"ALIGNING FORCES FOR QUALITY"
EVALUATION

A project supported by the Robert Wood Johnson Foundation

Research Summary No. 8

August 2011

Comparing Hospital Characteristics Related to Improving Quality and Reducing Health Care Disparities

Raymond Kang and Romana Hasnain-Wynia, PhD

Contents

"If 513 hospitals in 16 diverse AF4Q communities can improve care and reduce disparities, then other hospitals throughout the nation can learn from their efforts and do the same."

Introduction

Recognizing the need for action at the local level and cooperation across many entities in a community to elevate health care quality and reduce health care disparities, the Aligning Forces for Quality (AF4Q) initiative (see insert) is a community-level intervention designed to improve overall quality of care through multi-stakeholder health care alliances. The first phase of AF4Q, launched in 2006, supported community leadership teams to work with physicians in ambulatory care settings to improve quality of care, measure and publicly report performance, and engage consumers to make informed choices about their health and health care. The program expanded in June 2008 to include a focus on reducing racial and ethnic disparities and improving equity in care.

Also in 2008, the AF4Q program extended its focus beyond ambulatory care to include inpatient care. Hospitals in the AF4Q communities enacted a variety of quality improvement initiatives that ranged from increasing the role of nurses in improving quality and reducing hospital readmissions among cardiac care patients, to improving language services for patients with limited English proficiency and increasing the efficiency of hospital emergency departments. The participating

Aligning Forces for Quality

The Robert Wood Johnson Foundation (RWJF) is investing in efforts to improve health systems in 17 communities across the nation.

Called Aligning Forces for Quality (AF4Q), the initiative brings a commitment of resources, expertise and training to turn promising practices into real results at the community level. AF4Q asks the people who get care, give care and pay for care to work together toward common fundamental objectives to lead to better care.

The initiative aims to lift the overall quality of health care, reduce racial and ethnic disparities and provide models for national reform. It advances three interrelated reforms that experts believe are essential to improving health care quality:

- **Performance measurement and public reporting**
- **Consumer engagement**
- **Quality improvement**

For more information about AF4Q, please visit

http://www.rwjf.org/qualityequality/af4q/index.jsp

For more information about RWJF, please visit

http://www.rwjf.org/

hospitals engaged in these various activities under the broad umbrella of the Hospital Quality Network, which ultimately aspires to improve inpatient quality in the AF4Q communities and diffuse promising practices throughout the nation. The premise is, if 513 hospitals in 16 diverse AF4Q communities can improve care and reduce disparities, then other hospitals throughout the nation can learn from their efforts and do the same (Painter and Lavizzo-Mourey, 2008). Researchers, health care leaders, and policy makers need to be careful when measuring the progress of AF4Q communities, however, because hospitals in these communities may be quantitatively different along some dimensions from hospitals in non-AF4Q communities. A variety of factors are associated with hospital quality of care. Several studies have shown that changes in payment policy and market conditions have an impact on hospital infrastructure and the activities that hospitals engage in both internally and in the community. Bazzoli and colleagues found that aspects of a hospital's infrastructure and supporting processes may be affected by declining financial performance, which have important implications for care delivery (Bazzoli et al., 2007). These findings suggest that it is important to look broadly at hospital operations when examining the factors that may have an impact on quality.

In this research summary, we describe hospital characteristics and activities that are associated with improving quality and reducing health care disparities; based on these factors, we compare hospitals in AF4Q communities with hospitals in the rest of the country. This baseline understanding can help to highlight potential facilitators and barriers that influence or impede success in

improving quality. In order to provide an initial snapshot of key factors that may be associated with hospital quality of care, the majority of data presented here are aggregated across all hospitals in AF4Q communities; the information for each AF4Q community is available upon request.

We present information about hospitals' demographic characteristics (e.g., bed size, ownership); level of community orientation; safety net status; collection of patient race, ethnicity, and language data; and adoption of electronic health record systems. We also provide information about hospital performance on patient experience measures and composite process of care measures for acute myocardial infarction (AMI), heart failure (HF), and pneumonia (PN).

Methods and Data Sources

We obtained information on hospital characteristics from the 2005-2007 American Hospital Association's (AHA) Annual Survey. We also obtained hospitals' performance on care processes for AMI, HF, and PN and the percentage of minority patients from the Centers for Medicare & Medicaid Service's (CMS) 2008 Hospital Quality Alliance Data.

Information on patient experience was collected from the 2008 Hospital Consumer Assessment of Healthcare Providers and Systems Hospital Survey (HCAHPS).

Hospital Characteristics

Studies have shown that specific hospital characteristics are associated with higher quality. For example, large, not-for-profit and teaching hospitals have higher performance scores on an array of processes related to the treatment of AMI, HF, and PN, even after controlling for individual patient demographics (Vogeli et al., 2009). Furthermore, while high nurse staffing levels are associated with significantly lower rates of mortality and adverse events (Kane et al., 2007), we know that in general, minority patients receive care in lower-performing hospitals with relatively low nurse staffing ratios (Hasnain-Wynia et al., 2007 and 2010, Jha et al., 2007).

Table 1 compares these characteristics in all U.S. hospitals with hospitals in the AF4Q communities; along many of these dimensions, hospitals in AF4Q communities are similar to hospitals in the rest of the country. For example, hospitals in AF4Q communities are just as likely to be teaching hospitals and health system members (versus stand-alone hospitals). They

also are similar in size to hospitals in the rest of the country. However, in terms of location, ownership status, and nursing ratios, hospitals in AF4Q communities are more likely to be urban, not-for-profit, and have a higher ratio of nurses to inpatient days.

Table 1: Characteristics of Hospitals in the U.S., AF4Q Communities, and Non-AF4Q Communities

	U.S.	AF4Q	Non-AF4Q
Number of Hospitals	4,492	513	3,979
Ownership			
Not-For-Profit	60%	81%	58%
Private-For-Profit	15%	5%	16%
Public	24%	13%	26%
Size			
Large (300 or more beds)	17%	18%	17%
Medium (100-299 beds)	35%	35%	35%
Small (Less than 100 beds)	48%	47%	48%
Location			
Urban	56%	63%	55%
Suburban	19%	13%	19%
Rural	26%	24%	26%
Teaching and System Status			
Member of the Council of Teaching Hospitals (COTH)	6%	8%	6%
System Member	54%	55%	54%
Nurse Staffing Ratio			
Nurses per 1000 Patient Days	7.57	8.11	7.50

Source: 2007 American Hospital Association's Annual Survey

Community Orientation and Collaboration

Because of the AF4Q program's focus on developing a community-level infrastructure to improve quality, we examined the level of community orientation (CO) of hospitals in AF4Q communities compared with hospitals in the rest of country. Originally proposed by Proenca (1998), CO is defined as the "organization-wide generation, dissemination, and use of community intelligence to address present and future community health needs." Community orientation distinguishes itself from direct patient care by focusing on prevention (e.g., screening and education activities), collection of community health information, and collaboration with other key organizations, such as schools, religious institutions, and government agencies. The degree of a hospital's CO is influenced by many factors, such as environmental pressures and hospital characteristics. For example, Proenca et al. (2000)

found that large, not-for-profit health system or network hospitals demonstrate a greater commitment to CO and that hospitals with a strong commitment to CO tend to offer more health promotion services, even after controlling for the characteristics of the community (Ginn and Moseley, 2004).

To measure community orientation, we combined eight questions from the AHA Annual Survey to create a CO score (see insert). On a scale of 0-8 (0 = no commitment to CO, 8 = high commitment to CO), we defined "High" commitment as having a score of 7 or 8 and "Medium" commitment as having a score of between 4 and 6; hospitals with a CO score less than 4 were considered "Low" commitment. Table 2 displays the distribution of hospitals in AF4Q and non-AF4Q communities based on their commitment to CO activities. Overall, hospitals in AF4Q communities were more likely to have a "High" commitment to CO activities and less likely to have a "Low" commitment compared with hospitals in non-AF4Q communities (49% vs. 39% and 13% vs. 22%). Between and within AF4Q alliance communities, there was considerable variation in the level of hospital CO.

Hospitals are awarded a point for every positive response to the following questions.

Does the hospital...

1. Provide a specific budget for Community Benefit Activities?
2. Dedicate staff to manage Community Benefit Activities?
3. Provide support for Community Building Activities?
4. Provide financial contributions to community programs?
5. Work with others to conduct a Community Health Assessment?
6. Work with others to develop a capacity assessment?
7. Work with others to collect and track health info across organizations?
8. Disseminate Quality Reports?

Table 2: Hospital Community Orientation Commitment by AF4Q Community and Non-AF4Q Community

	Commitment to Community Orientation		
AF4Q Alliance	**Low (0-3)**	**Medium (4-6)**	**High (7-8)**
Cincinnati	0%	43%	57%
Cleveland	0%	0%	100%
Detroit	10%	28%	63%
Kansas City	5%	32%	64%
Maine	6%	53%	42%
Minnesota	19%	50%	31%
Puget Sound	16%	32%	53%
West Michigan	6%	38%	56%
Western New York	33%	13%	53%
Willamette Valley	8%	28%	64%
Wisconsin	18%	41%	40%
All AF4Q Alliances*	13%	38%	49%
Non-AF4Q Hospitals	22%	39%	39%

Source: 2007 AHA Annual Survey Data.*Includes hospitals in Albuquerque, Boston, Humboldt County, Memphis, and South Central PA.

Safety Net Status

Vulnerable patient populations such as racial/ethnic minorities are more likely to be seen in safety net hospitals where they may be less likely to receive recommended care (Hasnain-Wynia et al., 2007 and 2010). Studies have shown that hospitals that serve vulnerable populations tend to have lower performance scores compared with other hospitals and they also show smaller gains in performance over time (Werner et al., 2008). However, a challenge to investigating quality of care at safety net hospitals is the absence of a standard method for identifying safety net hospitals, especially given that they are a heterogeneous group (McHugh et al., 2009). Depending on the safety net definition used, quality of care may vary.

We used three different approaches for identifying safety net hospitals: (1) the hospital's provision of uncompensated care (UC); (2) percentage of Medicaid patients; and (3) percentage of minority patients admitted for AMI, HF, and PN. Hospitals in AF4Q communities were less likely to be safety net providers across multiple definitions of safety net status (Table 3). Only 10% of hospitals in AF4Q communities provide a great deal of uncompensated care compared with 16% of hospitals in non-AF4Q communities. Although hospitals in both AF4Q and non-AF4Q communities provide a similar amount of care to the Medicaid population (12% vs. 13%), only 1% of hospitals in AF4Q communities (vs. 4% in the rest of the country) serve a very high percentage of minority patients, and only 9% of hospitals in AF4Q communities (vs. 22% in the rest of the U.S.) are in the "Medium" category for serving minority patients. Although hospitals in AF4Q communities are more likely to be located in urban areas, they are less likely to serve a high percentage of minority patients. Overall, only 11% of hospitals in AF4Q communities meet any of the safety net definitions (vs. 18% in the rest of the U.S.). Because safety net hospitals often present the best opportunity to improve health care for underserved populations, such as racial and ethnic minorities, it is important to recognize the smaller number of safety net hospitals in AF4Q communities.

Table 3: Safety Net Status of Hospitals in the U.S., AF4Q Communities, and Non-AF4Q Communities

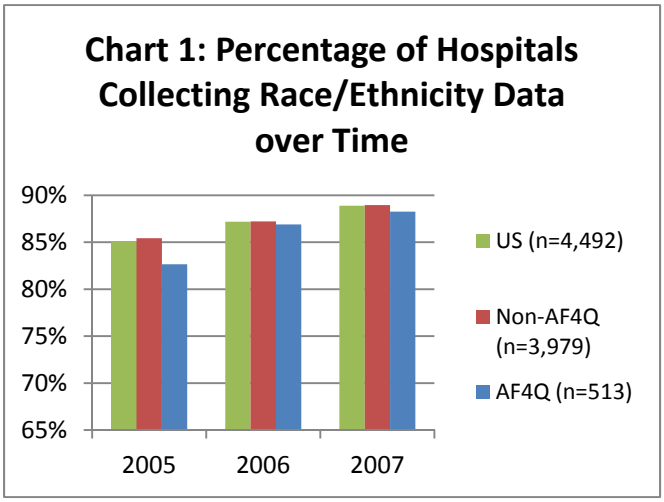
	U.S. Hospitals		AF4Q Hospitals		Non-AF4Q Hospitals	
	Number	%	Number	%	Number	%
Uncompensated Care Burden						
High Uncompensated Care*	694	15%	55	10%	639	16%
Low Uncompensated Care	3,798	85%	458	90%	3,340	84%
Medicaid Burden						
High Medicaid Burden	597	13%	62	12%	535	13%
Low Medicaid Burden	3,895	87%	451	88%	3,444	87%
Minority Hospital**						
High Minority	142	3%	7	1%	135	4%
Medium Minority	875	21%	43	9%	832	22%
Low Minority	3,216	76%	456	90%	2,760	74%
Any Safety Net***						
Yes	788	18%	58	11%	730	18%
No	3704	82%	466	89%	3238	82%

Source: 2007 AHA Annual Survey Data and 2008 CMS Hospital Quality Alliance Data. *High Uncompensated Care safety net hospitals either provide a large amount of UC relative to their total expenses, or provide a large amount of UC in their market, or both. **2008 CMS Hospital Quality Alliance Data. Minority hospital status is based on the percentage of minority patients admitted for AMI, HF, and PN. "High" minority hospitals are in the top 5%, "Medium" hospitals are the rest of the top quartile, and "Low" hospitals are all other hospitals. ***Hospitals that meet any of the three safety net definitions

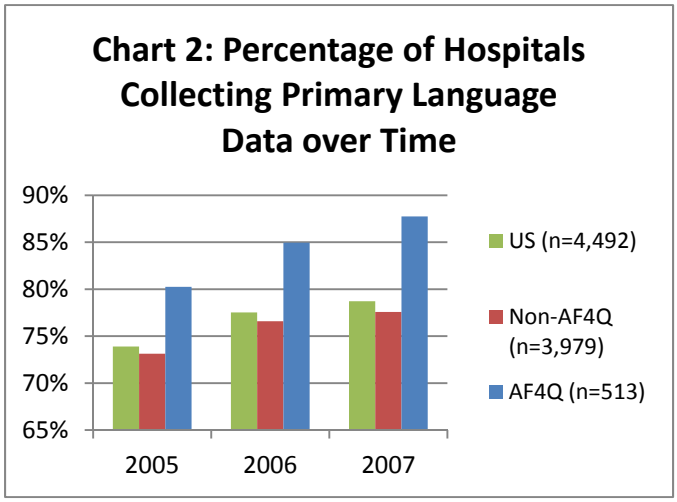
Race, Ethnicity, and Primary Language Data Collection by Hospitals

As communities become more diverse, hospitals are challenged to design and implement programs to reduce disparities and improve quality of care (Ver Ploeg and Perrin, 2004). It is well recognized that valid and reliable race, ethnicity, and primary language data are fundamental building blocks for identifying differences in care and developing targeted interventions to improve quality for specific populations to reduce disparities. There have been clear calls to action to systematically collect data on patients' race, ethnicity, and language; identify disparities where they exist; and tailor interventions to reduce them. The systematic and standardized collection and use of race, ethnicity, and primary language data are critical activities that hospitals in AF4Q communities are expected to engage in as a foundation for targeting disparities in care.

Comparing hospitals in AF4Q communities with their non-AF4Q counterparts, Charts 1 and 2 display the percentage of hospitals that collected race, ethnicity, and primary language data from 2005 to 2007. Overall, the collection of race/ethnicity data is increasing over time and, while hospitals in AF4Q communities were slightly less likely to collect race/ethnicity data in 2005 (83% vs. 85%), they closed the gap with the rest of the country by 2006. The percentage of hospitals collecting primary language information also has increased, but hospitals in AF4Q communities are more likely to collect primary language data than hospitals in non-AF4Q communities (88% vs. 78%).



Source: 2007 AHA Annual Survey Data

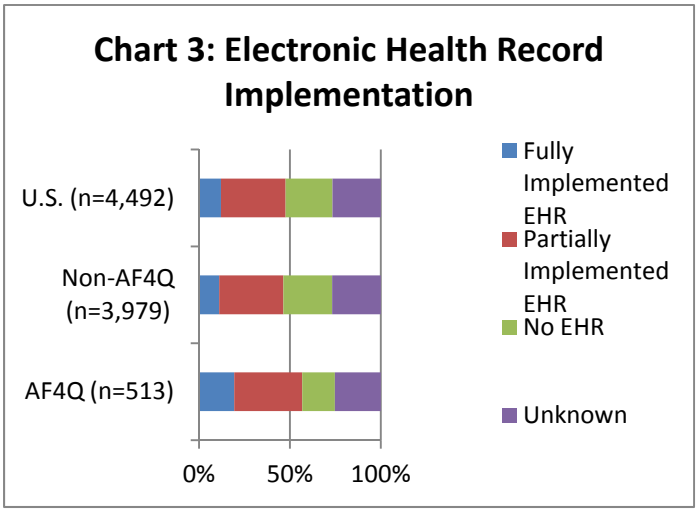


Source: 2007 AHA Annual Survey Data

Electronic Health Records

According to Jha, et al. (2010), the number of U.S. hospitals that have adopted electronic health records (EHRs) has increased modestly from 2008 to 2009 (9% to 12%) with large, private, and urban hospitals more likely to adopt EHRs. Small, public, and rural hospitals are further behind in adoption, and gaps are widening. Centers for Medicare & Medicaid Service created EHR incentive programs to increase the adoption of EHRs (http://www.cms.gov/EHRIncentivePrograms/30_Meaningful_Use.asp); for certain hospitals, the incentives may not be enough or the meaningful use criteria may be too difficult to meet. These conditions could expand the digital divide (i.e., the gap between individuals and communities that have, and do not have, access to information technologies that are improving the delivery of care), particularly for under-resourced or safety net hospitals, and therefore increase health care disparities.

Chart 3 presents information on the implementation of EHRs for hospitals in AF4Q and non-AF4Q communities. Compared with the rest of the U.S., hospitals in AF4Q communities are more likely to have a fully implemented EHR (19.3% vs. 11.0%) and slightly more likely to have a partially implemented EHR (37.4% vs. 35.4%).



Source: 2007 AHA Annual Survey Data

Patient Experience and Processes of Care

The Aligning Forces for Quality program places a strong emphasis on publicly reporting data to consumers and patients to help them make informed choices about their health care. Almost all hospitals in the AF4Q communities are publicly reporting patient experience of care and process of care measures for specific conditions. We present some of the publicly reported measures to give a sense of how differences in hospital characteristics may potentially translate into differences in quality and health care disparities.

Patients' experience of the care they receive is a marker of quality; the Hospital Consumer Assessment of Healthcare Providers and Systems Survey (HCAHPS) provides information on patients' experience with hospital care in the United States. The purpose of the HCAHPS Survey is to facilitate comparisons of patient experience of care across hospitals, create incentives for hospitals to improve quality, and increase the transparency of information.

A recent study found that non-Hispanic White inpatients receive care at hospitals that provide better experiences for all patients than hospitals that more often care for minority patients (Goldstein et al., 2010). In Table 4 below, we provide hospitals' patient experience data based on their percentage of minority patients and their location (AF4Q or non-AF4Q community). Compared to hospitals with a low number of minorities, patients in hospitals with a high percentage of minority patients are less likely to recommend the hospital (57.0% vs. 68.0%) and are less likely to rate it favorably (54.1% vs. 64.4%). Comparing hospitals in AF4Q communities with hospitals in a non-AF4Q location, patients are more likely to recommend the hospital (69.3% vs. 66.6%) and are more likely to rate it favorably (65.8% vs. 62.9%).

Table 4: 2008 Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) Scores by Percentage of Minority Patients and Location within AF4Q and non-AF4Q communities

	Number	% Patients definitely recommend Hospital	% Patients rate Hospital 9 or 10 out of 10
All Hospitals	4,492	66.9%	63.3%
% Minority Patients			
High	139	57.0%	54.1%
Medium	863	64.2%	60.3%
Low	3,188	68.0%	64.4%
Location			
AF4Q	513	69.3%	65.8%
Non-AF4Q	3,979	66.6%	62.9%

Source: 2008 HCAHPS data. Minority hospital status is based on the percentage of minority patients admitted for AMI, HF, and PN. "High" minority hospitals are in the top 5%, "Medium" hospitals are the rest of the top quartile, and "Low" hospitals are all other hospitals.

Through CMS, the Hospital Quality Alliance routinely collects and reports data on hospitals' performance on process of care measures for AMI, HF, and PN, and we report the results in Table 5. Hospitals with a high percentage of minority patients have the lowest performance scores, and hospitals in AF4Q communities have better performance across all conditions.

Table 5: 2008 Hospital Quality Alliance (HQA) Scores by Percentage of Minority Patients and Location within AF4Q and non-AF4Q communities

	Number	AMI	HF	PN
All Hospitals	4,492	91.4%	83.1%	89.6%
% Minority Patients				
High	139	89.0%	82.0%	84.6%
Medium	863	92.2%	85.1%	88.6%
Low	3,188	91.3%	82.8%	90.2%
Location				
AF4Q	513	94.3%	85.5%	91.1%
Non-AF4Q	3,979	91.0%	82.8%	89.4%

Source: 2008 CMS Hospital Quality Alliance Data. Minority hospital status is based on the percentage of minority patients admitted for AMI, HF, and PN. "High" minority hospitals are in the top 5%, "Medium" hospitals are the rest of the top quartile, and "Low" hospitals are all other hospitals.

Discussion

Based on a variety of factors associated with quality of care, such as size, teaching status, percentage of Medicaid patients, and collection of race/ethnicity data, hospitals in Aligning Forces for Quality communities are similar to hospitals in the rest of the country. Along other dimensions, hospitals in AF4Q communities are quite different; for example, even though they are less likely to provide a large amount of uncompensated care, they are more likely to: (1) contribute resources and collaborate on community level health care improvement initiatives, (2) collect primary language data, (3) have electronic health records, and (4) have better performance on patient experience scores and process of care measures for acute myocardial infarction (AMI), heart failure (HF), and pneumonia (PN). Despite the fact that hospitals in AF4Q communities are more likely to be located in an urban area, they are less likely to serve minority patients compared with other hospitals in the U.S, which is important to note given the AF4Q initiative's focus on reducing racial and ethnic disparities in care. While hospitals in AF4Q communities are similar in many ways, the aggregate picture can mask substantial variation within and between hospitals, as demonstrated by the distribution of CO activities.

This research summary provides a basic comparison of hospitals in AF4Q vs. non-AF4Q communities, across specific dimensions. Since AF4Q communities were not randomly selected nor were they intended to be exactly representative of the entire country (e.g., to participate in the initiative, AF4Q grantee communities were required to provide evidence of prior multi-stakeholder collaboration to improve quality of care in their communities), it is not surprising that hospitals in AF4Q communities have a head start over those in non-AF4Q locations. In the program evaluation, it is important to account for these factors when measuring the progress of AF4Q communities and comparing them with the rest of the country.

Our results indicate that communities that are intent on improving overall quality of care and reducing disparities, specifically those working across multi-stakeholder collaborations, must recognize the context in which these efforts are taking place and how context can influence progress and potential comparisons. The context provided here comes from data aggregated across all hospitals in AF4Q communities. These data show that it is important to consider how characteristics and contexts of hospitals in AF4Q communities vary from other hospitals in the country and, as the promising practices learned from AF4Q are disseminated, to maintain a realistic attitude toward the implementation of these practices in other locations.

This report was prepared by the Aligning Forces for Quality Evaluation Team which is studying the AF4Q initiative to gain insights about community-based reform that can guide health care practice and policy. The AF4Q Evaluation Team presents periodic research summaries on key findings and policy lessons gleaned from its ongoing mixed-method evaluation of the AF4Q program.

For more information about the AF4Q Evaluation Team -

(http://www.hhdev.psu.edu/CHCPR/alignforce/)

References

Bazzoli GJ, Clement JP, Lindrooth RC, Chen HF, Aydede SK, Braun BI, and Loeb JM, 2007. Hospital Financial Condition and Operational Decisions Related to the Quality of Hospital Care. *Medical Care Research and Review.* 64(2):148.

Ginn GO, and Moseley CB, 2004. Community Health Orientation, Community-based Quality Improvement, and Health Promotion Services in Hospitals. *Journal of Healthcare Management.* 49(5): 293-306.

Goldstein E, Elliott MN, Lehrman WG, Hambarsoomian K, and Giordano LA, 2010. Racial/ethnic Differences in Patients' Perceptions of Inpatient Care Using the HCAHPS Survey. *Medical Care Research and Review.* 67(1):74-92.

Hasnain-Wynia R, Baker DW, Nerenz D, Feinglass J, Beal AC, Landrum MB, Behal R, and Weissman JS, 2007. Disparities in Health Care are Driven by Where Minority Patients Seek Care: Examination of the Hospital Quality Alliance Measures. *Archives of Internal Medicine.* 167(12): 1233-9.

Hasnain-Wynia R, Kang R, Landrum MB, Vogeli C, Baker DW, and Weissman JS, 2010. Racial and Ethnic Disparities within and between Hospitals for Inpatient Quality of Care: An Examination of Patient-Level Hospital Quality Alliance Measures. *Journal of Health Care for the Poor and Underserved.* 21(2010): 629-648.

Jha AK, 2007. Concentration and Quality of Hospitals that Care for Elderly Black Patients. *Archives of Internal Medicine.* 167(14): 1177-1182.

Jha AK, DesRoches CM, Kralovec PD, and Joshi MS, 2010. A Progress Report on Electronic Health Records in U.S. Hospitals. *Health Affairs.* 29(10): 1951-7.

Kane RL, Shamliyan TA, Mueller C, and Wilt TJ, 2007. The Association of Registered Nurse Staffing Levels and Patient Outcomes: Systematic Review and Meta-analysis. *Medical Care.* 45(12): 1126-8.

McHugh M, Kang R, and Hasnain-Wynia R, 2009. Understanding the Safety Net: Inpatient Quality of Care Varies Based on How One Defines Safety-Net Hospitals. *Medical Care Research and Review.* 66(5): 590-605.

Painter and Lavizzo-Mourey, 2008. Aligning Forces for Quality: A Program to Improve Health and Health Care in Communities across the United States. *Health Affairs.* 27(5): 1461.

Proenca, 1998. Community Orientation in Health Services Organizations: The Concept and Its Implementation. *Health Care Management Review.* 23(2): 28-38.

Proenca EJ, Rosko MD, and Zinn JS, 2000. Community Orientation in Hospitals: An Institutional and Resource Dependence Perspective. *Health Services Research.* 35(5 Pt 1): 1011-35.

Vogeli C, Kang R, Landrum M, Hasnain-Wynia R, and Weissman J, 2009. Quality of Care Provided to Individual Patients in U.S. Hospitals-Results from an Analysis of National Hospital Quality Alliance Data. *Medical Care.* 47(5): 591-99.

Ver Ploeg and Perrin, 2004. *Eliminating Health Disparities: Measurement and Data Needs.* National Research Council: The National Academies Press.

Werner RM, Goldman LE, and Dudley RA, 2008. Comparison of Change in Quality of Care between Safety-net and Non-safety-net Hospitals. *Journal of the American Medical Association.* 299: 2180-2187.