Comparison of Mental Health Treatment Adequacy and Costs in Public Hospitals in Boston and Madrid

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Abstract

Analyses of healthcare expenditures and adequacy are needed to identify cost-effective policies and practices that improve mental healthcare quality. Data are from 2010 to 2012 electronic health records from three hospital psychiatry departments in Madrid (n = 29,944 person-years)

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and three in Boston (n = 14,109 person-years). Two-part multivariate generalized linear regression and logistic regression models were estimated to identify site differences in mental healthcare expenditures and quality of care. Annual total average treatment expenditures were $4442.14 in Boston and $2277.48 in Madrid. Boston patients used inpatient services more frequently and had higher 30-day re-admission rates (23.7 vs. 8.7%) despite higher rates of minimally adequate care (49.5 vs. 34.8%). Patients in Madrid were more likely to receive psychotropic medication, had fewer inpatient stays and readmissions, and had lower expenditures, but had lower rates of minimally adequate care. Differences in insurance and healthcare system policies and mental health professional roles may explain these dissimilarities.

Introduction

Despite the high worldwide prevalence of mental disorders, rates of treatment do not match the need for care and mental health policies are a low priority in most countries.[1–3] Most persons with mental disorders receive no treatment, which is a major public health concern given the impact of mental health on quality of life and subsequent expenditures.[2,4–6] To address this, there have been calls from international health agencies for initiatives to improve access to treatment and to compare efficiency and quality of system models in order to implement evidence-based policy.

Cross-national comparative analyses of healthcare system efficiency have been carried out in several prior studies to evaluate system differences. One study compared the National Health Service of the UK and Kaiser Permanente, a large staff-model managed care organization in the United States of America (USA), finding that Kaiser patients had fewer acute days per capita and received overall higher quality of care at the same costs.[7] International comparative efforts have also been made specifically in the mental health field. After comparing 32 Organization for Economic Cooperation and Development countries, Moran and Jacobs concluded that Slovenia, Korea, Poland, and Denmark were the most efficient in mental healthcare provision.[8] The study provided an important step in cross-national comparisons but was limited by its exclusive focus on inpatient mental health care and lack of case-mix adjustment. There remains a dearth of international comparisons of mental health treatment quality and expenditures that incorporate the full continuum of mental health services (inpatient, outpatient, emergency care, and psychopharmacological treatment). Such analyses are needed to identify policies and practices that improve quality, particularly given the complexity of mental health disorders and the systems developed to treat them.[9,10]

Much like other public hospitals in Spain, Madrid hospitals in this study are part of the public health system and serve a socio-demographically diverse population of over 700,000 people.[11] The Boston system also serves a diverse linguistic and racial/ethnic minority population, with a relatively high percentage of patients covered by some form of public insurance, similar to other safety net settings in urban areas of the USA.[12] In both locations, psychiatric inpatient and emergency care is provided mainly by the hospital, while entrance to outpatient mental health treatment predominantly relies on referrals from primary care physicians (PCPs), specialists, or emergency room (ER) physicians.

One difference between sites is that outpatient care is predominantly delivered by either a psychologist or a psychiatrist in Madrid, whereas psychiatric nurses and social workers are also integrally involved in counseling services in Boston.[13,14] There are also major differences between the USA and Spain with regard to payment and insurance schemes. Spain has a single payer system in which copayments for mental healthcare visits are not common, and an unlimited number of mental health visits are allowed.[15] The USA has a multiple payer system (Medicaid,

Medicare, private insurance, and safety net programs) with wide variation in the number of co-payments billed to the patient, and in which many insurance plans limit the total number of mental health visits.[16]

It is important to acknowledge that these differences in healthcare financing and system organization across the two sites may result in different patterns of usual treatment and different characteristics of patient populations that are treated at the two hospital systems. For example, cost per unit of healthcare services in both sites varies greatly because of negotiations between payers, providers, and government regulators. Accordingly, differences in usual care and patient characteristics and diagnoses are described across sites. Additionally, regression models of service use variables are estimated, adjusting for differences in cost per unit, purchasing power, and patient demographics and diagnoses using statistical analysis to isolate differences in usual care. In these analyses, the cost per unit is standardized (i.e., each specialty mental health outpatient visit is worth $207 USD, the US average per authors' own analysis of US Medical Expenditure Panel Survey data). In prior studies, this has been referred to as a "quantity index," a metric of utilization that allows comparisons of the total value of services used by different individuals.[17] Furthermore, adjusting for World Bank Purchasing Power Parity (PPP) allowed for differences in the costs of services.[18] While not a perfect comparison, these adjustments allow for a more standardized comparison of the resources spent.

To improve knowledge of the relative merits of the two different mental healthcare systems, this retrospective study has three aims: (1) to compare any use of mental health care and per capita mental healthcare expenditures by site (Boston, Madrid) and treatment setting; (2) to compare the sites on two quality measures, "minimally adequate episodes of care," and 30-day inpatient readmissions; and (3) to describe healthcare system differences and how they may help explain expenditure and quality differences.

Methods

Data

Following procedures approved by Institutional Review Boards of both sites, cross-sectional data was analyzed from 2010 to 2012 electronic health records (EHRs) from a public hospital system with three hospitals in the Boston metropolitan area ($n = 14,109$ person-years) and three hospitals in Madrid ($n = 29,944$ person-years). These hospitals serve a high percentage of Latino patients and were included in the current study as part of their collaboration in the International Latino Research Partnership (ILRP). The ILRP connects research institutions, hospitals, and community clinics in the USA and Spain to conduct comparative research on Latinos' behavioral health service needs. Working with researchers, clinicians, and administrators, all variables used in this study were harmonized to ensure their comparability. To best harmonize the available data in the two sites, outpatient and inpatient treatment, psychotropic medication, and any emergency department (ED) use among patients receiving treatment in hospital psychiatric departments were analyzed. "Any ED use" was used, instead of a variable denoting ED use for psychiatric illness specifically, because of the difficulty in disentangling physical and psychiatric illness as the primary reason for a patient visit in the Madrid ED. Current engagement with substance abuse treatment, but not patients who might have a substance use disorder, was excluded since treatment services are predominantly offered by another provider network in Madrid.

A quantity index, or adjusted expenditures, was determined by multiplying the quantity of visits/uses by the cost per unit of treatment. In both sites, the cost per unit was estimated using the nationally representative 2012 US Medical Expenditure Panel Survey (MEPS) average cost for psychiatric inpatient, outpatient and ER services, and psychotropic medication expenditures. Comparing the sites on this weighted service use variable allows for an approximation of the

overall resources spent in each site and removes the potentially confounding variability that arises due to negotiations between payers, providers, and the government. Additionally, not only adjusting for the PPP adjusts for differences in currency exchange rates, but also underlying price differences in medical inputs and other goods and services in the domestic market.[7] In exploratory analysis, the study team compared expenditures incorporating site differences in both price and quantity, comparing MEPS average cost expenditures for the Boston site to fee for service reimbursement levels (also called official healthcare cost sheets) published yearly by the city of Madrid.

The main dependent variable is annual mental healthcare expenditures adjusted for site differences as described above. Utilization was disaggregated into (a) any access to treatment and (b) expenditures conditional on access to treatment (a continuous variable > \$0) and analyzed expenditures by setting (outpatient, inpatient, pharmacy, and emergency). Mental health events include the following: (a) treatment provided by a specialist (psychiatrist, psychologist, counselor, or social worker) for disorders covered by ICD-9 codes 291, 292, or 295–314 in Boston and based on the diagnosis recorded in text fields in Madrid or (b) prescriptions of medicines in Boston or Madrid considered a psychotropic drug per the Multum drug classification system.[19,20]

The first dependent variable related to quality of care is minimal adequacy of care, defined as having ≥ 4 outpatient visits in the last year and a psychotropic medication fill, or ≥ 8 outpatient visits (with or without a medication fill). This definition has been used in prior studies and represents the minimum of what clinicians and scientists have considered to be adequate care for depression, anxiety, and other mental illnesses.[6,21,22] The second quality variable is inpatient hospital readmission within 30 days used in prior literature to evaluate systems performance.[23] Hospital readmissions are likely due to inadequate treatment, inadequate care coordination and follow up care and/or complications from hospital treatment.[24] In the USA, the Affordable Care Act has authorized Medicare to provide incentives to reduce re-hospitalizations, reaffirming the measure as an important marker of quality.[25]

The primary independent covariate of interest was the site indicator. Other covariates included sex, age, primary mental health diagnosis (depression, anxiety, bipolar, psychosis, PTSD, other), and primary type of substance use (cocaine, marijuana, alcohol, other). Identification of mental health diagnoses and substance use type was possible for all Boston patients and approximately 75% of the population in Madrid. To account for this missingness, mental health diagnosis and substance use type for the other 25% of Madrid patients were imputed by multiple imputation via the Stata 14 MI procedure. Standard errors were derived by incorporating standard rules to account for the uncertainty due to imputation.[26]

Statistical analysis

First, usual psychiatric care in each site was determined to establish the context, health systems, and providers involved with care. To describe site characteristics, age- and gender-adjusted expenditures by site, and unadjusted rates of the independent variables were compared. Comparisons for continuous variables were conducted using t tests; categorical variables were compared using chi-squared tests.

For expenditures analyses, a two-part modeling strategy was implemented, separately modeling the probability of any expenditures (logit model) and the level of expenditure conditional on positive expenditures (generalized linear models (GLM)), adjusting for sex, age, and type of mental health and substance use disorder.[27] The GLM estimates expected expenditures $E(y|x, y > 0)$ directly as $f(x'\beta)$ where f is the link between the observed raw scale of expenditure, y, and the linear predictor $x'\beta$, where x is a vector of the predictors. GLMs allow for heteroskedastic residual variances related to the predicted mean.[28] A one-part GLM of total mental healthcare expenditures was estimated, since all sampled individuals had positive mental healthcare expenditures. For all

GLMs, using diagnostics in Manning and Mullahy and Buntin and Zaslavsky, the optimal GLM to have a log link and residual variance proportional to mean squared was identified.[28,29]

Minimal adequacy of care and 30 day inpatient readmissions were compared using logit models, adjusting for site (the covariate of interest), sex, age, and type of mental health and substance use disorder.

Results

Demographics

There are significant differences between the Boston and Madrid sites (Table 1). In Boston, patients were more likely to be female, older by approximately 3 years, and more likely to receive services with diagnoses of depression, anxiety, bipolar disorder, PTSD, marijuana use, and alcohol use compared to Madrid. In Madrid, patients were more likely to receive services with diagnoses of psychosis, other diagnosis, and cocaine use disorder.

Comparison of overall expenditures

Per capita expenditure was nearly twice as great in Boston as Madrid in unadjusted analyses ($4442.14 and $2277.48, respectively; Table 2) and after adjustment for the PPP, age, gender, and clinical profile ($4441.10 and $2274.03, respectively; Table 3).

Table 1
Sample characteristics ($n = 44,053$) in Boston and Madrid (2010–2012)[a]

	Boston		Madrid	
	%, mean	SD	%, mean	SD
Demographics				
Percent female	65.9%	0.47	42.1%	0.49*
Mean age	42.6 years	13.8	39.5 years	21.7*
Ever had mental health treatment for diagnosis of:[b]				
Depression	54.1%	0.50	32.3%	0.47*
Anxiety	37.3%	0.48	33.1%	0.47*
Bipolar	14.4%	0.35	4.8%	0.21*
Psychosis	3.6%	0.19	12.8%	0.33*
PTSD	17.4%	0.38	0.7%	0.08*
Other diagnosis	22.3%	0.42	30.9%	0.45*
Ever had substance use treatment for diagnosis of:				
Cocaine use disorder	1.6%	0.12	1.9%	0.13*
Marijuana use disorder	2.2%	0.15	1.8%	0.13*
Alcohol use disorder	11.0%	0.31	5.8%	0.23*

*Difference between sites is significant at $p < .05$ level
[a]Sample with diagnoses is limited to a smaller sample where diagnoses are identifiable (21,984 Madrid patients and 14,109 CHA patients)
[b]Percentages add to more than 100% because of a large number of patients that received treatment for multiple diagnoses

Table 2

Comparison of mental healthcare expenditures in Boston and Madrid (2010–2012)

Expenditures	Boston	Madrid
Gross expenditures/revenue	$63,600,000	$52,800,000
Net expenditure after adjustments[a]	$63,600,000	$52,800,000
Per capita expenditure (14,109 patients at CHA, 29944 patients in Madrid)	$4507.76	$1763.29
Conversion to dollars	$4507.76	
Adjustment for PPP (1/0.78)[b]	$4507.76	$2260.63
Adjustment for age and gender	$4442.14	$2277.48
Final adjusted per capita expenditure	$4442.14	$2277.48

Patients are those that received any specialty mental health care or assessment in the psychiatric departments of the hospital systems, and those that only received substance abuse treatment are excluded to make the samples comparable

[a]Source: http://data.worldbank.org/indicator/PA.NUS.PRVT.PP

[b]Sample of 44,053 person-years from 2010 to 2012 CHA ($n = 14,109$) and 3 Madrid hospital systems ($n = 29,944$)

Table 3

Comparison of expenditures and adequacy of care between Boston and Madrid patients (age- and sex-Adjusted) in 2010–2012

Expenditures	% Use (A)		Expenditures | use (B)		Total expenditures (A × B)	
	Boston	Madrid	Boston	Madrid	Boston	Madrid
Specialty outpatient MH expenditures	95.2	95.2	$2100.77	$1219.53*	$1999.84	$1160.99
MH Rx expenditures	59.6	81.8*	$371.11	$279.25*	$221.00	$228.34
Inpatient MH expenditures	11.7	6.9*	$18,492.93	$11,534.44*	$2154.47	$796.45
ER MH expenditures	32.5	34.9*	$202.41	$252.76*	$65.79	$88.25
Total MH expenditures					$4441.10	$2274.03
Quality measures	Boston	Madrid				
Minimally adequate care (≥ 4 visits and > 1Rx) or ≥ 8 visits	49.5	34.8*				
Psychiatric inpatient readmission[a]	23.7	8.7*				

Rx = psychotropic medications. Patients are those that received any specialty mental health care (outpatient or inpatient) or assessment in the psychiatric departments of the hospital systems, and those that only received substance abuse treatment are excluded to make the samples comparable. ER visits include both psychiatric ER visits and physical health ER visits. Uses MEPS average US expenditures for weighting each type of service use. Does not account for differences in price. Source: Adjustment for PPP: http://data.worldbank.org/indicator/PA.NUS.PRVT.PP. Psychiatric readmission sample is limited to only those that had any inpatient psychiatric care ($n = 1682$ CHA and $n = 2044$ Madrid)

*$p < .05$

[a]Sample of 44,053 person-years from 2010 to 2012 CHA ($n = 14,109$) and 3 Madrid hospital systems ($n = 29,944$)

Expenditures by service type

Nearly all patients in both sites used outpatient mental health treatment, but patients in Madrid spent less conditional on accessing care ($1219.53 in Madrid, $2100.77 in Boston; Table 3). Madrid patients were more likely to use but spent less on psychotropic medications (81.8% use and $279.25 expenditure in Madrid, 59.6% use and $371.11 in Boston). The overall difference in mental healthcare expenditures was almost entirely accounted for by the larger percentage of use and greater expenditures for inpatient services in Boston (11.7% use and $18,492.93 expenditure in Boston, 6.9% and $11,534.44 in Madrid). To check the sensitivity of findings to cost per unit fluctuations, the Madrid fee-for-service cost sheet was used to estimate prices in Madrid and re-run the analyses. The results were similar in both direction and significance (data available upon request).

Patients in Boston were less likely to use and spent less in emergency department care than patients in Madrid (32.5% use in Boston, 34.9% in Madrid; $202.41 in Boston, $252.76 in Madrid). Boston patients were more likely to receive minimally adequate care (49.5 vs. 34.8% in Madrid). Among those with a psychiatric inpatient admission, Boston patients were significantly more likely to have a readmission within 30 days (23.7 vs. 8.7% in Madrid).

Total expenditure and quality

Similar differences between sites were identified in multivariate regression analyses. Madrid patients had lower expenditures overall (Table 4, panel 1). Significant positive predictors of total mental healthcare expenditure were having bipolar, psychotic disorder, or PTSD (compared to a depressive disorder), as well as a cocaine, alcohol, or marijuana disorder (compared to other substance disorders).

Madrid patients had a lower likelihood of minimally adequate care (Table 4, panel 2). Significant positive predictors of minimally adequate care were being female, older, having an anxiety, bipolar, psychotic, or PTSD disorder (compared to a depressive disorder), and alcohol or marijuana use (compared to other illicit drugs).

However, Madrid patients fared better on another measure of quality of care, having a lower likelihood of inpatient psychiatric readmission. Significant positive predictors of inpatient admission were being male; having an anxiety, bipolar, psychotic, or PTSD disorder (compared to those with a depressive disorder); and use of alcohol or marijuana (compared to those using other substances).

Discussion

This study has identified significant differences in service utilization and patient characteristics in two large safety net systems in the USA and Spain. While these systems are similar in that they treat a large percentage of low-income residents in their community catchment areas with mental illness, these systems operate in countries with different health policies and organizational and financing characteristics. The quantity of psychiatric care, as measured by site-adjusted expenditures, was much greater in Boston than Madrid, with differences mainly driven by more frequent use of inpatient services in Boston. When assessing overall expenditures without adjusting site differences in negotiated rates of reimbursement, Madrid fee-for-service reimbursement levels for inpatient services (official healthcare cost sheets) were found to be well below the US national average (results available upon request). While these cost sheet prices in Madrid are not paid universally to all hospital systems (some hospital systems negotiate capitated rates), this suggests that profit margins may be greater in the USA and provide an incentive for greater inpatient care.

Table 4
Regression models comparing total mental health expenditures and minimally adequate care
between Madrid and Boston ($n = 33{,}384$) in 2010–2012

Covariates	Generalized linear model of total mental health expenditures		Logit regression model of minimally adequate care		Logit regression model of any 30-day psychiatric inpatient hospital readmission[a]	
	Coef.	Std. err.	Coef.	Std. err.	Coef.	Std. err.
Madrid (ref Boston)	− 0.36	0.02*	− 0.29	0.03*	− 1.30	0.13*
Female	− 0.001	0.02*	0.08	0.02*	− 0.02	0.10*
Age	0.002	0.001	− 0.002	0.001*	0.01	0.003
Diagnosis (ref depression)						
Anxiety	− 0.0002	0.02	0.32	0.03*	0.0003	0.13*
Bipolar	0.79	0.03*	0.74	0.04*	0.31	0.12*
Psychosis	1.27	0.03*	1.08	0.04*	0.72	0.11*
PTSD	0.61	0.04*	1.15	0.05*	0.20	0.16*
Other diagnosis	0.45	0.02*	0.39	0.03*	0.59	0.14*
Cocaine	0.25	0.07*	− 0.15	0.10	− 0.11	0.25
Marijuana	0.48	0.05*	0.15	0.08*	0.05	0.20*
Alcohol	0.65	0.03*	0.21	0.04*	− 0.07	0.12*
Constant	7.57	0.03*	− 0.59	0.04*	− 2.15	0.20*

Subsample of patients with diagnosis (21,984 Madrid patients and 14,109 CHA patients)

*$p < .05$

[a]Psychiatric readmissions sample is limited to only those that had any inpatient psychiatric care ($n = 1682$ CHA and $n = 2044$ Madrid)

Analyses identified that the Boston healthcare system could provide minimally adequate care to a greater percentage of patients, but at a higher cost. Differences in usual care and financing systems may help to explain part of these differences. First, it may be linked to Boston's greater use of social workers and psychiatric nurses in providing therapy and case management. Social workers in Boston may provide support to overcome social obstacles to mental health and retention in care and may fill in service gaps created by the limited supply of psychiatrists and psychologists.

Differences in adequate treatment may also be attributed to the greater reliance on capitated risk contracts in the Boston healthcare system (39.3% of Madrid patients are under capitated payment contracts compared to 55% in Boston). Retention in care for patients underinsured by capitated plans may be encouraged by insurance companies through rewarding efforts to manage chronic disease and incentivizing providers to take greater responsibility for patient care.[30,31] This study adds to the mixed previous literature on insurance type and its influence on mental healthcare quality and expenditures, though it is important to note that capitated payments operate differentially in Spain, where the great majority of providers are paid salaries by the healthcare system as opposed to receiving payments conditional on patient activity.[32,33]

In both locations, nearly all of those that received any behavioral healthcare received outpatient care. Qualitative interviews conducted for the International Latino Research Partnership identified that, generally, patients in Madrid did not present as many financial or insurance obstacles to accessing care. This may make treatment more accessible to patients with mild symptoms or aid in

earlier recognition. This may also help explain the lesser average number of visits in Madrid: if patients enter treatment earlier, perhaps they also improve more quickly. Cultural differences can also have an explanatory role regarding lower readmission rates and lower use of inpatient services in Madrid. Intergenerational living arrangements are common in Spain and likely reflect cultural values of interdependence and collectivism; one study found that 46% of Spanish adults over 65 resided with their children, while other studies have noted that 46% of women and 56% of men ages 20–34 years in Spain live in their parents' home.[34,35] Emotional and instrumental support from family members may help with the implementation of outpatient treatment options and reduce the need for inpatient hospitalization.

Psychotropic medication expenditures conditional on any use were also lower in Boston. This aligns with the finding that there are a higher percentage of psychiatrist visits (as opposed to non-prescribing social workers and psychiatric nurses) in Madrid, which may result in increased likelihood of receiving psychopharmacological treatment.[15] There has not been comparison of the effectiveness of psychopharmacological versus psychotherapeutic approaches on the level of entire mental health systems, and those made at micro levels are inconclusive.[36,37] The lower percentage of expensive inpatient admissions in Spain, even after adjustment for clinical differences, suggests that a heavier reliance on psychiatric and psychopharmacological approaches may help to reduce inpatient admissions.[15] Of concern is that minimally adequate care, as defined in this study, is less likely in Madrid. Aligning the system to be more efficient, without sacrificing adequacy of care, merits further investigation. Administrators and policymakers may consider pursuing strategies of increasing non-psychiatric visits in Madrid and lowering inpatient admissions in Boston to provide better overall care.

Like prior comparative studies, the interpretation of results must be done in the context of some limitations.[8,38] First, accurate comparisons are difficult given the heterogeneity of practices within settings and countries as well as how EHRs are used. Second, differences by socioeconomic status might play a role, but are not captured in the EHR. Third, some outpatient visits may not be captured by the EHR if a patient visits other hospitals, but as this happens in a small and similar percentage in both sites, it should not change the direction of the results. Fourth, there was variation in type of diagnosis across the two sites. Although the effect of these differences is expected to be low, given that the regression analyses adjusted for diagnosis, there may be unobserved variables correlated with these diagnoses that were not fully adjusted for in the models.

Finally, diagnoses recorded in the EHR are not always determined by structured diagnostic instruments, which are likely driven by the complexity of cases. For example, adjustment disorders may mix depressive and anxiety symptoms. To assess the complexity of understanding payment for services, tools such as the diagnosis-related group (DRG) system have been developed and implemented.[39] Adding DRGs for future analysis could be the next step in disentangling the differences, especially at the inpatient level.

This comparison between the USA and Spain, two countries with similarly large, diverse immigrant populations yet very distinct systems of care, provides invaluable insights into mechanisms integral to balancing efficiency and quality for healthcare systems and countries around the world. Drawing conclusions from such a complex comparison is challenging and necessitates a cautious approach, but rising mental healthcare expenditures in the USA require that researchers develop cost-efficient policies.[40] The data suggest several areas for action to help achieve this objective. First, greater investment in non-psychiatrist providers in outpatient settings in Madrid can help to improve the likelihood that a patient will receive a minimal threshold of treatment. In Boston, increasing the treatment of patients by prescribing psychiatrists is likely to reduce the healthcare system's higher rates of inpatient service use and readmission. This study provides varying approaches to balancing the benefits and savings of moving toward less specialized care in the face of fiscal constraints and licensing barriers. Second, more research is needed to compare types of hospital financing systems and their relation with mental health

systems performance. Future studies that assess access to care among individuals with mental illness in the community catchment area of these hospital systems would help to better evaluate how well they serve those in need. Finally, researchers must look in greater detail at how the type of services offered impacts access to treatment and quality of care.

Implications for Behavioral Health

There is a shortage of international mental health services data that allow for cross-national comparisons of diagnosis, expenditures, and service use.[8] Analyses used electronic health records (EHRs) in two large urban hospital systems in the USA and Spain to compare healthcare data from the two countries. Both hospital systems are part of a multisite NIDA study to develop a research and data infrastructure, which allows for harmonization and comparison of detailed mental healthcare data.[41] Use of EHR provides the opportunity for analysis based on metrics available for use in hospital quality improvement efforts, thus providing a model that can be applied in a variety of settings using locally relevant data. Both the USA and Spain are home to large linguistically and ethnically diverse immigrant populations. Differences in the organization of care and the outcomes that are produced can provide fundamental insights and learning opportunities, not only for both countries, but also for nations seeking to improve quality and efficiency of these treatments across the world.

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Conflict of Interest   The authors declare that there are no conflicts of interest.

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