Impact of Creating a Pay for Quality Improvement (P4QI) Incentive Program on Healthcare Disparity: Leveraging HIT in Rural Hospitals and Small Physician Offices

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Introduction

Reducing health disparities and improving healthcare quality for all Americans has become a national priority.[1–4] Approximately 16 percent (or $4 trillion) of America's gross domestic product is spent on healthcare.[5–7] Despite spending twice as much on healthcare as other industrialized countries, the U.S. system of healthcare ranks last among industrialized countries in terms of quality, access, and cost efficiency.[8] Furthermore, within the U.S. system of care, significant geographic, economic, and racial/ethnic disparities exist in both access to healthcare and in healthcare outcomes.[9] Those living in rural areas, African Americans, Hispanics, and the socioeconomically disadvantaged receive unequal quality of care and have significantly worse healthcare outcomes than reference groups.[10]

The 2006 National Disparity Report noted that "disparity in access to care is increasing at a rate of 60 percent to 80 percent per year."[11] Only 10 percent of our nations' physicians practice in rural areas while 25 percent of the population lives in rural areas. Those living in rural areas have higher rates of chronic disease (46.7 percent vs. 39.2 percent), hypertension (128.8/1000 vs. 101.3/1000), chronic obstructive pulmonary disease (COPD) (30 percent higher), and work-related fatalities (44 percent higher).[12] Discrepancies in access to quality healthcare exist by race and economic status. African American, Hispanic, and socioeconomically disadvantaged populations[13] are likely to receive inappropriate care or less comprehensive medical care than whites.[14, 15] Specifically across the majority of clinical core measures, Hispanic and socioeconomically disadvantaged groups have less access to quality care.[16]

To address issues of healthcare quality, access, and cost efficiency in rural areas, several government initiatives and programs have been undertaken.[17–20] Foremost among those national initiatives are implementation of pay-for-performance (P4P) programs and healthcare technology projects focused on creating a national health information network (NHIN) and promoting widespread adoption of electronic health records (EHRs).[21-23] In this paper, we argue that creating a Pay for Quality Improvement (P4QI) incentive program based on physician compliance with standardized protocols and leveraging appropriate health information technology (HIT) in rural hospitals and small physician offices caring for underserved populations will improve quality of care and reduce healthcare outcome disparity. While few government initiatives have provided incentives for quality of care, they have not directly tied behavioral components

of the quality process to economic incentives. Furthermore, these initiatives have been limited to large healthcare providers and have not been implemented in physician offices or small hospitals in rural areas. HIT in combination with a focus on treatment processes rather than patient clinical outcomes may be an equalizing factor in helping rural hospitals and small physician offices increase reimbursement. This paper will be divided into three main sections: review of P4P literature, review of HIT adoption literature, and a discussion on leveraging HIT with P4QI programs to reduce healthcare disparity.

Impact of P4P

P4P programs provide financial incentives to healthcare providers based on quality of care and cost efficiency of services.[24–32] P4P measures may include clinical outcomes, cost efficiency, processes related to best practices, use of HIT (e.g., electronic health records and registries), patient satisfaction, and patient safety.[33–35] The number of P4P programs has increased from 37 in 2003 to over 170 in 2007.[36, 37] According to current research, approximately 50 million Americans seek healthcare services reimbursed under P4P criteria. The growth of P4P programs has been primarily driven by public stakeholder groups, such as the Centers for Medicare and Medicaid Services (CMS) and the Agency for Healthcare Research and Quality (AHRQ), as well as by private-sector organizations concerned with national healthcare, such as the Leapfrog Group and the Robert Wood Johnson Foundation (RWJF).

In general, P4P reimbursement incentive programs are tiered based on reported outcome measures related to quality of care and use of administrative data.[38, 39] Few, if any, P4P programs combine clinical outcome quality scores with process measures utilizing healthcare technology.[40] Financial incentives may range from several hundred to several hundred thousand dollars.[41–44] The criteria for reimbursement may vary from the percentage of members meeting Healthcare Effectiveness Data and Information Set (HEDIS) guidelines for well-baby visits, use of ACE inhibitors, HbAlc for diabetic patients, or rates of childhood immunizations to measures of patient satisfaction.[45–47]

Direct patient care benefits most often associated with P4P are constant feedback to physicians and nurses regarding the effectiveness of treatments, the ability to continuously monitor patient compliance and outcomes, clinical evidence in areas where care can be improved, and standardization of physician practices.[48] Through better documentation of care, P4P encourages hospitals and physician offices to implement HIT.[49, 50] This includes the use of electronic decision support tools, electronic registries and databases, health information exchange between healthcare providers, and educational modules to improve quality of healthcare through staff training.[51] Combining HIT with P4P incentives could help reduce fragmentation of care by linking providers in a seamless, interoperable HIT infrastructure. However, reimbursement incentives related to P4P quality scores are rarely tied to the use of HIT.

Research examining the impact of P4P on improving actual healthcare outcomes (quality of care) is mixed.[52–57] Where data show that P4P does improve healthcare outcomes, improvements are minimal.[58–61] In studies where healthcare outcomes are improved, P4P measures are well defined and focused on limited clinical measures.[62] Most research documenting the positive impact of P4P on quality of care is based on anecdotal evidence and not a systematic study of national data.[63] Furthermore, this research has generally been limited to urban areas and large HMOs.[64, 65] Finally, where improvements are documented, the direct effect of P4P cannot be separated from external factors (e.g., the Hawthorne effect resulting from a short-term focus on quality measures) that may be related to improvements in quality of care.

Empirical research on the effect of P4P practices on healthcare disparity is limited.[66–69] Research in rural areas or practices with a predominately minority or socioeconomically disadvantaged population shows that P4P practices have unintended consequences that increase disparity in the quality of care.[70–73] Unintended consequences of P4P programs that hinder physicians' ability to achieve high quality scores in rural or underserved areas include patient dumping (e.g., unfair quality measure comparisons), reduction in income for physicians (e.g., noncompliance), and focusing on P4P quality measures at the exclusion of other clinical problems (e.g., "teaching to the test").[74–81]

P4P practices may create a tiered physician network and physician profiling where physicians may avoid patients where quality measures are not risk-adjusted to include comorbid conditions.[82–91] Perceived

high-risk patients (e.g., the economically disadvantaged) are often seen as not being cost effective under traditional P4P programs.[92] Research suggests that physicians who treat underserved populations or work in small rural communities will likely face a reduction in overall income.[93] These physicians are likely to treat patients who are uninsured or underinsured, Medicaid patients, and patients who are noncompliant, thus reducing the P4P quality scores.[94, 95] Physicians in rural areas do not have the patient volume to overcome lack of insurance or lack of compliance.[96] In addition, rural physicians do not have the resources to afford evidence-based clinical support tools or appropriate HIT.[97–101] Consequently, they face documentation issues as well as the inability to utilize registries to improve P4P quality scores. Treatment performed but not recorded will not be captured as part of the quality score. In order to improve quality scores and increase financial reimbursement, physicians may focus on P4P quality measures that may produce short-term benefits at the expense of treating the overall patient condition.[102–106] Physicians could manipulate measures and outcomes to achieve the highest quality score.[107] For example, among Hispanic populations the physician may focus on controlling high blood pressure without providing culturally sensitive materials to educate the patient.[108] The trust between the patient and physician may also be compromised. If a patient is aware of the P4P program where physicians receive economic incentives, the patient may feel that the physician is acting more for personal gain as opposed to patient needs.[109]

HIT

In order to improve quality of care for all Americans, more than $1 billion has been spent or allocated toward adoption of HIT since 2004. The focus of these initiatives has been to improve access and quality of healthcare. In 2004 alone, the Agency for Healthcare Research and Quality (AHRQ) initiated a $129 million program to foster HIT adoption; in 2005 the AHRQ added an additional $22 million in HIT implementation grants. These programs included more than 100 grants spread across 38 states.[110] In 2007, the FCC allocated more than $400 million to expand broadband and Internet connectivity to provide interoperability between healthcare providers for telemedicine and telehealth programs.[111] Furthermore, in 2007, 41 pieces of legislation related to health information technology were introduced in Congress. According to testimony before the Senate Budget Committee, HHS is pursuing efforts to advance nationwide implementation, but has not yet completed a national strategy.

Despite these efforts, the United States lags behind most developed countries in the implementation of HIT.[112, 113] Studies suggest that between 15 and 18 percent of physician offices have adopted and are utilizing some component of an EHR system.[114–121] EHR adoption and usage seem to be correlated to the size of the physician practice. Thirteen percent of solo-practice physicians have adopted EHRs compared to 57 percent in practices with more than 50 physicians.[122, 123] Single-physician offices are two times less likely to adopt and fully utilize an EHR system than physician practices with 10–19 physicians, and three times less likely than physician practices with 20 or more physicians.[124] Physician offices with seven or more physicians had a 52 percent adoption rate, while single-physician offices had a 14 percent adoption rate.[125] When factoring in the use of a minimally comprehensive EHR system, namely computerized orders for prescriptions, computerized orders for tests, reporting of test results (lab or imaging), and clinical notes, adoption rates range from 7 percent for solo practitioners to 27 percent for practices of 11 or more practitioners.[126] The disparity continues in urban and rural hospitals; 20 percent of the urban hospitals surveyed had adopted the EHR compared to only 11 percent of rural hospitals.

Discussion

In general, our review of the P4P literature suggests that 1) P4P programs in urban areas and large provider organizations may have a modest impact on improving quality of care, and 2) P4P programs in rural areas, small physician offices, and provider organizations that treat underserved populations are likely to increase disparities in quality of care and healthcare outcomes.

As the number of P4P programs grows, the potential unintended consequences related to inequity in treating America's underserved populations may increase. Recent research suggests that P4P programs result in inequitable care for perceived high-risk populations such as African Americans and Hispanics, rural populations, and socioeconomically disadvantaged populations. Under current P4P programs, issues

related to patient compliance, controlling for comorbid conditions, and failure to appropriately risk-adjust incentive rewards are not addressed. Patient profiling, patient dumping, and tiered treatment systems are examples of practices that create disparities in care.

We suggest that a P4QI (Pay for Quality Improvement) incentive program be initiated. A P4QI incentive program would focus on improving quality improvement (QI) processes related to care and incentivize compliance with standardized protocols. By changing the focus from clinical outcomes to care processes, health outcomes among African American, Hispanic, rural, and socioeconomically disadvantaged populations should improve.

Proposed P4QI Incentive Program

In general, P4P incentive programs affect reimbursement based on patient outcomes related to a clinical standard. Body mass index (BMI) less than 30 and systolic blood pressure (BP) less than 135 are common clinical standards used as P4P incentive measures for diabetes and hypertension. Under the proposed quality improvement strategy (P4QI incentive model), we would leverage existing health information technology (HIT), evidence-based clinical standards, and workflow quality improvement processes to enhance patient outcomes and improve healthcare delivery systems. The P4QI intervention proposed in this paper is fundamentally different than traditional P4P incentive programs. The current P4P incentive program creates a disconnect between practice, treatment care processes, and patient outcomes. Instead of creating economic incentives that focus on patient outcomes (P4P), the proposed intervention focuses on incentives linked to process and performance of care measures (P4QI). Selected P4QI measures reflect a change where the focus is on equity of care, not patient outcomes. For example, instead of focusing on the percent of patients with blood pressure lower than 135/80 or a BMI less than 30, emphasis would be placed on the number of patients who had their blood pressure taken or BMI assessed according to standardized practice guidelines.

Creating a system of care where patients are treated equally in the treatment process alleviates profiling, patient dumping, and tiered treatment for perceived high-risk populations. Incentives are *not* based on patient compliance or comorbid conditions, but on physicians treating all patients in an equitable manner. By creating a care system focused on equity, we should be able to reduce disparity in healthcare outcomes.

In order to integrate P4QI and HIT initiatives, we suggest that government programs and policy focus on incentive programs that lead to the following:

1. creation of an interoperable health information network to ensure the secure and timely exchange of healthcare data
2. widespread adoption of EHRs and support by government initiatives and policy (providers should be offered incentives to use EHR systems and complementary HIT)
3. incentive measures that focus on quality improvement to ensure equitable treatment
4. P4QI programs based on QI process incentives with the use of HIT documentation, evidence-based decision support tools, and e-registries

Figure 1 illustrates how leveraging technology within a P4QI framework would not only improve immediate patient outcomes but also improve the overall delivery of healthcare. Leveraging technology and focusing on economic incentives for following processes would help to eliminate the fragmentation in care that exists under our current system. By creating a seamless, interoperable HIT infrastructure to facilitate exchange of health information and tying economic incentives to quality processes, not outcomes, providers would be encouraged to work together in providing care for all.

Combining P4QI and HIT programs and incentives will help ensure widespread adoption and compliance and in turn help reduce healthcare outcome disparities. Moreover, combining P4QI and HIT will allow rural hospitals and small physician offices to more easily and cost-effectively monitor patient outcomes, access best practices, and implement decision-support tools. For physicians to receive maximum reimbursement levels under P4QI guidelines, clinical outcome measures as well as process measures related to use of HIT functionalities should be documented in order to ensure best practices.

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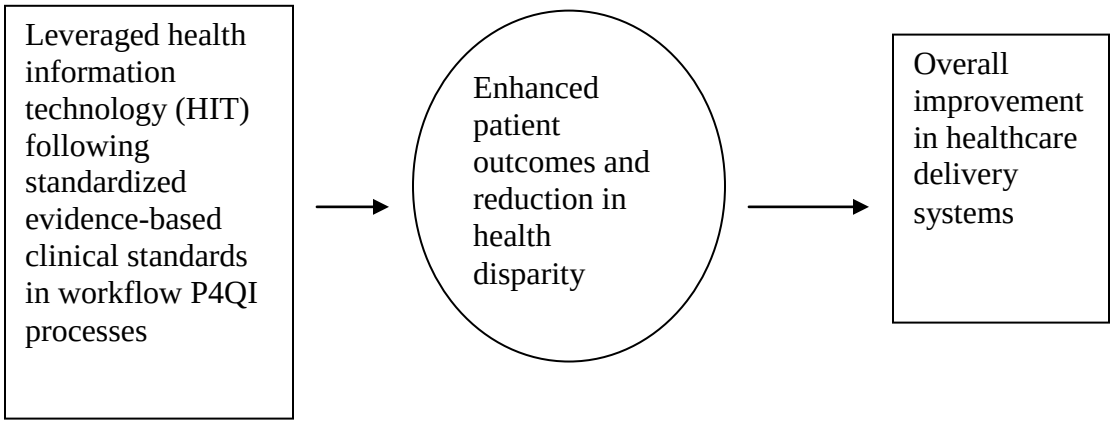
Figure 1

HIT and P4QI Model of Care in Reducing Health Disparities



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