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Hospital Payer and Racial/ethnic Mix at Private Academic Medical Centers in Boston and New York City

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Abstract

Academic medical centers (AMCs) are widely perceived as providing the highest-quality medical care. To investigate disparities in access to such care, we studied the racial/ethnic and payer mixes at private AMCs of New York City (NYC) and Boston, two cities where these prestigious institutions play a dominant role in the health care system. We used individual-level inpatient discharge data for acute care hospitals to examine the degree of hospital racial/ethnic and insurance segregation in both cities using the Index of Dissimilarity, together with recent changes in patterns of care in NYC. In multivariable logistic regression analyses, black patients in NYC were two to three times less likely than whites, and uninsured patients approximately five times less likely than privately insured patients, to be discharged from AMCs. In Boston, minorities were overrepresented at AMCs relative to other hospitals. NYC hospitals were more segregated overall according to race/ethnicity and insurance than Boston hospitals, and insurance segregation became more pronounced in NYC after the Affordable Care Act. Although health reform improved access to insurance, access to AMCs remains limited for disadvantaged populations, which may undermine the quality of care available to these groups.

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Declaration of Conflicting Interests

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Supplemental Material

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Prior Presentations

A poster presentation of this study was presented at the Academy Health Annual Research Meeting in Boston, Massachusetts, in June 2016 and at the Society of General and Internal Medicine Annual Meeting in Hollywood, Florida, in May 2016.

Keywords

disparities; access to care; hospitals; health reform; segregation; Medicaid; uninsured; race

Introduction

Academic medical centers (AMCs) play a unique role in the U.S. health care system. These institutions, which typically comprise a medical school and a closely affiliated teaching hospital, train health professionals, conduct research, and provide patient care.^{1,2} AMCs are often among the largest hospitals in their service areas: despite representing only 5% of the nation's hospitals,³ combined, they account for one-fifth of the total hospital volume in the United States.⁴ AMCs typically serve a medically complex patient population and provide specialized expertise across a range of clinical areas.⁵ Many AMCs are ranked among the top hospitals in the country, and patients treated at AMCs are more likely than other patients to receive treatments using the latest technologies^{6,7} and care adhering to current clinical guidelines.^{8,9}

For these reasons, AMCs are often recognizable brands and attract referrals from nearby counties, states,¹⁰ and, increasingly, from other countries as well.¹¹ At the same time, many AMCs are key safety-net providers in their communities and have historically provided approximately one-third of all charity care and one quarter of all Medicaid hospitalizations.^{3,4} Yet, recent reports raise concern that uninsured and Medicaid patients face barriers to obtaining care at AMCs.¹²⁻¹⁴

Racial and ethnic minorities, who are more frequently uninsured or covered by Medicaid than other Americans,^{15,16} often encounter access barriers. Unequal access to high-quality health facilities, including AMCs, is recognized as a contributor to racial and ethnic health disparities.¹⁵ Previous studies have reached conflicting conclusions about whether minority patients are underrepresented at AMCs nationally.¹⁷⁻¹⁹

We analyzed the racial/ethnic and payer mixes of inpatients discharged from AMCs in Boston and New York City (NYC), two cities where prestigious AMCs play a dominant role in the health care system. We also investigated whether the share of minority and uninsured/Medicaid inpatients at NYC's AMCs has changed since the implementation of the Affordable Care Act (ACA). Finally, we report on the degree of hospital segregation according to patient race/ethnicity and insurance status in the two cities.

Methods

Study Design and Data

We analyzed the race/ethnicity and insurance coverage of adult (18 years old) inpatients discharged from private AMCs (see definition below) and other hospitals in NYC in 2014 and 2009 and in Boston in 2009. For NYC, we used data from the Statewide Planning and Research Cooperative System (SPARCS) database. For Boston, we obtained all-payer discharge data from the Massachusetts Center for Health Information and Analytics (CHIA). (See Part A in Supplementary Material for a list of the hospitals in our samples.) Both of

these databases include comprehensive discharge data for all payers and are the basis for the data included in the national State Inpatient Database administered by the Agency for Healthcare Research and Quality (AHRQ).

The Boston University Medical Campus (#H-29304), Cambridge Health Alliance, and Hunter College Institutional Review Boards approved the study protocol.

Variables and Definitions

We defined private AMCs as privately owned hospitals listed as “integrated” members of the Council of Teaching Hospitals, together with their affiliated hospitals. AMCs in NYC included: Hospital for Special Surgery, Memorial Sloan-Kettering Hospital for Cancer, Montefiore Medical Center’s Jack D. Weiler Hospital of the Albert Einstein College of Medicine and Henry and Lucy Moses Divisions, Mount Sinai Medical Center, New York University (NYU) Hospital for Joint Diseases, NYU Langone Medical Center/Tisch Hospital, New York Presbyterian (NYP) Columbia University Medical Center, NYP Weill Cornell Medical Center, and Long Island Jewish Medical Center (an AMC only in 2014). In Boston, AMCs included: Beth Israel Deaconess Medical Center, Boston Medical Center, Brigham and Women’s Hospital, Massachusetts General Hospital, Tufts Medical Center, and Dana Farber Cancer Institute. Other non-AMC hospitals included private nonprofit hospitals, public hospitals, and for-profit hospitals (Boston only), some of which are teaching hospitals but without AMC designation (see Part A in Supplementary Material for a full list of non-AMC hospitals). We performed sensitivity analyses where we reclassified Boston Medical Center (which meets our definition of a private AMC) as a non-AMC, due to its unique history and role (see Part D, Sensitivity Analysis 2, in Supplementary Material). Boston Medical Center was formed by the 1996 merger of a private AMC and a public hospital, and it remains the largest safety-net hospital in Boston.

We categorized patient race/ethnicity as “white” (non-Hispanic), “black,” or “other minority” (see Supplementary Material Tables A4 and A5). Hospitals in both cities inconsistently classified Hispanic patients (some reported zero Hispanic discharges and large numbers of “other” minority patients), precluding reliable analyses of Hispanics. Hence, in our main analyses, we classified patients identified as “white Hispanic” as “other minority” and “black Hispanic” as “black.” We conducted sensitivity analyses that treated Hispanic patients (of any race) as a separate racial/ethnic group (see Part B in Supplementary Material).

For discharges from NYC hospitals, we used the primary and secondary expected payment sources to determine patients’ insurance coverage, since some NYC hospitals listed “private insurance” as the primary payer for patients covered by Medicaid managed care plans, with “Medicaid” listed as the secondary payer. A detailed description of our payer classification scheme is presented in Part A in Supplementary Material.

For discharges from Boston hospitals, we defined patient insurance status using only the primary expected source of payment, which identified all Medicaid discharges, including those covered by managed care plans. We also classified patients covered by Commonwealth Care, (the state-sponsored means-tested health insurance option in Massachusetts) as having

Medicaid coverage. Because Massachusetts had a special fee-for-service reimbursement system in 2009 called the “free care pool,” which compensated hospitals for the care of otherwise uninsured patients,²⁰ we classified “free care” as “other insurance.” Only “self-pay” patients were classified as uninsured. We performed sensitivity analyses where “free care” patients were classified as “uninsured” (see Part D in Supplementary Material).

We analyzed patient age in the following categories (the age categories available in the SPARCS data): 18–29 years, 30–49 years, 50–69 years, and 70 years and older. For further details on variable definitions and classifications, please see Part A in Supplementary Material.

Statistical Analyses of Hospital Racial/Ethnic and Payer Mix

First, we compared the racial/ethnic and insurance mixes of AMC and non-AMC hospitals in each city using Pearson’s chi-square tests.

We then performed patient-level multivariable logistic regression analyses to explore the likelihood of being hospitalized in an AMC (vs. non-AMC) for black and other minority patients, relative to whites, after controlling for patient insurance, sex, and age. We performed similar analyses comparing the likelihood of Medicaid/uninsured vs. privately insured patients being hospitalized in an AMC. We carried out separate analyses for each city for each year of available data (2009 and 2014 for NYC, 2009 for Boston).

All analyses were performed using STATA software version 11.0 (StataCorp, College Station, TX, USA).

Index of Dissimilarity

In addition, we quantified the degree of segregation of minority (black, other minority) and Medicaid/uninsured patients across all hospitals in each city and data year using the Index of Dissimilarity.²¹ This index compares the evenness of distribution of two mutually exclusive groups (e.g., white vs. black, white vs. other minority, or private vs. other insurance) across hospitals and represents the proportion of the two populations that would need to shift in order to create an equal distribution in every hospital (see further details in Part A in Supplementary Material). In the social science literature on segregation, much of which focuses on schools and residential patterns, a value over 0.6 is generally considered a high degree of segregation; 0.3–0.6 is considered moderate; and below 0.3 is considered low. Because a number of NYC hospitals reported 20% of discharges with race/ethnicity data missing (NYC 2014 n=7/54; NYC 2009 n=4/58), we conducted sensitivity analyses excluding these hospitals (see Part C in Supplementary Material).

Results

The effect of race/ethnicity and payer on the likelihood of being discharged from an AMC in NYC and Boston

Table 1 summarizes the characteristics of patients hospitalized at AMCs and non-AMCs. In NYC, AMC patients were older and more likely to be white and privately insured, compared to patients at other hospitals. In Boston, AMC patients were younger, more likely to be

privately insured, and less likely to be white, relative to other hospitals' patients. The increase in the proportion of "other minorities" observed from 2009 to 2014 (6.7% for AMCs; 5.8% for non-AMCs) was due to an increase in discharges classified as having "other" race and "not Spanish/Hispanic" ethnicity (12% of total patient volume in 2009, compared to 18.3% in 2014).

Table 2 summarizes results from multivariable logistic regression analyses of predictors of hospitalization at an AMC versus other hospitals. Race/ethnicity was a significant predictor of AMC hospitalization in both cities, but with opposite effects. In Boston, black patients were much more likely, and other minorities somewhat more likely, to be hospitalized at an AMC than white patients, after adjusting for insurance status, age, and gender. In contrast, in NYC in 2009, white patients were approximately three times more likely than blacks, and somewhat more likely than other minorities, to be hospitalized at an AMC. This pattern persisted after ACA implementation in 2014, when whites were still more than twice as likely as blacks to receive care at an AMC.

In sensitivity analyses that classified discharges from Boston Medical Center as non-AMC, the odds of being discharged from an AMC for black patients relative to white patients reversed, with black patients about 40% less likely than whites to be discharged from an AMC (OR 0.59, $p < 0.001$; see Part D in Supplementary Material, for the full details of this analysis). However, other minorities remained slightly more likely than whites to be discharged from an AMC (OR 1.10, $p < 0.001$).

In both cities, Medicaid and uninsured patients were less likely than privately insured patients to be hospitalized at an AMC. In NYC, Medicaid patients were less than half as likely, and uninsured patients less than one-quarter as likely, as privately insured to receive care at an AMC. These differences were more marked in 2014, when Medicaid patients were about one-third as likely, and uninsured patients were about one-fifth as likely, as those with private insurance to be hospitalized at an AMC.

In Boston, the moderate underrepresentation of Medicaid and uninsured patients found in our main analysis became more pronounced in sensitivity analyses that re-classified discharges from Boston Medical Center as non-AMC discharges. In those sensitivity analyses, the gap between Medicaid and privately insured patients was similar to that in NYC, although the underrepresentation of the uninsured at AMCs remained less marked than in NYC.

System-Wide Segregation as Measured by the Index of Dissimilarity

Hospital racial/ethnic segregation, as measured by the Index of Dissimilarity, was moderately high in NYC for blacks (0.54 in 2009) and moderate for other minorities (0.41). These indices suggest that 54% of black patients and 41% of other minority patients would need to shift in order to achieve an equal distribution of patients by race and ethnicity at NYC hospitals. The Dissimilarity Index was markedly lower in Boston for both minority categories (Table 3). By 2014, hospital racial segregation in NYC decreased very slightly for black patients, but not for other minorities. The less reliable figures for segregation of

Hispanics suggest quite high levels of segregation in both cities (see Part B in Supplementary Material).

Payer segregation of uninsured from privately insured patients in NYC was moderately high in 2009 (0.54) and increased (to 0.59) by 2014, but was relatively low (0.22) in Boston. Uninsured patients were more segregated than Medicaid patients in NYC, while the opposite pattern was noted for Boston. Medicaid segregation was moderate in both cities, but slightly higher in NYC, where it remained stable between 2009 and 2014.

Uninsured patients in NYC were concentrated in a small number of hospitals: one-third of hospitals (with about one-third of total discharges) accounted for two-thirds of the uninsured discharges in 2009 (data not shown).

Uninsured discharges were even more concentrated in 2014, when one-quarter of hospitals (with about one-quarter of total discharges) cared for two-thirds of all uninsured inpatients (data not shown). In contrast, in Boston, hospitals that represented about two-thirds of total discharges also accounted for about two-thirds of uninsured discharges (data not shown).

Discussion

Our analyses of adult hospital discharges indicate that minority, uninsured, and Medicaid patients are strikingly underrepresented at NYC's private AMCs. This pattern has not improved—and, regarding insurance status—became even more pronounced after the passage of the ACA. In contrast, care was less segregated according to both race/ethnicity and insurance in Boston. Indeed, minorities were slightly overrepresented, although Medicaid and uninsured patients were underrepresented, at Boston's AMCs.

Financial pressures may lead AMCs in both cities to minimize the care they provide to non- or low-paying uninsured and Medicaid patients, particularly since Medicaid reimbursement rates remain relatively low. These pressures may intensify as the number of high-paying commercially insured patients shrinks¹¹ and as the ACA phases down federal Disproportionate Share Hospital (DSH) payments (supplementary funding for hospitals caring for many Medicaid and low-income patients).²² However, differences in insurance coverage did not fully account for the striking underrepresentation of black patients at NYC AMCs; racial/ethnic disparities in patient mix between AMCs and other hospitals in NYC persisted after adjusting for patients' insurance. A recent analysis of U.S. hospitals found that AMCs that are considered safety-net hospitals had higher operating margins than other safety-net hospitals, even after accounting for payer mix.²³ Financial considerations are therefore unlikely to explain the relatively low volumes of Medicaid and uninsured patients observed at NYC and Boston AMCs.

What explains the greater racial/ethnic and payer segregation in NYC's AMCs relative to Boston's? First, the extensive network of public hospitals in NYC relieves pressure on that city's private AMCs to care for disadvantaged patients, allowing AMCs there to focus on serving as referral centers for privately insured patients living in predominantly white, suburban communities. In contrast, only one relatively small public hospital remains in the Boston area. Second, AMCs in Boston may be less resistant to integrating the comparatively

small number of minority and uninsured patients in that city. Finally, Boston Medical Center, a private AMC that incorporates a previously public hospital, continues to serve many poor and black patients. As shown in our sensitivity analyses, this institution had a large impact on our findings regarding racial segregation; re-categorizing it as a non-AMC changed our results, with black patients less likely to be seen at an AMC than at other hospitals in Boston. We believe the hospital merger resulted in a real decrement in the degree of segregation of care in Boston, rather than creating an artefact of classification or measurement. Indeed, mergers (and the full integration of services) of private AMCs and nearby public hospitals in NYC might be one possible route to desegregating hospital care by insurance status and race, although we would advocate an ongoing role for public governance in any such merger.

Our findings that racial/ethnic minorities are overrepresented at Boston AMCs are consistent with those of a recent study of orthopaedic care in that city.²⁴ A study using 1993 data found a somewhat lower level of racial segregation using the Index of Dissimilarity among Medicare patients in New York State than we found among all adult patients in NYC, but a higher index for Massachusetts than our estimate for Boston.²⁵ An analysis of Medicare patients with acute myocardial infarction using 2004–2005 data for 105 hospital market areas found that nearly half of hospital markets in the Northeast had a moderately high level of segregation as measured by the Index of Dissimilarity (0.42 or higher for black-white segregation), with somewhat lower indices in the South and documented low revascularization rates for blacks.²⁶ Although the degree of housing segregation was correlated with hospital segregation, it explained only half of the observed variance.²⁶ An analysis of residential segregation using 2010 census tract data showed that black-white and Hispanic-white Indices of Dissimilarity were higher in the NYC metropolitan area compared to the Boston metropolitan area.²⁷ Hence, the higher degree of hospital segregation in NYC compared to Boston may partly reflect residential segregation.

Previous studies have documented access barriers for minorities, uninsured, and Medicaid patients at AMCs in NYC, as well as public hospitals' outsized role in their care.¹⁹ These findings led the New York Lawyers for the Public Interest to file a civil rights complaint in 2008 alleging that three NYC AMCs discriminated on the basis of insurance and race—a complaint that then-Attorney General Andrew Cuomo declined to pursue.²⁸ In 2011, the Health Disparities Workgroup commissioned by (now) Governor Cuomo urged the state Department of Health to address disparities in care at NYC AMCs by patient insurance status.²⁹

The case for desegregation is morally and medically compelling. Disparities in access to high-performing health facilities contribute to racial/ethnic disparities in both quality of care³⁰ and health outcomes.¹⁵ Ensuring equal access to health facilities is a stated policy priority of both federal³¹ and NYC authorities.³²

Virtually all private AMCs are tax-exempt and hence required to provide community benefits. Although a recent analysis estimated the average value of hospital tax exemptions per hospital at \$10 million in New York State and \$21 million in Massachusetts in 2011,³³

these statewide figures undoubtedly understate the tax exemptions accorded the very large AMCs situated in NYC's and Boston's expensive real estate markets.

Initially, the Internal Revenue Service used nonprofit hospitals' provision of charity care to underinsured and uninsured individuals to assess whether the community benefit they provided was sufficient to warrant granting them tax-exempt status.³³ Federal regulators have subsequently allowed hospitals to expand the definition of community benefits to include research and health professions training programs—even when such activities are adequately compensated by Medicare and grant payments.³⁴ A handful of states specify minimum criteria—often tied to the level of care provided to uninsured and underinsured individuals—that hospitals must fulfil to retain property tax exemptions.³⁵ The low levels of care for Medicaid and uninsured patients reported by some AMCs in NYC (10% or less at one-third of them in 2014; data not shown) raises questions about the appropriateness of their claim to be providing substantial community benefits.

Although prosperous AMCs in NYC provide little care for minority and Medicaid/uninsured patients, some are aggressively pursuing international patient markets,^{11,36} and several regularly realize nine-figure operating surpluses. Meanwhile, the city's public hospitals are in dire financial straits.³⁷ These trends may presage widening disparities in inpatient care, with poor and minority patients increasingly consigned to care in under-resourced facilities.

There are undoubtedly errors in hospitals' racial/ethnic classification of their patients. However, unless NYC's AMCs undercount their minority patients far more frequently than other hospitals, such errors could not explain the racial/ethnic care patterns we observed. It is possible that that under-representation of minority and Medicaid/uninsured patients at AMCs in NYC reflects residential proximity, which we could not assess because the de-identified data we used did not include patient addresses. However, several of NYC's AMCs are located in or very near neighborhoods with large minority and Medicaid/uninsured populations, making it unlikely that lack of proximity explains the small numbers of minority and Medicaid/uninsured patients cared for in these hospitals.

Although our analyses controlled for patients' age and gender, we did not control for patients' diagnoses or severity of illness, and AMCs' focus on the care of patients with complex illnesses could skew their patient populations. However, we doubt that minority or Medicaid/uninsured patients have lower rates of complex illnesses that might explain their under-representation at NYC AMCs. Finally, our analysis encompasses only two cities; however, AMCs in these cities play an outsized role in academic medicine.

In summary, our analyses of inpatient discharges provide evidence that minority, uninsured, and Medicaid patients are markedly underrepresented at New York City AMCs and that the city's hospitals remain highly segregated by race/ethnicity and insurance. Several steps could ameliorate these inequalities. First, officials should assure adequate funding for the city's safety-net hospitals, altering the current allocation of the state's uncompensated care dollars that include DSH payments, as much of these funds continue to flow to hospitals that provide little care for Medicaid and uninsured patients.²⁹ Second, state authorities should challenge NYC AMCs' maintenance of separate clinical units for Medicaid patients and the

privately insured.²⁸ At the hospital level, faculty physicians should be required to accept patients regardless of insurance status. Third, officials could enforce requirements that AMCs that are governed as nonprofit, tax-exempt entities must deliver substantial amounts of free care as a condition for retaining their nonprofit status. States such as Illinois, Nevada, and Pennsylvania have already implemented such requirements.³⁵ In the longer term, the elimination of disparities in provider payment rates according to insurance status would be an important step toward ensuring equal access. Finally, AMCs and other hospitals must embrace efforts to end racial discrimination, including increased training of minority health professionals and other culture changes that make these critically important institutions more welcoming to minority professionals and patients.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Characteristics of Adults Discharged from Private Academic Medical Centers and Other Hospitals in New York City, 2009 and 2014, and Boston, 2009

Table 1

	NYC 2014			NYC 2009			Boston 2009		
	AMC (%)	Non-AMC (%)	p-value	AMC (%)	Non-AMC (%)	p-value	AMC (%)	Non-AMC (%)	p-value
Age (years)			<0.001			<0.001			<0.001
18-29	11.1	14.5		10.0	14.6		11.2	9.4	
30-49	24.5	26.8		24.7	28.4		27.4	21.4	
50-69	35.6	31.4		36.0	29.4		35.1	29.9	
70 and over	28.9	27.2		29.3	27.6		26.3	39.3	
Gender – female	58.5	56.6	<0.001	57.6	57.3	0.007	56.2	58.2	<0.001
Race/ethnicity*			<0.001			<0.001			<0.001
Black	18.3	31.3		17.1	33.0		13.9	8.0	
White	41.3	26.6		51.8	30.5		69.9	80.4	
Other Minority	37.7	35.1		31.0	29.3		9.1	8.6	
Missing/unknown	2.8	7.3		0.2	7.4		7.1	3.1	
Insurance			<0.001			<0.001			<0.001
Private	31.7	14.5		33.8	19.9		42.3	30.2	
Medicare	42.7	38.4		44.2	37.0		38.4	50.7	
Medicaid	22.5	42.1		19.7	37.3		14.6	14.4	
Uninsured	1.4	3.7		1.4	4.9		1.1	1.0	
Other	1.7	1.3		0.9	0.9		3.6	3.7	
Unknown	0.0	<0.1		<0.1	<0.1		0.0	0.0	
TOTAL, discharges (hospitals)	280,079 (10)	638,710 (44)		251,795 (9)	787,130 (49)		170,640 (6)	64,272 (7)	

Note: P-values represent level of significance for chi-square tests for different distributions between AMCs and non-AMC's.

AMC = Academic Medical Centers.

* Black includes black of any ethnicity; white reflects non-Hispanic whites only; other minority includes 'other race', 'white Hispanic', 'multi-ethnic white/other race'.

Adjusted Odds Ratios of Hospitalization at Private Academic Medical Centers in New York City, 2009 and 2014, and Boston, 2009

Table 2

	2014 NYC		2009 NYC		2009 Boston	
	AOR	95% CI	AOR	95% CI	AOR	95% CI
Age (years)						
18-29	Ref		Ref		Ref	
30-49	0.99	(0.97-1.002)	1.06	(1.04-1.08)	1.08	(1.04-1.12)
50-69	1.22	(1.20-1.24)	1.29	(1.26-1.31)	1.05	(1.01-1.09)
70 and over	0.99	(0.97-1.01)	0.84	(0.82-0.85)	0.73	(0.70-0.76)
Gender						
Female	1.08	(1.07-1.09)	1.03	(1.02-1.04)	0.87	(0.85-0.89)
Race/ethnicity*						
White	Ref		Ref		Ref	
Black	0.47	(0.46-0.48)	0.36	(0.35-0.36)	2.09	(2.02-2.16)
Other Minority	0.89	(0.88-0.90)	0.76	(0.75-0.77)	1.23	(1.19-1.28)
Insurance						
Private	Ref		Ref		Ref	
Medicaid	0.29	(0.28-0.29)	0.41	(0.41-0.42)	0.58	(0.56-0.59)
Uninsured	0.19	(0.19-0.20)	0.22	(0.21-0.23)	0.70	(0.63-0.77)
Medicare	0.55	(0.54-0.56)	0.86	(0.85-0.87)	0.67	(0.65-0.68)
Other	0.64	(0.61-0.66)	0.91	(0.86-0.95)	0.58	(0.55-0.62)

Note:

* 'Black' includes black of any ethnicity; 'white' reflects non-Hispanic whites only; 'other minority' includes 'other race', 'white Hispanic', 'multi-ethnic white/other race'.

AOR = Adjusted Odds Ratio of being discharged from an AMC, adjusted for age, gender, race/ethnicity and insurance coverage. CI = Confidence Interval. Ref = Reference category. Number of observations (discharges): 864,015 (NYC 2014), 980,575 (NYC 2009), 220,809 (Boston 2009).

Racial/ethnic and Payer Segregation as Measured by the Index of Dissimilarity Across All Hospitals in New York City, 2009 and 2014, and Boston, 2009

Table 3

Index of Dissimilarity					
Race/ethnicity* (relative to white)		Insurance (relative to private)			
Black	Other minority	Medicaid	Uninsured	Medicare	
NYC, 2014	0.52	0.41	0.44	0.59	0.26
NYC, 2009	0.54	0.41	0.44	0.54	0.22
Boston, 2009	0.33	0.24	0.39	0.22	0.17

Note: The index of dissimilarity represents the proportion of patients in each category that would need to shift in order to create an equal distribution of patients across all hospitals in the city. A higher index of dissimilarity represents a higher level of segregation between two groups (reference groups are indicated below column titles in parentheses).

NYC indicates New York City.

* Black includes black of any ethnicity; white reflects non-Hispanic whites only; other minority includes 'other race', 'white Hispanic', 'multi-ethnic white/other race'.