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### Value-based purchasing and hospital acquired conditions: Are we seeing improvement?



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#### ABSTRACT

*Objective:* To determine if the Value-Based Purchasing Performance Scoring system correlates with hospital acquired condition quality indicators.

*Data sources/study setting:* This study utilizes the following secondary data sources: the American Hospital Association (AHA) annual survey and the Centers for Medicare and Medicaid (CMS) Value-Based Purchasing and Hospital Acquired Conditions databases.

*Study design:* Zero-inflated negative binomial regression was used to examine the effect of CMS total performance score on counts of hospital acquired conditions. Hospital structure variables including size, ownership, teaching status, payer mix, case mix, and location were utilized as control variables.

*Data collection:* The secondary data sources were merged into a single database using Stata 10.

*Principal findings:* Total performance scores, which are used to determine if hospitals should receive incentive money, do not correlate well with quality outcome in the form of hospital acquired conditions.

*Conclusions:* Value-based purchasing does not appear to correlate with improved quality and patient safety as indicated by Hospital Acquired Condition (HAC) scores. This leads us to believe that either the total performance score does not measure what it should, or the quality outcome measurements do not reflect the quality of the total performance scores measure.

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#### 1. Introduction

It is reported that the United States currently spends approximately 17.9% of the national GDP on health services with projected increases of up to 19.6% by 2021 [1]. This level of spending has spurred a reevaluation of the way in which our system operates, particularly when continually

http://dx.doi.org/10.1016/j.healthpol.2014.10.003 0168-8510/© 2014 Elsevier Ireland Ltd. All rights reserved. rising health care costs are paired with poor or inadequate outcomes. The U.S., compared to other developed countries, ranks poorly on several key quality outcome measures such as infant mortality and childhood obesity. In addition, the U.S. received a poor overall score on 2011s National Scorecard on U.S. Health System Performance [2]. The question and issue at hand is: how can the U.S. achieve better quality outcomes while also reducing health care cost and expenditures?

Process management techniques including Total Quality Management (TQM), Six Sigma, and a variety of additional flavors of process evaluation and enhancement procedures were believed to be hospitals' answer to poor clinical outcomes and high costs. Through better processes,





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health systems have attempted to improve outcomes. However, despite these efforts hospitals are still responsible for poor quality indicators such as iatrogenic infections, poor work processes, long wait times, and a host of other issues [2,3].

Finding a solution to our cost and outcome issues as well as creating a health system that provides safe, quality care which all can access has become a focal point for patients, policy makers, and healthcare providers. Safety, quality and access, while historically maintaining some level of concern to those seeking and providing care, have gained attention primarily due to cost and reports of patients being harmed during the care process. The Institute of Medicine's (IOM) *To Err is Human: Building a Safer Health System* [4] and *Crossing the Quality Chasm* [5] highlight areas where health care is lacking. These reports spearheaded a renewed focus on safe, quality care, ultimately contributing to the passage of the Patient Protection and Affordable Care Act of 2010.

One currently proposed solution involves incentivizing organizations to pursue value through either the ability to acquire higher reimbursements or the threat of losing current reimbursement if a certain quality and cost level is not met. As part of the Patient Protection and Affordable Care Act of 2010, the Hospital Inpatient Value-Based Purchasing Program (VBP) was signed into law [6]. VBP is an incentive arrangement through The Centers for Medicaid and Medicare Services (CMS), in which hospitals and other providers, are rewarded for adhering to quality standards or providing value in the delivery of services. This approach to achieving better performance relies on behavior modification through motivation for higher pay [7].

#### 2. Background

Several studies have demonstrated that incentives such as Pay for Performance (P4P) do indeed have a positive effect in hospitals' adherence to improving quality and safety [8–12]. For instance, in 2003, CMS initiated a three-year P4P initiative to determine its effectiveness in hospitals. This study evaluated the effect that P4P had on mortality rates for hip and knee replacement, pneumonia, heart bypass, heart failure, and heart attack. Specifically, it tracked a set of evidence-based quality measures which contained both clinical process and quality measures. This project, which contained 262 hospitals, resulted in a median cost reduction of approximately \$1000 per patient and decreased mortality rates by 1.87% [12].

Using a subset of the hospitals involved in this initiative, Linenauer and colleagues [13] conducted a two-year study that compared 613 hospitals on quality of care. Two hundred and seven of these hospitals were participating in CMS's P4P initiative while the rest served as the comparison group and only participated in public reporting. This study's results demonstrated that P4P participating hospitals improved, if slightly, in the quality measures in comparison to the hospitals involved solely in public reporting.

However, not all P4P studies have demonstrated performance improvement. Glickman and colleagues [14] also evaluated the CMS P4P initiative. In their study, 54 CMS P4P participating hospitals were evaluated against 446 comparison hospitals. During the three-year study, the researchers found several areas where CMS P4P participating hospitals improved in therapy adherence; however, no significant improvements in mortality rates or acute myocardial infarction treatments were found. These results, while in the minority, present caution to fully adopting P4P as a solution to poor quality and high costs.

Some researchers argue that P4P could result in the reduction of learning, particularly from mistakes. Not all medicine has well-established routines founded in evidence, and adhering to the wrong set of guidelines will prevent, or at least slow, the learning process [15]. Additionally, the measurements that are being used may not fully capture the actual performance of the hospital or health system leading to different reimbursements based on who is compiling the data [16]. Process and outcomes are not always highly correlated based on the clinical measurement systems being used. In addition, hospitals that lack the infrastructure to take advantage of P4P initiatives will most likely not increase their performance [17]. The consequences for a one size fits all P4P system may force rank larger organizations to higher rankings and increased incentive payouts while limiting smaller organizations to lower rankings and fewer realizations of incentives [18].

#### 2.1. Current incentives – value-based purchasing

The current form of P4P offered through CMS is termed value-based purchasing (VBP). Value has been defined as being created "when for a given cost or price to the purchaser additional quality features desired by the purchaser are provided or, conversely, when a given level of quality services can be provided at a lower cost or price relative to others from whom purchasers can obtain services" [19]. The VBP program is offered to acute care hospitals and are dispersed based on how well the hospital is able to meet performance measures. During FY2013, value is determined by measures within two domains: clinical process of care and patient experience of care [20]. The clinical process domain includes 12 clinical process measures (see Table 1) and will account for 70% of the total score, while the patient experience of care measures are derived from the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey will count as the remaining 30%. By 2015, CMS will add another two care domains (see Table 2) which include the previous two (clinical process of care, and patient experience of care) with outcomes and efficiency measures [6]. Currently, there are three mortality outcomes measured: acute myocardial infarction, heart failure, and pneumonia. Future iterations of the VBP program will expand the number and types of outcomes which are evaluated.

#### 2.2. Conceptual model

In order for us to better understand the affect that the VBP incentive system has on hospital outcomes, it is important to determine whether or not hospitals which score better in the VBP program also score better on related outcomes of interest. Through this determination, the impact P4P incentives have on hospital processes and Download English Version:

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