronic disease management. Health center practices meet or significantly exceed literature-based standards for treatment of the most common conditions of hypertension, acute otitis media, diabetes, and asthma on over 80 percent of the care elements (Ulmer et al. 2000). Hypertensive health center African American and Hispanic patients report at a rate of 90 percent that their blood pressure is under control, more than three times that of a comparable group of hypertensives in the nation and nearly double the Healthy People 2000 goal of 50 percent (Mathematica Policy Research 1998b). Health center diabetics report that their glycohemoglobin rates are tested on schedule 43 percent of the time. Although this rate falls below the Healthy People 2000 goal of 60 percent, it is more than twice the rate reported in the literature (Mathematica Policy Research 1998a).
Other studies have measured the impact of the components of care delivered by health centers—availability of enabling services, presence of translation services, and access to on-site behavioral and mental health providers. Traditionally, insurance carriers inadequately reimburse for these services. These services are particularly critical for poor, uninsured people from racial/ethnic minority groups to assure their access to care. In a study of pregnant women who sought care at health centers, perinatal enabling services positively influenced timely infant and mother’s postpartum visits. In addition, those health centers with behavioral and mental health services had significantly better rates of early entry into prenatal care (Lewis-Idema et al., Enabling Services, 1999). These results are noteworthy since health center prenatal care patients are twice as likely to be teenagers compared with the U.S. prenatal care population.

DISCUSSION

There are some limitations to this study. Patient interview surveys often have reporting and selection bias and are limited to patient recall and knowledge. Also, individuals may not be a reliable source for technical information regarding their health. However, by designing tools comparable to the NHIS, it is anticipated that these biases would be consistent across comparison groups. In addition, there are limitations in using Medicaid claims data since patient encounters in managed care arrangements are not included. Again, this bias is minimized by comparing Medicaid beneficiaries across several provider categories.

Additional data collection and evaluation activities must press for information about the health status of patients and of all people living in a health center catchment area. A health center sentinel network will be established to identify key health centers that are prepared to collect timely data on the health status of its patients and others living in the community. Obtaining information directly from the medical record will eliminate methodological weaknesses inherent in patient interview studies. Also, medical record information can more precisely measure patient health outcomes. In addition, the second user/visit survey will be launched to collect year 2000 data to compare the results with those presented here for 1995. All data collection activities will attempt to further discern disparities between racial/ethnic subgroups by oversampling those health centers that have appreciable proportions of their patient populations from subgroups within the conventionally used racial/ethnic groups. Health status disparities between racial/ethnic subgroups must not be camouflaged by the current method of aggregating data.
Health centers will use the categories and subcategories currently advanced by the Bureau of the Census for its decenniel census. Reducing the stubborn health care access and health status disparities of poor people from racial/ethnic minority groups and who are uninsured is a challenge to safety net providers (Rosenbaum et al. 2000; Institute of Medicine 2000). The results presented indicate the contribution of health centers in reducing these disparities, particularly the low birth weight disparity for African American infants and the racial/ethnic, income, and insurance status disparities for important preventive screening procedures. Health centers assist patients in obtaining and complying with care by providing interpreter services, cultural competence training, and targeted outreach programs, striving to serve as their patients’ usual and regular source of primary care (Zuvekas, McNamara, and Bernstein 1999). The recorded improvements in health care access are likely to have an impact on health status.

Health centers serve 8.7 million of the approximately 43 million people without access to a private primary care provider, up from about 8.3 million in 1997. This pace is insufficient to meet the needs in a timely manner of the remaining 34 million living in underserved communities without access. As such, the nation needs a multipronged approach to achieve 100 percent access to primary care and narrow and eliminate the gap in health status.

First, it seems reasonable to continue to strengthen the existing health centers’ safety net to assure that health care access and ultimately health status disparities among their patients are continually reduced and eventually eliminated. It also seems reasonable to expand existing networks to reach additional people currently without access. Finally, it remains a challenge to leverage scarce resources within communities of the remaining 34 million underserved to identify needs and develop systems that address those needs. Regardless of strategy or plan, the safety net of providers of care for vulnerable people needs to become their usual and regular source of care if the nation intends to reduce and eliminate health care access and health status disparities.

REFERENCES


