

## Reducing Racial and Ethnic Health Disparities: Estimating the Impact of High Health Center Penetration in Low-income Communities

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## Executive Summary

The health disparities literature suggests that although the lack of health insurance is the most basic barrier to health care, improved access to clinically appropriate care is key, particularly in the case of minority and low-income populations where the health risks are greatest. This study examines the relationship between health center penetration into medically underserved communities and the reduction of state-level health disparities. Health centers were developed with the express aim of serving medically underserved persons. Their doubling represents a significant health priority of the Bush Administration and one that enjoys bipartisan Congressional support.

The results of our analysis showed that greater levels of health center penetration (i.e., proportion of low-income individuals served) were associated with significant and positive reductions in minority health disparities. In the case of black/white health disparities, we found that penetration was significantly associated with a narrowing of the health disparities gap in the case of total death rate and prenatal care. The infant mortality gap also narrowed as penetration increased, although the reduction was not as great. In the case of Hispanic/white disparities, health center penetration was significantly associated with health disparity reductions in the case of the tuberculosis case rate and prenatal care.

While our quantitative analyses found that Medicaid alone has little direct impact on health disparities, we also found that health center penetration appeared to have the least impact reducing health disparities linked to diabetes and cardiovascular death rates. Both of these conditions are associated with older working age adult patients who have a greater need for specialty and inpatient care but are least likely to have Medicaid coverage.

Interviews with health centers confirmed that they make explicit and active efforts to customize their care to low-income and minority patients, both in the form of clinical quality improvement efforts specifically aimed at reducing health disparities and in the provision of patient support and interpreter services. Notable health outcome successes were reported by respondents. However, respondents also identified eroding Medicaid coverage as a significant threat to customization and indeed, basic clinical capacity.

Despite their success, health centers reach only about 12 million of the nation's (disproportionately minority) medically underserved persons, leaving another estimated 52 million without adequate health care access. The gap may increase as the number of uninsured persons grows. The successful and long-term expansion of health centers under President Bush's initiative will depend not only on increased federal health center appropriations but also expanding Medicaid to provide additional low-income persons with comprehensive coverage. It is this combination of clinically customized and supported health care and comprehensive health insurance that may yield the most effective medical care strategy for health disparity reduction.

## Background and Overview

As a major component of the nation's health care safety net, federally funded health centers have, as their principal mission, the provision of comprehensive primary health care to medically underserved communities and populations. Health centers furnish care in accordance with patients' ability to pay (i.e., patients pay nominal fees or nothing at all) and employ a community board governance approach whose aim is to promote community responsiveness to service design and clinical practice.

In 2002, approximately 850 federally-funded health centers served over 11.3 million patients in 4600 service sites. In addition, 97 non-federally funded clinics certified as meeting all federal grant requirements served approximately 900,000 persons that year,<sup>1</sup> bringing the total served to more than 12 million persons. President Bush has called for a doubling of health center capacity across the U.S.

Health center patients fall into population subcategories recognized as facing significant health risks. Data collected annually from all federally funded health centers<sup>2</sup> show that in 2002, two-thirds of all health center patients were members of racial and ethnic minority populations; 86 percent of all persons served were low-income (i.e., family income  $\leq$  200% of the federal poverty level). Approximately 40 percent of all health center patients have no health insurance and approximately one-third speak a primary language other than English. Federal data on patient health status also suggest that on a number of key health measures, uninsured health center patients suffer worse health status than their counterparts served by private physicians, a logical outgrowth of health centers' location and active efforts to target the most medically underserved community residents.<sup>3</sup>

The medical care services furnished by health centers are subject to extensive federal requirements, and the quality of care is carefully monitored in accordance with federal clinical care standards. Health centers also have engaged in minority health disparity reduction efforts carried out under special federal initiatives aimed at improving clinical performance and health outcomes in the case of certain health conditions (such as diabetes, depression, asthma, and cardiovascular conditions) where data show significant disparities based on race, ethnicity and income. Virtually all health centers augment their medical and

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<sup>1</sup> These clinics are known as "look alike" centers and receive "look alike" certification for purposes of the preferred Medicare and Medicaid payment rates to which health centers are entitled. Rosenbaum S and Shin P. *Health Centers as Safety Net Providers: An Overview and Assessment of Medicaid's Role*. (The Henry J. Kaiser Family Foundation: Washington, D.C., 2003).

<sup>2</sup> Federally-funded health center data are recorded in the 2002 Uniform Data System, Health Resources and Services Administration, U.S. Department of Health and Human Services.

<sup>3</sup> Rosenbaum S, Shin P, Markus A, and Darnell J. *Health Centers' Role as Safety Net Providers for Medicaid Patients and the Uninsured*. (The Henry J. Kaiser Family Foundation: Washington, D.C., 2000).

health services with interpreter and translation services, as well as patient support services such as case management and transportation. Many health centers also offer enrollment assistance into federal health insurance programs such as Medicaid and the State Children's Health Insurance Program (SCHIP). Most also offer links to such essential programs as the Special Supplemental Food Program for Women Infants and Children (WIC), emergency assistance, housing support, family preservation, early child development programs such as Head Start,<sup>4</sup> and other critical human services.

Virtually since their inception in 1965, health centers' role in improving community health has been extensively evaluated.<sup>5</sup> Documented successes include improved prenatal care and infant health outcomes,<sup>6</sup> higher immunization rates,<sup>7</sup> a rise in access to primary and preventive health care, and other measures. Health centers have been identified by the Office of Management and Budget as one of the federal government's most successful programs;<sup>8</sup> they have been recognized as a particularly effective means of reducing health disparities, both in the literature and through government reports including a recent General Accounting Office report on reducing health disparities prepared for the Senate Majority Leader.<sup>9</sup>

A factor that may help explain health centers' success is the extent to which, through both federal requirements and community board governance, health centers adapt and customize their services to low-income racial and ethnic minority populations and communities. Indeed, studies that compare health care access and health outcomes among medically underserved populations who use various forms of primary health care tend to show that, compared to other primary care arrangements, health centers achieve more consistent and cost efficient results.<sup>10</sup> Health centers have explicitly adapted and augmented their

<sup>4</sup> Davis SK, Collins KS, and Hall A. *Community Health Centers in a Changing U.S. Health Care System*. (The Commonwealth Fund: New York, New York, May 1999).

<sup>5</sup> Reynolds RA. "Improving Access to Health Care Among the Poor --- the Neighborhood Health Center Experience." *Milbank Memorial Fund Quarterly*, 1976; 54:47-82. Okada LM and Wan TTH. "Impact of Community Health Centers and Medicaid on the Use of Health Services." *Public Health Reports*, 1980; 95:520-534.

<sup>6</sup> Bailey BE, et al. *Experts with Experience: Community and Migrant Health Centers Highlighting a Decade of Service (1990-2000)*. Bureau of Primary Health Care, HRSA, US Department of Health and Human Services. September 2001.

<sup>7</sup> Hawkins DR and Rosenbaum S. "The Challenges Facing Health Centers in a Changing Health Care System," in *The Future U.S. Healthcare System: Who will Care for the Poor and Uninsured?* Stuart Altman, Uwe Reinhardt, and Alexandra Shields, eds., Chicago: Health Administration Press, 1998.

<sup>8</sup> Address by Elizabeth Duke, Administrator, Health Resources and Services Administration, Annual Meeting of the National Association of Community Health Centers, Atlanta, Georgia (August 25, 2003).

<sup>9</sup> General Accounting Office. *Health Care: Approaches to Address Racial and Ethnic Disparities* (GAO-03-862R, Washington, D.C., 2003); Trubeck LG. and Das M. "Achieving Equality: Healthcare Governance in Transition." *American Journal of Law and Medicine*, 2003; 29: 395-422.

<sup>10</sup> Starfield B, Powe NR, Weiner JR, Stuart M, Steinwachs D, Scholle SH, and Gerstenberger A. "Costs vs. Quality in Different Types of Primary Care Settings." *Journal of the American Medical Association*, 1994; 272(24): 1903-8.

primary care practices to meet the needs of their patients, through a range of approaches such as discounted care, linguistically accessible services, and patient supports aimed at eliminating or mitigating at least some of the underlying causes of disparities in health and health care.

These modifications are important. Racial and ethnic health disparities are the product of complex and related individual and societal factors and cannot be predicted by race or socioeconomic factors alone.<sup>11</sup> But the literature suggests that disparities in health care and its outcomes can be attributed in part to differences in language, income, lack of health insurance, the interaction between clinicians and patients, and other factors that are present for some population groups and not others.<sup>12</sup> Individuals who face health care barriers can be expected to make particularly high use of health centers, and health centers' active role in health disparities reduction is a central expectation of the program.<sup>13</sup>

Despite the program's success, health centers are relatively limited in their reach in relation to need. It has been estimated that even though health centers (including the state or locally-funded "look alike" clinics described above) reached over 12 million persons in 2002, another 52 million persons remain medically underserved as a result of poverty, a lack of health insurance or reliance on public health insurance.<sup>14</sup> With the supply of uncompensated care declining and only half of physicians according to one recent study willing to accept all new Medicaid patients,<sup>15</sup> even communities with nominally adequate physician supply may experience significant health care shortages for their underserved residents.<sup>16</sup>

As health centers expand under the President's initiative, we sought to gain greater understanding of the extent of disparities reduction that greater health center penetration into disproportionately minority, low-income communities might achieve. We also wanted to more clearly understand how health centers adapt their services to explicitly address health disparities.

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<sup>11</sup> *Improving the Collection and Use of Racial and Ethnic Data in HHS*. Joint Report of the HHS Data Council Working Group on Racial and Ethnic Data and the Data Work Group of the HHS Initiative to Eliminate Racial and Ethnic Disparities in Health. December, 1999. <http://aspe.os.dhhs.gov/datacncl/racerpt> (Accessed March 2003)

<sup>12</sup> Institute of Medicine (IOM). *Unequal Treatment: Confronting Ethnic and Racial Disparities in Health Care*. (National Academy Press: Washington, D.C., 2003).

<sup>13</sup> Politzer RM, Yoon J, Shi L, Hughes RG, Regan J, and Gaston MH. "Inequality in America: The Contribution of Health Centers in Reducing and Eliminating Disparities in Access to Care." *Medical Care Research and Review*, 2001; 58: 234-248.

<sup>14</sup> Based on CHSRP calculations. Most recent available 1998 HPSA data extrapolated to 2002.

<sup>15</sup> Cunningham PJ. "Mounting Pressures: Physicians Serving Medicaid Patients and the Uninsured, 1997-2001" *Center for Studying Health System Change Tracking Report*. 2002: No. 6.

<sup>16</sup> Kaiser Commission on Medicaid and the Uninsured, Washington, D.C., based on 1998-1999 data reported by the Medicare Payment Advisory Commission.

## Methods

We designed this study to permit a comparison between the magnitude of state-level racial and ethnic disparities for certain key health indicators and the proportion of low-income persons served by health centers for each state.

We first compiled measures of health status available by state and race, as well as state and income level. Data collection was restricted primarily to those data sources for which data already were compiled for all states and the District of Columbia. Our specific focus was on health measures that have been shown in the literature to reveal significant disparities between white and minority populations. We also were interested in measures that have been shown to be ambulatory care sensitive, that is, that are amenable to control through comprehensive primary health care aimed at both preventing the onset of health conditions and treating and managing conditions at early stages. The measures selected for preliminary and final analysis are shown in Box 1. The health status indicators of interest here include some of the measures outlined in Healthy People 2000 and 2010, as well as others of particular interest in relation to the impact of health centers on their patient populations.<sup>17</sup>

### **Box 1. Ambulatory Care Sensitive Health Indicators: Preliminary and Final (\*)**

- **INFANT MORTALITY\***
- **TOTAL DEATH RATE (AGE-ADJUSTED)\***
- **HEART DISEASE DEATH RATE (AGE-ADJUSTED)\***
- **DIABETES RELATED DEATH RATE (AGE-ADJUSTED)\***
- **TUBERCULOSIS CASE RATE\***
- **ADEQUACY OF PRENATAL CARE\***
- **SEXUALLY TRANSMITTED DISEASE CASE RATE**
- **HIV/AIDS HOSPITALIZATIONS**
- **ASTHMA RELATED HOSPITALIZATIONS OR EMERGENCY DEPARTMENT VISITS**
- **DIABETES RELATED HOSPITALIZATIONS OR ED VISITS**

**(\*) DELINEATES FINAL SELECTION FOR USE IN THIS STUDY**

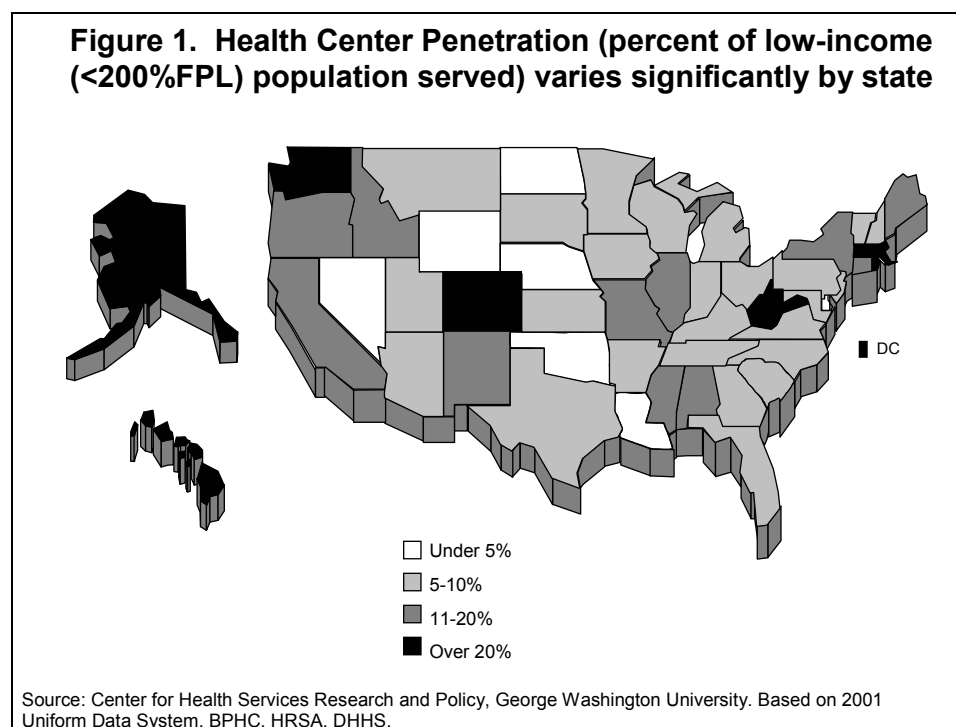
Six point-in-time indicators with sufficient reliable state-level data were selected to permit disparities calculations between white persons and black persons, and white persons and Hispanic persons. Because of limitations in the data, state-level comparisons could not be drawn for other health measures. Furthermore, data limitations prevented comparisons for other racial and ethnic subgroups. Thus, this analysis is limited to black/white and Hispanic/white health disparities. The measures that ultimately were chosen for this analysis were:

<sup>17</sup> *Healthy People 2010* identified the following health disparities: diabetes, immunizations, HIV/AIDS, cardiovascular disease, cancer and perinatal care. See also Freeman MA. "Health Status Indicators for the year 2000." *Healthy People statistical notes*; vol. 1 no 1. (National Center for Health Statistics: Hyattsville, Maryland, 1991).

infant mortality (2000); total death rate (1999), heart disease death rate (1999); diabetes death rate (1999); tuberculosis case rate (2000) and level of prenatal care (2000).<sup>18</sup> Even in the case of several of these final measures, estimates could not be developed for every state as a result of small numbers, making comparisons for all 50 states and the District of Columbia impossible in certain cases.

For each measure, the raw data show that on a state-by-state basis (as well as nationally), racial and ethnic disparities exist for most health measures selected. For example, black infants die at significantly greater rates in all states whose infant death rates by race could be accurately measured. Similarly, the incidence of tuberculosis is higher for Hispanic persons across all states.

We also developed a measure of health center penetration within states. For purposes of this study, “health center penetration” is defined as the percent of the state low-income population (200% of the federal poverty level and below) served by health centers. Figure 1 shows health center penetration in each state and District of Columbia. Health centers in seven states (Alaska, Colorado, Hawaii, Massachusetts, Rhode Island, Washington, and West Virginia) and DC have high penetration rates (i.e., rates over 20%). Health centers in another seven states (Delaware, Louisiana, Nebraska, Nevada, North Dakota, Oklahoma, and Wyoming) reported the lowest penetration rates (i.e., rates lower than 5%).



<sup>18</sup> Centers for Disease Control and Prevention, National Center for Health Statistics.



We conducted multiple regression models which included health center penetration (i.e., percent of the state's low-income population served by health centers) and controlled for age, education, population density, per capita income, and percent of the state population without health insurance.

A measure of the generosity of the state Medicaid program was also examined in the health disparities models, in view of the well established association between health insurance and access to health care. The purpose of this measure was to determine whether health center penetration still mattered as an independent consideration even in those states with relatively generous Medicaid eligibility levels. Information about each state's Medicaid program as of June 2001 was obtained from a report produced for the Kaiser Commission on Medicaid and the Uninsured.<sup>19</sup> The generosity measure chosen was state Medicaid financial eligibility levels for families with children (family of 3) as a percent of the federal poverty level. This measure was selected because the Medicaid-eligible health center patient population consists overwhelmingly of families with children.

By themselves, state Medicaid eligibility levels were determined to have no significant association with state level measures of health disparities. However, because one third of health center operating revenue is derived from Medicaid, state Medicaid coverage and payment policies are integral to the ability of health centers to achieve high penetration.<sup>20</sup> Therefore, if health centers are shown to have a significant relationship with reduced health disparities, state Medicaid policy remains a critical component of health center efforts to reduce health disparity.

In addition, we supplemented our quantitative estimates with interviews conducted during the first half of 2003 with the staff of five health centers. These health centers are located in five communities selected on the basis of geography, urban/rural location, and a disproportionately high volume of minority and low income patients relative to the already high average rate for health centers nationally. Telephone interviews were conducted with health centers in these locations (Colorado, Illinois, New York, Texas and West Virginia). The purpose of the interviews was to ascertain health centers' experiences in furnishing health care in their communities, their efforts to reduce health disparities, and their ability to develop disparity reduction initiatives in light of a growing crisis in available resources, in particular, state Medicaid cutbacks. The purpose of these interviews was also to learn more about how health centers customize and adapt their care to minority communities.

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<sup>19</sup> Maloy KA, Kenney KA, Darnell J, and Cyprien S. *Can Medicaid Work for Low-Income Working Families?* (Kaiser Commission on Medicaid and the Uninsured: Washington, D.C., April 2002).

<sup>20</sup> Rosenbaum and Shin, *supra*, footnote 1.

## Findings

### Overall Findings: Disparities Reduction Estimates

The results of our regression analysis showed a significant association between health center penetration and reduced racial and ethnic health disparities for certain key outcomes measures. Specifically, greater penetration levels were associated with larger reductions in disparities.

In the case of black/white health disparities, the analysis showed a significant relationship ( $R^2$  ranged from .40 to .61) between the extent of penetration of health centers into states' medically underserved communities and a narrowing of the health disparities gap in the case of total death rate and prenatal care ( $p < 0.05$ ). Infant mortality was also negatively related to health center penetration although it was not significant at the 0.05 level ( $p = 0.11$ ). No predictive value from penetration was found in the case of heart disease death rate, diabetes death rate, or tuberculosis case rate.

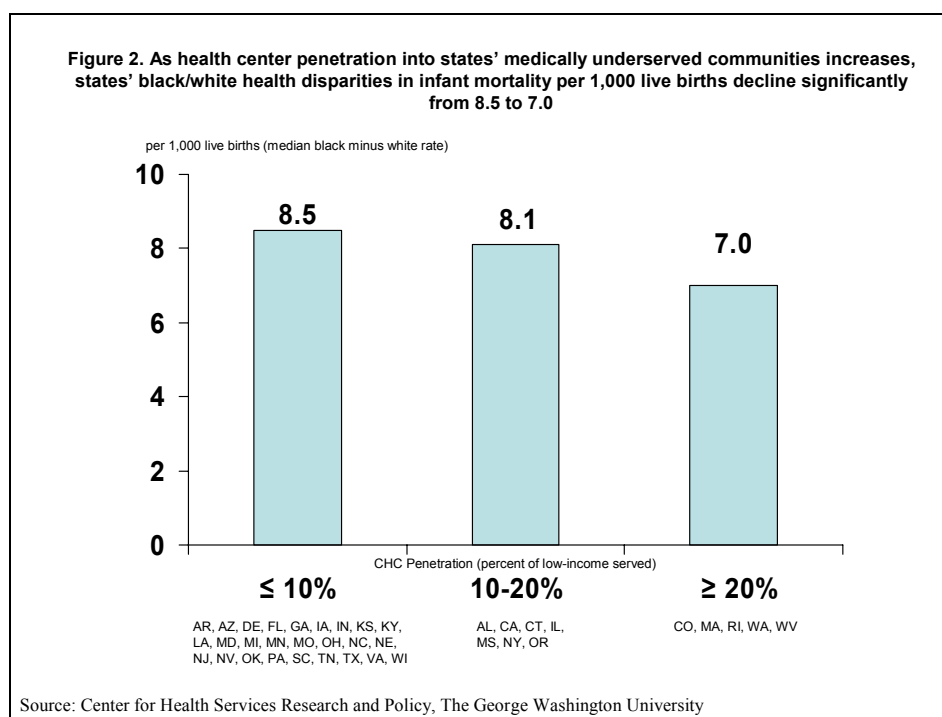
In the case of Hispanic/white disparities, the penetration rate for health centers was found to have a significant association ( $R^2$  ranged from .28 to .47) with health disparity reductions in the case of the tuberculosis case rate and prenatal care. Penetration did not show predictive value for heart disease death rate, infant mortality, diabetes death rate, or total death rate.

Figures 2-6 display our findings regarding measures for which significant health disparity reductions were identified. Rate estimates reflect the average difference in actual rates reported by the state between black/white and Hispanic/white groups for three levels of health center penetration ( $\leq 10\%$ , 10% to 20%, and  $\geq 20\%$ ).

## Black/White Health Disparities

### *Infant Mortality*

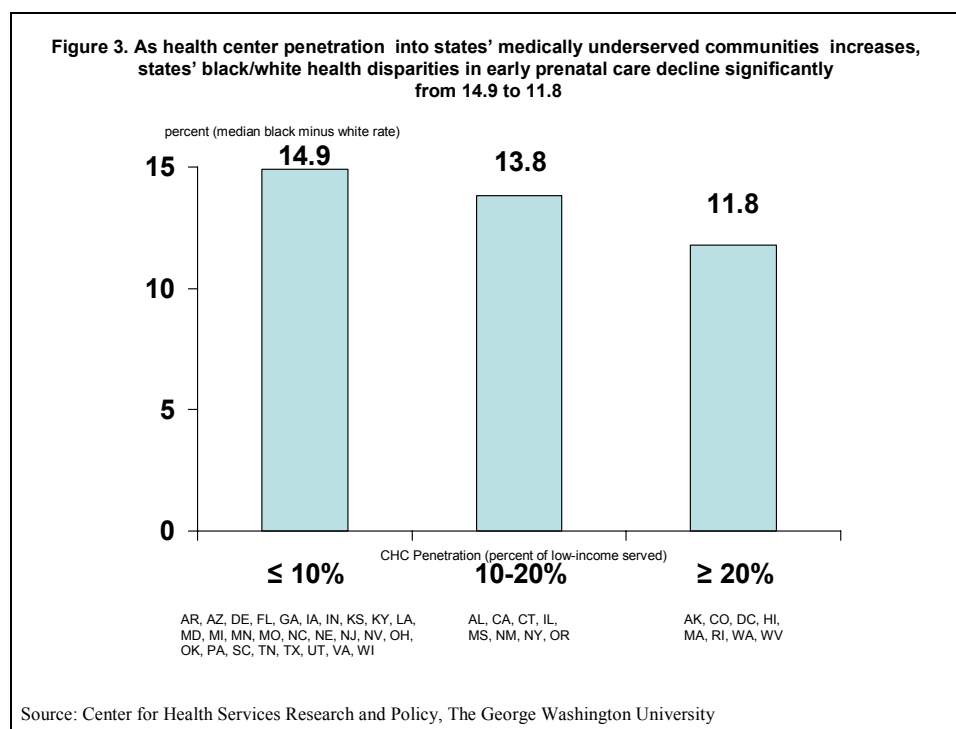
Figure 2 shows the association between the extent of the penetration of health centers into low-income communities and the disparity in black/white infant mortality rates.<sup>21</sup> The difference in infant mortality among black and white infants was narrowest in the states with the highest rate of health center penetration. There was a median of 7.0 additional black infant deaths in states with the highest rate of health center penetration compared to 8.5 additional black infant deaths per 1,000 live births in states with the lowest rate of health center penetration.



<sup>21</sup> Thirteen states (AK, DC, HI, ID, ME, MT, ND, NH, NM, SD, UT, VT, and WY) were excluded due to inadequate sample size. For example, The District of Columbia reported fewer than 20 infant deaths per 1,000 live births for the white population.

## Prenatal Care

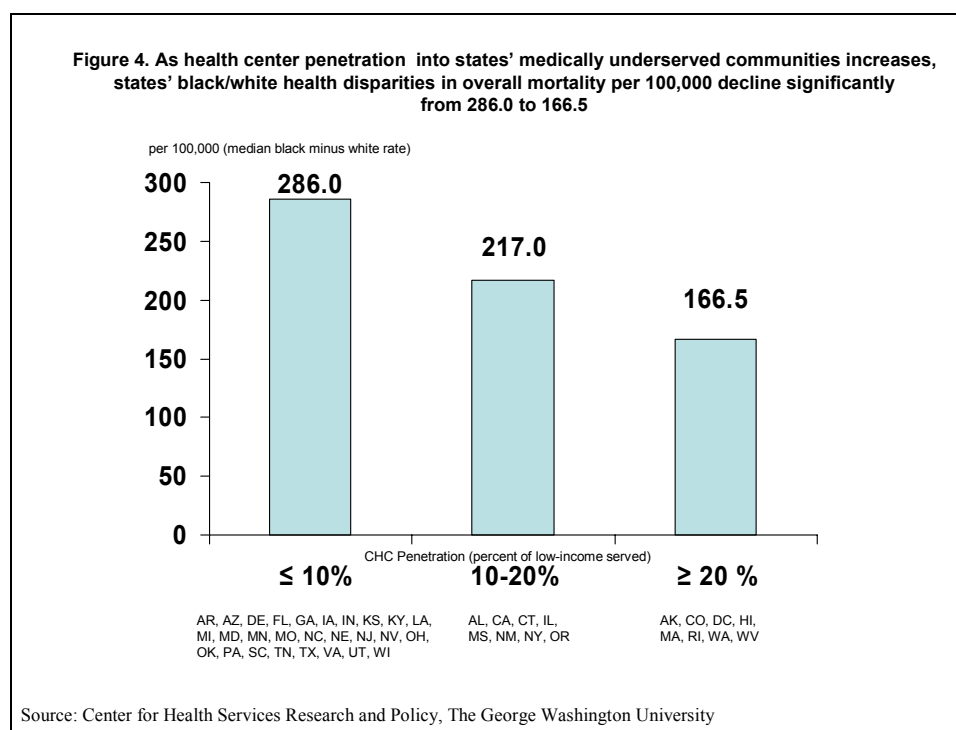
Figure 3 shows that high health center penetration is associated with the lowest level of disparity in the proportion of mothers who received prenatal care early in pregnancy.<sup>22</sup> The eight states (AK, CO, DC, HI, MA, RI, WA, and WV) with the highest level of health center penetration also show the narrowest “racial gap” with respect to access to early prenatal care among black and white pregnant women. The difference between the proportions of black and white women receiving prenatal care lessened as health center penetration rate increased. States with the highest penetration level were associated with an 11.8 median difference in black/white disparities for access to early prenatal care compared with a 14.9 difference in states with the lowest penetration level.



<sup>22</sup> Eight states were excluded (ID, ME, MT, NH, ND, SD, VT, and WY).

## Total Death Rates

Figure 4 shows that higher levels of health center penetration into low-income communities is associated with a narrowing of the overall black/white death rate gap.<sup>23</sup> In states with health center penetration rates greater than 10%, the difference in black/white death rates was substantially less than in states with the least health center penetration. States with at least 20% health center penetration were associated with a median of 166.5 additional black deaths compared with 286 additional black deaths per 100,000 in states with the lowest penetration level.



<sup>23</sup> Black/white disparities in total death rate do not include 8 states (ID, ME, MT, NH, ND, SD, VT, and WY) due to inadequate sample size.

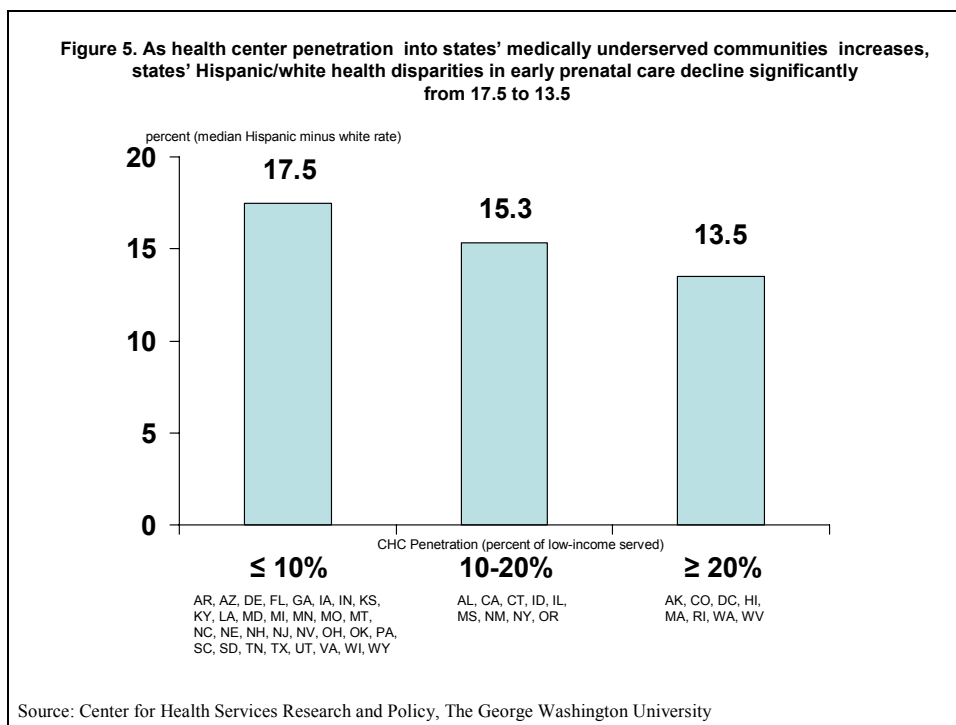
## Hispanic/White Health Disparities

Figures 5 and 6 show that higher penetration of health centers is associated with a narrowing of Hispanic/white health disparities for both tuberculosis rates and early prenatal care.

### *Prenatal Care*

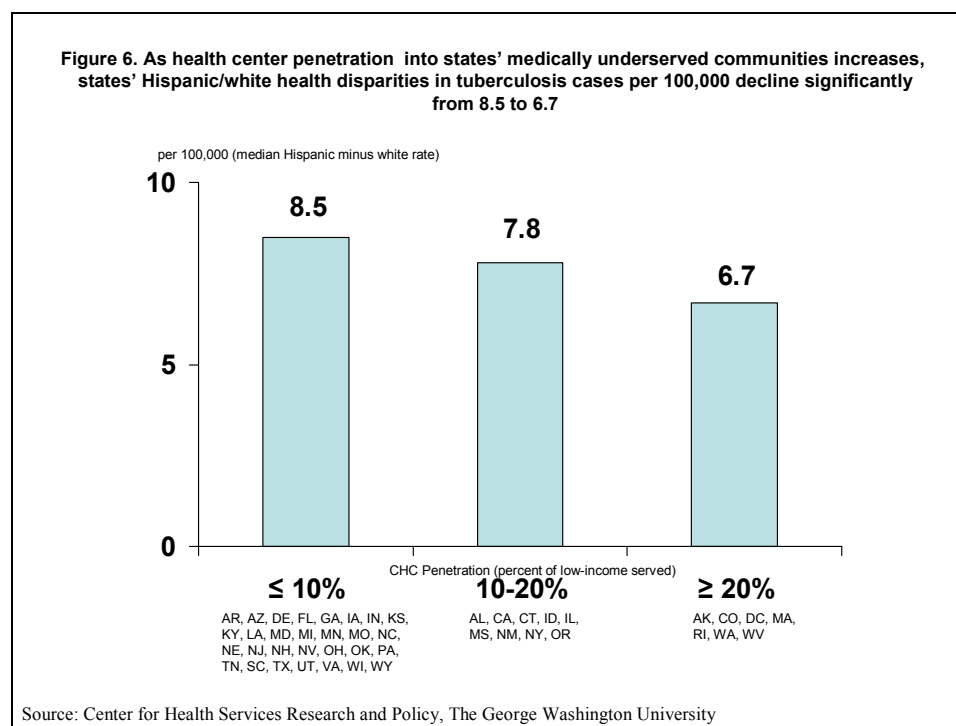
The estimated impact of CHC penetration on Hispanic/white disparities in prenatal care is shown in Figure 5. Three states were excluded (ME, ND, and VT) due to small sample sizes of less than 10,000 Hispanics in the state.

Figure 5 suggests the greater the penetration of health centers into low-income communities in states, the narrower the gap between the rate at which Hispanic and white women receive prenatal care early in their pregnancies. States with the highest penetration of health centers showed a 13.5 median difference in the percent of pregnant women without access to early prenatal care in Hispanic/white disparities for prenatal care compared to 17.5 percent in states with the lowest health center penetration levels.



## Tuberculosis Rate

Figure 6 shows the relationship between the presence of health centers in states' low-income communities and the magnitude of the disparity between Hispanic and white tuberculosis rates. As with the other measures, the greater the penetration of health centers, the narrower the differences between the rates of tuberculosis among Hispanic and white populations.<sup>24</sup> States with the highest penetration of health centers were associated with a median of 6.7 additional Hispanic tuberculosis cases compared to 8.5 additional Hispanic tuberculosis cases per 100,000 in states with the lowest penetration levels.



<sup>24</sup> Six states were excluded (HI, ME, MT, ND, SD, and VT).

## Findings from Health Center Interviews

All five health centers interviewed reported extensive and explicit involvement in disparity reduction efforts. Table 1 shows the conditions most commonly reported by all respondents as well as the perceived social factors contributing to these risks and the interventions pursued.

Table 1. Minority Health Risks and Health Center Interventions

Major health risks	Contributing social factors	Health center interventions
<ul style="list-style-type: none"> <li>• Asthma</li> <li>• Addictive disorders</li> <li>• Diabetes</li> <li>• HIV</li> <li>• Hypertension/heart</li> <li>• Under-immunization</li> <li>• Lead poisoning</li> <li>• General maternal and child health</li> <li>• Mental illness</li> <li>• Obesity</li> <li>• Oral health</li> <li>• Sexually transmitted diseases</li> <li>• Tuberculosis</li> </ul>	<ul style="list-style-type: none"> <li>• Poverty</li> <li>• Lack of access to specialists</li> <li>• Lack of transportation</li> <li>• Barriers for immigrants</li> <li>• Lack of health insurance resulting from loss/lack of employer coverage and ineligibility for Medicaid</li> <li>• Language and other barriers related to access to social services</li> </ul>	<ul style="list-style-type: none"> <li>• Intensive case management</li> <li>• Patient outreach and education</li> <li>• Telehealth services</li> <li>• Interpreters and other efforts to make services culturally competent</li> <li>• Special disease collaboratives as part of federal grant activities</li> <li>• Other health center services</li> </ul>

As Table 1 suggests, many of the interventions attempted by health centers are not commonly found in normal ambulatory health care practices. Many are activities associated with health providers such as health centers, community-based clinics, clinics operated by public hospitals and health systems, and similar entities that are specifically designed to be accessible to underserved populations and to emphasize interventions that address a broad range of health risks. Health centers either provide comprehensive services on site or arrange access to a wide array of services, often offer transportation to services, and often include interpreter services.

Of particular note have been the special disease collaboratives, known as the Health Disparities Collaboratives, that are overseen by the federal Bureau of Primary Health Care and in which two-thirds of health centers will participate by the end of 2003.<sup>25</sup> These collaboratives span diabetes, asthma, cancer, depression, cardiovascular disease, and HIV. The collaboratives are aimed at improving the skills of clinical staff and strengthening the process of care through the development of extensive patient registries that improve clinicians' ability to track the course of illness and progress from treatment as well as educate patients on self-management of their conditions. Respondents uniformly considered these registries critical to their success in treatment. Several noted significant improvements in patient health following institution of the collaboratives project at their centers.

<sup>25</sup> National Association of Community Health Centers. "The Role of Health Centers in Reducing Health Disparities." *Issue Brief*. July 2003: No 76.



Consistent with earlier studies, respondents noted the serious problems they face in securing access to specialty care for patients with advanced health conditions. Barriers were particularly noteworthy for uninsured patients. To overcome this problem, some health centers established telehealth services aimed at improving care management. One example offered by a health center in West Virginia was an interactive retinopathy screening program for patients with diabetes, in view of the high rate of blindness from diabetes in the service area.

A key observation among respondents was the importance of setting up a “safe area” where patients with certain conditions could freely discuss these conditions without fear of stigma. Respondents at one health center noted that this was particularly important in the case of depression, which patients often would mask by seeking care for other ostensible problems.

Health centers’ ability to engage in the types of customization considered essential to disparities reduction clearly was perceived to be under threat. Funding support was uniformly identified as a problem. Federal grants are small in relation to need, and funds available from local foundations, while critical, tend to be short term and small. Many health centers participate in state maternal and child health programs and partner with state government in numerous ways. With a staff of more than 20 health educators, outreach workers and case managers supporting the clinical practice, one Illinois health center reported a 700-delivery-per year practice in collaboration with the state.

By far, Medicaid represents the most important source of financing for health center practices, averaging 35 percent of respondents’ calendar year 2002 budgets. All respondents reported that they anticipated major reductions in services as a result of Medicaid cutbacks, with serious implications for the disparity reduction programs they had launched. One health center in Colorado noted that it was currently turning away between 50 and 100 persons per day because its facilities and staff simply could not meet the surge in demand.

## Conclusion

Our findings suggest that state level reductions in key racial and ethnic health disparities are associated with a higher penetration of health centers into states' medically underserved communities, which in turn are disproportionately minority because of the link between minority status and poverty and heightened health risks. Findings are striking for infant mortality (black patients), prenatal care (both black and Hispanic patients), tuberculosis rates (Hispanic patients), and overall death rates (black patients). These findings are consistent with earlier studies showing health centers' impact on the health status of residents of individual communities. They also suggest that a program of health center expansion is a critical part of an overall strategy to reduce minority health disparities.

Our interviews with individual health centers confirm that clinics actively pursue the overall program mission of bringing affordable and clinically appropriate health care to low-income communities. Regardless of location or size, respondents cited numerous examples of health care customization, most notably the implementation of Health Disparities Collaboratives expressly aimed at reducing health disparities. Respondents also reported numerous other adaptation efforts including interpreter and transportation services, and a culturally "safe" atmosphere in which patients who fear the health system feel safe to raise and discuss highly personal health problems. The Institute of Medicine has specifically noted effective clinical/patient communication as key to improving health quality for minority Americans.<sup>26</sup>

The lack of association between penetration and the narrowing of minority health disparities with respect to certain measures, in particular age-adjusted death rates from diabetes and heart conditions in both black and Hispanic patients, is troubling. We surmise that the answer in part may lie in the relationship between health centers, their patients with these conditions, and state Medicaid programs. Medicaid is critical to health centers in two ways. First, the presence of insurance coverage makes appropriate health care management far more feasible, particularly in the case of smaller health centers that lack the revenues to secure in-house specialists or pharmacies for their uninsured patients. Numerous studies show the link between insurance coverage and access to health care, and previous studies of health centers have documented the difficulties that arise when health centers attempt to manage uninsured patients with advanced health care needs.<sup>27</sup> Because Medicaid coverage is far more prevalent among the maternal and child health population and far less available to older adults without young children,<sup>28</sup> health centers may face especially serious challenges managing large uninsured adult populations with

<sup>26</sup> Institute of Medicine, *supra*, footnote 10.

<sup>27</sup> Gusmano MK, Fairbrother G, and Park H. "Exploring the Limits of the Safety Net: Community Health Centers and Care for the Uninsured." *Health Affairs*, November/December 2002; 21(6): 188-194.

<sup>28</sup> Schneider A and et al. *The Medicaid Resource Book*. (Kaiser Commission on Medicaid and the Uninsured: Washington, D.C., July 2002).

diabetes, cardiovascular conditions, and other chronic illnesses requiring intensive intervention and specialty care.

A second aspect of Medicaid's importance to health centers is the program's capacity for generating revenue and thus, health center viability. Without the Medicaid program, high health center penetration into heavily minority and medically underserved communities is effectively not feasible, because the financial underwriting is not present. Data from the 2000 National Ambulatory Medical Care and Expenditure Survey show that at least 85 percent of visits in ambulatory primary care practices come from insured patients.<sup>29</sup> Less than 10 percent of all health center revenues are derived from private health insurance. Health centers derive on average only 25 percent of their operating revenues from federal grants and receive only nominal payments from their patients. In order to survive and grow, health centers rely on Medicaid. Indeed, medical assistance represents their only viable source of health insurance revenue, given the lack of access to employer-sponsored health benefits among their patients (who overwhelmingly are lower income workers and their families). In 2002, only 15 percent of health center patients had private insurance coverage.

The consequence of these financial realities is that, as important as federal grants may be to health center growth, Medicaid is crucial to their ability to achieve the level of penetration and stability necessary to generate and maintain long term health disparities reduction, because of its coverage of lower income adults and children, the range of benefits and services and the program's special "Federally Qualified Health Center" payment formula, that ensures that revenues approximate the cost of caring for Medicaid patients. Because health centers furnish many types of non-insured services (e.g., basic social work) and – even more importantly – serve an immigrant population ineligible for Medicaid under virtually any circumstances, federal grants must be invested in uninsurable activities and patients. Medicaid in turn becomes essential to centers' ability to generate revenues necessary for long-term expansion and stability.

Finally, we believe that these data and the findings from our interviews suggest that key to health centers' success is the comprehensiveness of their care and their staying power in communities. Trust, longevity, and the ability to achieve an intimate relationship with community patients may be at their most critical where minority and underserved patients are concerned. Thirty-five years ago, two researchers identified access to physicians who were "committed sponsors" of their patients as a significant factor in health outcomes, health care quality, and survival rates.<sup>30</sup> Many health centers have been operating in their communities for decades and have built a trust and community presence that few social institutions achieve. Indeed, anecdotal evidence regarding health centers'

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<sup>29</sup> Cherry DK and Woodwell DA. "National Ambulatory Care Survey: 2000 summary." *Advance data from vital and health statistics*; No. 328. (National Center for Health Statistics: Hyattsville, Maryland, 2002).

<sup>30</sup> Duff R and Hollingshead AB. *Sickness and Society*. (Harper Rowe: New York, New York, 1968)

response to emerging community health needs, as major demographic shifts change the population composition of entire neighborhoods, attest to the importance of community endurance. It is this commitment to community that may position health centers to make a health care difference, as well as the comprehensiveness of the services they offer, ranging from preventive care to extensive patient support services.

Despite the success of the program, health centers exist in far fewer numbers than the need for accessible primary care among underserved populations indicates. In 2002, health centers served approximately 10.4 percent of all low-income persons nationally. Congressional appropriations increases for FY 2003 were sufficient to permit expansion into the low-income population by only an additional 3 percentage points. This shortfall between population need for health centers and their prevalence comes at a time when the number of uninsured persons is increasing, and the concentration of uninsured patients at health centers is intensifying.<sup>31</sup>

Although the goal of reducing health disparities is national, in the end it is the underserved communities themselves -- and the states in which these communities are located -- that shoulder much of the practical burden of achieving the types of health systems changes (such as better insurance coverage and greater health care access) that have been associated with a reduction in minority health disparities.<sup>32</sup> In this regard, health centers are a principal strategy for anchoring accessible, high quality primary health care in pervasively poor and uninsured communities that, without such an investment, could not hope to independently attract and support sufficient private medical care practices. This study suggests that a national policy that aims for increased health center penetration, coupled with adequate operational support via strengthened insurance coverage of lower income persons, can be expected to make a significant difference in minority health status at the local community level.

#### A Note on Study Limitations

There are several limitations to this study. First, the study is limited by the extent to which data on health status are available on a state-by-state basis, and the degree to which the racial/ethnic incidence for any particular state is sufficiently sizable to yield reliable estimates. Because of the lack of data, the state-by-state impact of health centers on certain population groups at significant health risk for certain conditions, such as American Indians, could not be calculated.

Second, this study measures the impact of health centers. A logical question would be whether an increase in the penetration of other categories of

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<sup>31</sup> Rosenbaum and Shin, *supra*, footnote 1.

<sup>32</sup> Davis AC and Hager CL. "Eliminating Racial and Ethnic Health Disparities: Opportunities and Challenges for the Commonwealth." *Massachusetts Health Policy Forum Issue Brief*. 2001: No. 11.

health professionals (e.g., office-based physicians) would yield the same result. At one level, the question has relatively little meaning, since health centers by definition exist in communities in which there is either a virtual absence of physicians or whose physicians are inaccessible to low-income uninsured and publicly insured persons, as indicated by a high incidence of poverty, lack of health insurance, public insurance status, and preventable death and disability among the target populations. To assume a high level of office-based physicians would be to assume an event that cannot coexist with the health centers program.

Although it is not possible to test the impact of office-based physicians on state level health disparities, it is important to bear in mind that office-based physicians would not be expected to have the level of customized practice found in health centers. On a widespread basis, physicians do not have a tradition of customization for the poor, nor are they paid a special rate under Medicare and Medicaid to do so.

To the extent that a private community medical practice in a heavily underserved area were to decide to apply for a health center grant and convert its operations to program specifications, then the potential for physician practices to make a similar impact would grow. This is because physician practices would need to transform themselves into health centers in order to qualify for payments. In fact, numerous health centers today are an outgrowth of private practices that went through just such a conversion process in order to strengthen their community activities to better respond to pressing local health problems.

A third limitation of this study is that it does not take into account the full array of non-medical factors that might be associated with the narrowing of health disparities and that have been shown to affect health, such as the quality of housing and the physical environment, and other factors that could influence health. The purpose of this study was to examine whether a specific health intervention aimed at improving health care in underserved communities showed a relationship to health status.