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Doing well by doing good: linking access with quality

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Abstract

BACKGROUND: We hypothesize that medical centers that prioritize altruism can also deliver superior quality care.

METHODS: Data were obtained from California's Office of Statewide Health Planning and Development, Medicare Hospital Compare, and the Joint Commission US Census Bureau's American Community Survey. Outcomes were measured using summary statistics, regression analysis, and quality indices. Total discounted revenue/total revenue (TDR/TR) served as a proxy for altruistic care.

RESULTS: In nonprofit hospitals, TDR/TR positively correlated with 5 quality indices including pneumonia ($P < .001$), heart failure ($P = .05$), and overall surgical process of care ($P = .009$). Hospital size predicted higher quality surgical process ($P = .06$, 201 to 300 beds; $P = .01$, >301 beds), hospital teaching status demonstrated positive correlation ($\beta = .048$, $P = .69$), and poverty was negatively correlated ($\beta = -.00072$, $P = .89$). Positive TDR/TR did not adversely affect mortality or readmission rates ($P = .52$).

CONCLUSIONS: TDR/TR predicts quality in nonprofit hospitals without increasing mortality and readmission. Altruistic motivation may be associated with the delivery of higher quality surgical care.

The decision to pursue a career in medicine is often portrayed as a calling with the goal of providing compassionate care, often in service, to those patients who are destitute, disadvantaged, and deprived of access. The consideration to forego more lucrative and self-serving professions for a career that allows physicians to "do well by doing good"[1] represents a deliberate if not romanticized decision to provide equity toward social justice. However, the definitions of doing "well" and "good" are imprecise at best and represent moving targets in this current economically challenged climate where fiscal accountability has assumed a strong priority in the healthcare industry. Although "doing good" as best practice has been described as a "social obligation," this remains a difficult parameter to measure and evaluate in comparison with other available healthcare products.[2] Indeed, the complex processes that are involved in disease diagnosis, medical decision making, and the risks and benefits of therapeutic interventions render the theory and practice of medicine unassailable by the average patient or consumer. In this context, best practice and benchmarking of medical care have acquired increased scrutiny as patients seek the highest quality in a competitive market. Current mechanisms for measuring

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quality applicable to the healthcare industry include the personal experience of patients, branding by firms, voluntary disclosure, government regulation, certification and licensing, third party certification agency, ratings, warrantees, and ultimately litigation.[3]

Although economic theory presumes that material self-interest is the principle motivation guiding decision making in the market, the concept of altruistic physician motivation or "doing good" as it pertains to sound economic strategy has not been explored. There is an expectation that physicians provide the best clinical care to patients and not just the most economical care.[2] Indeed, a "substantial part of the physician's satisfaction with practice is fulfilled by serving successfully as a patient's advocate".[4] This theory of social equity is supported in real-world instances where physician firms that are owner operated (private practice) permit the possibility of altruistic care on a case-by-case basis,[5] and also in the higher proportion of hospital managers with altruistic motives at nonprofit hospitals.[6]

Altruistic care is a leading mission in academic centers but is often perceived as a fiscally untenable endeavor associated with indigent and lower quality patient care. We hypothesize that centers that prioritize altruism may deliver superior quality care. The difficulty in measuring altruism has kept experimental economists from exploring this relationship. In an effort to establish an operational proxy, our study makes the assumption that the relative amount of care a nonprofit hospital provides at reduced rates and rates below-cost reflects the altruistic tendency of the organization.

Patients and Methods

The nonprofit hospitals of Los Angeles County were chosen as the focal point of this study. For-profit hospitals served as a comparison and were assumed to be profit-maximizing firms. Location, ownership type, size, teaching status, revenue, and revenue deductions data from the fiscal year of 2011 (October 1, 2010 to September 30, 2011) were obtained from the State of California's Office of Statewide Health Planning and Development. Quality data from the period July 1, 2011 to June 30, 2012 were obtained from Medicare Hospital Compare (MHC). Poverty data were obtained from the US Census Bureau's 2007 to 2011 American Community Survey 5-Year Estimate. All hospitals in Los Angeles County that reported their financial (Office of Statewide Health Planning and Development) and quality data (MHC) were included in the study. The resulting dataset excluded VA, psychiatric, and Kaiser hospitals.

We utilized a financial proxy as a surrogate for a hospital's inclination to provide care at reduced rates and rates below-cost. This proxy, measured as the hospital's total discounted revenue divided by the hospital's total revenue (TDR/TR), represents our mathematical approximation for altruistic care. TDR is the sum of each hospital's claim of bad debt, charity care, credit balance from restricted donations and subsidies for indigent care, teaching allowances, support for clinical teaching, policy discounts, and Medicare, Medicaid, indigent program contractual adjustments. TR is the sum of total operational revenue and total nonoperational revenue. TDR represents a complete indicator of the altruistic care as it removes the variability in bad debt and charity care allocations and takes into account the treatment of patients with less rewarding insurances. TR is a better representative denominator than total operational revenue because TR accounts for donations and income from endowments and investments, which reflects an organization's overall financial strength.

We organized the quality measure data into 3 broad domains: process (ie, inputs), outcomes, and patient experiences. Of the 31 relevant measures, there were 17 processes, 6 outcomes, and 8 patient experience measures. In order to develop more functional and broader quality measures, we combined measures to produce standardized indices that equally weighed the included measures, the measures were combined to produce standardized indices that equally weighed included measures. Table 1 shows the 31 measures and 7 indices used for our study and how they were organized.

We used a multivariable linear regression model in our study. Various quality measures and indices were regressed on TDR/TR. Covariates were included as controls for different hospital-level characteristics. Hospitals were identified as teaching or nonteaching by the presence of a residency program and grouped by size accordingly (150 or fewer beds, 151 to 200 beds, 201 to 300 beds, and >300 beds). The poverty rate (% of individuals below poverty line) of each hospital's local city was included as a regressor. The regressions were run conditional on ownership type to differentiate the financial proxy's effect on quality for nonprofit hospitals and for-profit hospitals.

$$Quality_i - \beta_1 \frac{TDR}{TR} + \beta_2 Teaching + \beta_3 Poverty + \beta_4 Size_{200} + \beta_5 Size_{300} + \beta_6 Size_{>300} + \beta_7$$

Results

There were 51 nonprofit and 29 for-profit Medicare-certified acute care hospitals included in the study. We examined the effect of TDR/TR on 6 process quality measures in the hospital systems in this study. For nonprofit hospitals, TDR/TR positively correlated with 5 of the 6 process quality measures including pneumonia ($P < .001$), heart failure ($P = .06$), and overall process of care ($P = .009$). In this group, smaller hospital size is a predictor of lower quality process in each of the following areas: immunization ($P = .01$, 150 to 200 beds; $P = .01$, 201 to 300 beds), heart failure ($P < .001$, 150 to 200 beds; $P = .03$, 201 to 300 beds), heart attack ($P \leq .001$, 150 to 200 beds; $P = .03$, 201 to 300 beds), and overall process ($P < .001$, 151 to 200 beds). In contrast, larger hospital size is a predictor of higher quality surgical process ($P = .06$, 201 to 300 beds; $P = .01$, >301