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The Perceived Financial Impact of Quality Improvement Efforts in Community Health Centers

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Abstract

We administered surveys to 100 chief executive officers (CEOs) of community health centers to determine their perceptions of the financial impact of the Health Disparities Collaboratives, a national quality improvement initiative. One third of the CEOs believed that the HDC had a negative financial impact on their health center, and this perception was significantly correlated with centers having a higher proportion of uninsured patients. Performance-based payment incentives may improve care but may also add new financial burdens to facilities that treat the uninsured population. As such, a provider's payer mix may need to be considered in the design of QI programs if they are to be sustainable.

Keywords

community health centers; health disparities; pay for performance; quality improvement

In response to the growing healthcare disparities among groups of a specific race, ethnicity, socioeconomic status, and/or geographic location, national reform initiatives and healthcare organizations are searching for ways to deliver more cost-effective and higher quality care (Chassin & Galvin, 1998; Lurie et al., 2005). To transform the way in which primary healthcare is delivered to underserved populations in community health centers (HCs), the Bureau of Primary Health Care (BPHC), within the Health Resources and Services Administration (HRSA), Department of Health and Human Services (HHS), began the Health Disparities Collaboratives (HDC) in 1998. The aim of this quality improvement (QI) initiative is to reduce health disparities and improve the quality of care in federally funded HCs (Chin et al., 2004). The goals of the HDC are as follows: (1) to generate and document improved health outcomes for underserved populations; (2) to transform clinical practice through new evidence-based models of care; (3) to develop infrastructure, expertise, and multidisciplinary leadership to improve health status; and (4) to build strategic partnerships.

HCs participating in the HDC select a multidisciplinary team to work on the initiative. These teams spend 1 year learning and applying methods to improve their healthcare delivery, and then continue these quality improvement techniques during ensuing years. Resource

expenditures include staff participation in learning sessions and conference calls, and staff time to learn, design, monitor, and document changes. During the study period, team members participated in 3 regional learning sessions and a national forum during the initial learning year. Oftentimes, quality improvement efforts also include the development of new workflow processes, such as the introduction of electronic patient registries, a tightly integrated continuum of care, and physician feedback and reminder systems. Past research has found that the Collaboratives have been effective at improving diabetes care (Chin et al., 2004) and that over 90% of HC staff have felt that the HDC were worth the effort and were successful. The HDC program in diabetes care has also been found to be cost-effective from a societal perspective (Huang et al., 2007). As of December 2007, 915 HCs nationwide were participating in the HRSA Health Disparities Collaboratives (Charles Daly, e-mail communication, December 10, 2007).

Despite the significant investment in QI efforts and encouraging data regarding their effectiveness, less is known about how these programs have affected the financial status of HCs. Past research has demonstrated that delivering high-quality care in the current healthcare system—and particularly within HCs—does not always save costs and increase revenue for the provider (Rosenthal et al., 2004). In many ways, HCs are purposely designed as nonprofitable organizations. National data on HC patients indicate that almost all of them (91.1%) are at or below 200% of the poverty line, 40.1% are uninsured, and nationally, many suffer from chronic conditions like diabetes, hypertension, and asthma, conditions requiring costly and a more intensive level of care (National Association of Community Health Centers, 2005; U.S. General Accounting Office, 2000). HCs are distinctive philosophically, organizationally, and financially among primary care providers (Chien et al., 2005). They are located in areas where care is needed but is scarce, and provide care for millions of Americans regardless of their insurance status or ability to pay. The fact that HCs are able to provide quality healthcare to disenfranchised groups may be a critical element in narrowing gaps in healthcare and outcomes (Shi et al., 2004).

While HCs have been an excellent source of quality care for the underserved, many face operational or financial challenges, and some have lost federal grant funding (U.S. General Accounting Office, 2000). The growing number of uninsured, the rising costs of medical care, and a decrease in federal and state subsidies used to cover the cost of providing charity care all impose financial hardships on HCs (National Association of Community Health Centers, 2007). The average annual cost of treating a patient is \$230, more than what the federal HC grant actually pays per uninsured patient (National Association of Community Health Centers, 2007). More than half of all HCs reported operating deficits between 1997 and 1999 (McAlearney, 2002) and in 2005, about 40% of HCs reported operating deficits (Rosenthal et al., 2004). These resource constraints add to existing barriers to implementing and sustaining quality improvement programs in HCs.

In the face of these financial realities, many leaders of healthcare organizations question whether participation in QI programs like the HDC might negatively affect their organizations' financial status (Severens, 2003). It is uncertain whether the return on investment and quality of care gains outweigh the financial and human effort needed to implement and maintain such programs (Øvrtveit et al., 2002; Robert Wood Johnson Foundation, 2005). In the context of the HDC and HCs, researchers have found in a small case study series that the administrative costs of the collaborative have no regular source of reimbursement and represent new costs that centers must absorb (Huang et al., 2008). HCs do receive federal subsidies for the provision of general healthcare services, but they do not receive regular subsidies dedicated to the HDC. While these initial case study findings are informative, we do not know whether these experiences are generalizable to HCs as a whole. An equally important deficit in our knowledge is that we know very little about how chief executive officers (CEOs) at HCs perceive the

financial impact of the HDC and what factors influence these perceptions. These perceptions may be important determinants of senior leadership's ability to devote resources to QI-related programs. The nature and the determinants of these financial perceptions may also be important for the optimal design of QI policies and financial incentives. Furthermore, successful adoption can support dissemination and sustainability of QI programs.

The purpose of this study is to describe CEOs' perceptions of the financial impact of the HDC on HCs and to identify predictors of these perceptions. We hypothesized that size, payer mix, and overall financial status of the center would be important determinants of the perceived financial impact.

METHODS

Chief executive officer survey

A survey was developed for CEOs of HCs. The aim of this mailed self-administered survey was to identify facilitators and barriers of HDC spread and sustainability. CEOs were asked to assess the degree to which they believed the HDC had specifically affected clinical care costs per patient, HC costs, patient care reimbursement, and grant funding at their HC during calendar year 2003. CEOs were also queried about the overall impact of the HDC on HC finances and asked to provide data regarding their HCs' funding, particularly whether or not they received special funding for their HDC program.

The sampling frame was restricted to Midwest and West Central HCs who had participated in the HDC for at least 1 year. Of the 173 HCs identified, 86% provided complete listings and contact information of their CEOs. The survey was sent to CEOs in 149 HCs, and 100 surveys were returned for a 67% response rate.

Uniform data system reports

HRSA collects data from HCs supported by Bureau of Primary Health Care grants through the uniform data system (UDS). A core set of information appropriate for monitoring and evaluating HC performance and reporting on trends is collected through the UDS each calendar year. Although the UDS data are subject to review and cleaning, the information is self-reported and not audited. The data collected include operational and financial data on the HC, such as information on the basic demographic information of populations served, types of services offered, staffing of full-time equivalents by position, and reports of revenues and expenses. The 2004 UDS data set was used for this study. Each HC was linked to the UDS data set through its UDS number.

Statistical analysis

Our main outcome of interest was the CEO report of impact of the HDC on HC finances. We used descriptive statistics to describe the demographic characteristics of the CEOs and HCs. We tested associations between the reported financial impact of the HDC and CEO and HC characteristics, using the χ^2 test for categorical variables, such as gender, race, and geographic location, and one-way ANOVA for normally distributed variables (eg, CEOs' age). For continuous variables with nonnormal distribution (eg, time at HC, time as CEO, payer mix, number of patients, number, or providers, number of years in HDC, total grants received, and operating margin ((financial balance/revenue) $\times$ 100), nonparametric Kruskal-Wallis ANOVA was used. All statistical testing was done at a 5% significance level. The analyses were performed using SAS, version 9.1 (SAS Inc, Cary, NC).

RESULTS

One hundred CEOs and their respective HCs were included in the analysis. Of the 100 CEOs, 43% were men (Table 1). The average age of the CEOs was 51.8 years, ranging from 36 to 70. Over two thirds (72%) of the CEOs were white, 16% were African-American, and 12% were Hispanic. CEOs had been at their HCs for an average of almost 12 years, and they had served as CEO for an average of 9.7 years.

Almost half of CEOs who responded to the question indicated that their HC was in a rural location. HCs had an average of 15.4 providers (includes physicians, nurse practitioners, physician assistants, and certified nurse midwives) and served a median of 10,000 patients.

At the time the survey was administered, the HCs had been in the collaborative for an average of 2.6 years and received an average of 4 total grants per year. As expected, HCs had a disproportionate share of patients with no insurance; the uninsured made up half of their client base. Together, Medicaid and the uninsured made up over three-quarters of the clients at the HCs surveyed, similar to the distribution of payers at community HCs nationally. HCs had fewer patients with private insurance (15.4%) and Medicare (8.6%). Although it varied greatly, the median operating margin (not including donations) was 0.37%.

When asked about the impact that the HDC had on the finances at their HC, 12% of CEOs reported that the HDC had had a beneficial effect on their HC's finances, while one third believed the program had had a harmful effect on their HC's finances (Table 2). In addition, close to three-quarters indicated that the HDC had increased the costs of providing patient care, as well as the overall operating costs of the center.

Rural/urban classification and payer mix of HCs were strong predictors of CEOs' perceived financial impact of the Collaborative (Table 3). CEOs from rural and urban centers were highly divided in their response to this question ($P = .001$). The majority of CEOs from urban centers reported that the HDC had not changed HC finances (67%), with a substantial minority reporting a negative impact (39%), and only 17% reporting a beneficial effect. Of those who said that the HDC had been beneficial, 83% were from rural HCs; however, a large proportion of CEOs from rural centers also reported that the HDC had been financially harmful (61%). CEOs who reported that the HDC had a beneficial financial impact came from centers that had a higher percentage of privately insured patients than those who reported that the HDC had a neutral or negative impact ($P = .01$). Conversely, CEOs who indicated that the HDC had been financially harmful came from HCs that had a higher percentage of uninsured patients than other HCs ($P = .01$). Among CEOs who said the HDC was harmful, their HCs had an average uninsured population of 50.8%; for CEOs who said the HDC was beneficial, their HCs had an average uninsured population of 33.4%. This relationship remained significant even when we used a newly created variable that combined the Medicaid and uninsured groups. CEOs who perceived that the HDC were financially harmful came from centers with a higher percentage of Medicaid or uninsured patients than CEOs who perceived no financial harm.

There appeared to be a relationship between CEO reports of financial impact and the operating margins of HCs, although this relationship was not found to be statistically significant. CEOs who reported financial harm came from centers with an average operating margin of -0.9% in 2003 while CEOs who reported financial benefit came from centers with an average operating margin of 1.2%.

DISCUSSION

Disparities in health are linked with the quality of care delivered to communities of color or patients from lower socioeconomic groups. Therefore, efforts to improve quality of care in

clinical settings where these patients are served may help reduce disparities in healthcare and health status (Lurie & Dubowitz, 2007). Improving the quality of care in HCs may play a pivotal role in reducing health disparities in the United States because of the unique patient population that HCs serve.

While quality improvement efforts such as the HDC may help enhance healthcare (Chin et al., 2007; Landon et al., 2007), the results from this study show that CEOs at HCs often perceive that the HDC have been financially harmful to their HCs; in fact, most believed that the HDC have increased the costs of patient care and costs of operating the HC. One reason for this perception may be that many of the costs of implementing the HDC occur upfront and are relatively easy to measure. Case studies of 5 selected HCs found that during their first year of implementation, the Collaboratives contributed additional administrative costs between \$6 and \$22 per patient in the first year of the program, with a decline in these costs over time as programs expand their reach (Huang et al., 2008).

In addition to new administrative costs, the HDC program may also have a negative impact on clinical costs and revenues related to serving a more challenging group of patients, with less education, income, and English language proficiency, and more chronic care problems, compared to other healthcare organizations. Quality improvement initiatives such as the HDC may actually lead to higher clinical costs because activities related to the initiative and some preventive services are not billable. At the same time, quality improvement initiatives may lead to lower clinical revenues if acute care visits are reduced as a result of better care or patients' adherence to treatment and better disease management (U.S. General Accounting Office, 2000). These financial changes may be especially relevant for HCs with a large proportion of Medicaid and uninsured patients. QI programs may have multiple effects on the balance of costs and federal support for HCs, and careful examination of these effects is very important for HCs that face a growing number of uninsured patients.

The financial challenges that HCs face in implementing QI programs are shared with many other providers of primary care. Recognition of these challenges has led to the introduction of financial incentives, such as pay-for-performance (P4P), that are intended to encourage provider participation in QI programs. P4P programs offer financial rewards to physicians or organizations meeting specific goals, such as provision of certain preventive care, patient satisfaction, acquisition of information technology, and cost containment (Sturnk & Hurley, 2004). P4P has sometimes been lauded as the "carrot" in a "carrot and stick" (Kent, 2006) approach for enticing providers and HCs to focus on quality.

While healthcare purchasers, health plans, and provider organizations are developing P4P programs with the intent of improving quality of care and limiting costs, it is important to realize that these programs may not significantly help HCs (Chien et al., 2007). Payments from Medicare, other public insurance, and private insurance are on the decline; private insurance covers only about 57% of HCs' costs, while Medicaid pays an average of 87% (National Association of Community Health Centers, 2005). Most HC patients are on Medicaid or uninsured, and therefore, HCs are not significantly affected by Medicare or private plan incentives. While some Medicaid agencies are considering the implementation of P4P programs, it is important to take into account the special circumstances that HCs face such as the large proportion of uninsured, difficulties with assuring patient compliance and limited Medicaid reimbursement for preventive care and chronic disease management. All of these factors may significantly increase the challenge of improving chronic disease management and therefore necessitate more resources to achieve the same level of care improvements in other populations.

It is important to note that there are several limitations to this study. Our sample size was limited and we only surveyed HCs in the Midwest and West Central regions. However, this is one of the largest studies of healthcare organization leadership in existence. In addition, the payer mix of the HCs surveyed is similar to that of HCs nationwide (National Health Service Corps, 2003), which suggests that the financial situation of the study sample is representative of HCs nationally. Lastly, it is possible that the survey was subject to response bias, in which respondents answer questions in the way they think they should be answered, rather than according to their true opinions. For some questions, the majority of respondents selected the neutral response. Assuming some positive response bias, we might conclude that financial losses due to HDC are greater than the perceptions reported by CEOs.

Despite these considerations, our findings provide insight into the perceived financial burdens of quality improvement efforts and how they relate to payer mix and other provider characteristics. To successfully sustain quality improvement efforts, it is important to understand the financial environment in which such programs are being implemented. Our current study suggests that alternative strategies to encourage QI programs may be necessary among HCs or else reforms in the reimbursement scheme may be necessary to make QI sustainable in HCs with large numbers of uninsured or underinsured patients. For example, the payer mix of health-care organizations may need to be considered in the design of QI incentives if healthcare improvements are to be equitably achieved.

As the number of uninsured Americans and prevalence of chronic conditions increase, the demand for services in HCs will also increase. HCs are a vital part of the nation's primary care healthcare network, as they provide services to 15 million patients who would otherwise have limited or no access to care. Improving care for patients in these centers may be a key step to redressing healthcare disparities and meeting the goals of the United States' *Healthy People* 2000 and 2010 public health agendas (Rosenthal & Dudley, 2007).

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Table 1Characteristics of chief executive officers and health centers ($N = 100$)

	Mean (SD) or N (%)	Median
<i>Chief executive officer characteristics</i>		
Gender		
Male	42 (43%)	NA
Female	55 (57%)	NA
Age, y	51.8 (7.4)	52.0
Race or ethnicity		
White	67 (72%)	NA
African-American	15 (16%)	NA
Hispanic	11 (12%)	NA
Time at health center, y	11.9 (9.5)	9.9
Time as chief executive officer, y	9.7 (7.9)	7.5
<i>Health center characteristics</i>		
Rural or urban classification		
Rural	46 (49%)	NA
Urban	49 (52%)	NA
Number of providers*	15.4 (16.5)	10.1
Number of patients served in 2003	14,477 (13,753)	10,000
Payer mix (2003) [†]		
Private, %	15.4 (13.4)	11.4
Medicare, %	8.6 (6.0)	7.0
Medicaid, %	25.8 (13.0)	24.2
Uninsured, %	50.1 (20.4)	50.1
Medicaid or uninsured, %	75.9 (18.0)	81.0
Number of years in Health Disparities Collaboratives	2.6 (1.4)	2.0
Number of grants received	4.1 (1.8)	4.0
Operating margin, 2003, %	-0.5 (14.9)	0.4

* Providers include physicians, nurse practitioners, physician assistants, and certified nurse midwives.

[†] Payer mix categories are not mutually exclusive.

Table 2Chief executive officers' perceptions of the financial impact of the Health Disparities Collaboratives ($N = 100$)

	Decrease (%)	No change (%)	Increase (%)
Costs of patient care	4	24	73
Overall operating costs of the center	2	24	75
Reimbursement for patient care	6	79	15
Funding from government agencies	8	76	16
Funding from private foundations	7	77	16
	Harmful N (%)	No change N (%)	Beneficial N (%)
Overall financial impact	37 (37)	50 (51)	12 (12)

Table 3

Associations between chief executive officers' report of overall financial impact of Health Disparities Collaboratives and CEO and health center characteristics

	Harmful		No Change		Beneficial		P
	Mean (SD) or N (%)	Median	Mean (SD) or N (%)	Median	Mean (SD) or N (%)	Median	
<i>Chief executive officers</i>							
Gender							
Male	17 (50%)	NA	21 (42%)	NA	4 (33%)	NA	0.5939
Female	17 (50%)	NA	29 (58%)	NA	8 (67%)	NA	0.1952
Age, y	53.2 (5.9)	52.0	51.5 (8.2)	53.0	48.4 (7.7)	49.0	0.6559
Race or ethnicity							
White	25 (76%)	NA	34 (71%)	NA	8 (67%)	NA	
African-American	3 (9%)	NA	9 (19%)	NA	3 (25%)	NA	
Hispanic	5 (15%)	NA	5 (10%)	NA	1 (8%)	NA	
Time at health center, y	11.5 (9.6)	9.8	11.8 (9.8)	9.1	13.8 (9.3)	12.5	0.6272
Time as CEO, y	10.5 (8.2)	8.5	9.3 (7.7)	7.1	9.2 (8.5)	7.0	0.8513
<i>Health center</i>							
Rural or urban classification							
Rural	20 (61%)	NA	16 (33%)	NA	10 (83%)	NA	0.0015
Urban	13 (39%)	NA	32 (67%)	NA	2 (17%)	NA	
Number of providers	10.9 (6.3)	8.9	19.8 (23.1)	16.7	13.4 (10.4)	8.6	0.7341
Number of patients served in 2003	11,276 (7,988)	10,000	16,568 (17,038)	10,000	16,657 (9,641)	12,037	0.5596
Payer mix, 2003							
Private, %	15.9 (10.9)	14.5	12.1 (12.6)	7.7	25.7 (18.6)	26.7	0.0131
Medicare, %	7.9 (5.5)	6.6	7.9 (5.5)	7.0	13.1 (7.5)	14.2	0.0832
Medicaid, %	24.5 (11.1)	22.4	26.4 (14.2)	24.2	27.6 (15.6)	23.5	0.8365
Uninsured, %	50.8 (19.0)	49.9	53.9 (20.8)	54.3	33.4 (16.2)	35.5	0.0095
Medicaid, % or Uninsured	75.3 (15.0)	78.8	80.3 (16.7)	86.1	61.1 (24.2)	61.7	0.0097
Number of years in health disparities	2.7 (1.5)	3.0	2.5 (1.4)	2.0	2.4 (1.1)	2.0	0.7718
Number of grants received	4.4 (1.4)	4.0	3.9 (2.1)	4.0	3.6 (1.1)	3.5	0.2863
Operating margin, % in 2003	-0.9 (9.7)	0.3	-0.5 (19.4)	0.4	1.2 (9.6)	4.6	0.6381

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