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Evaluating the impact of HIT resources on Patient Welfare: Evidence for the ARRA

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Are HIT resource investments worth the cost?

Why?

With issues ranging from controlling insurance availability and coverage to management of healthcare infrastructure and costs, healthcare is an essential topic of national debate today. Much of the publicized argument, such as the healthcare reform that recently passed in Congress, has centered on how to restore the reimbursement structure in order to contain costs. In the "Healthcare Quarterly," Bhandari addressed the "costs" state of healthcare and insurance in the United States at that time by proposing that cost increases are permissible so long as patient welfare is increasing roughly in tandem with costs. This schematic of the system, as put forth by the authors of the article, is based on related research since that time has sought to measure the relationship between money spent by patients and insurance companies on healthcare and the subsequent benefits.

However, many feel technological resources can also help healthcare providers to cut costs by automating complex, repetitive processes while improving quality of care. For this reason, billions of dollars in financial incentives are also available, through the American Reinvestment and Recovery Act (ARRA), to hospitals that implement state-of-the-art technology in a meaningful way.

As before, economies of scale and regional variation are present, but the same inconclusiveness exists as to the effects of an industry-standard best practices, but have a higher number of patients dying because they treat a less-healthy population. Intermountain Healthcare, for example, can easily stretch into the south. Similarly, the regression output in Figure 2 shows that a hospital in the north has a 2008 mortality rate that is .68 higher on average, and a hospital in the south is .89 higher in the same time period.

Figure 1, it is clear that the average mortality rate for acute myocardial infarction is higher in the north and the south than it is in the west. Furthermore, the regression output in Figure 2 shows that hospitals in the north have a higher mortality rate than those in the south and the south than it is in the west. Similarly, the regression output in Figure 3 shows that hospitals in the north have a higher mortality rate than those in the south and the south than it is in the west.

Figure 3

As discussed above, Medicare reimbursement rates were also studied. The average reimbursement rates for different procedures were regressed separately against a number of independent variables. This section of the paper was intended as exploratory, and so an initial hypothesis was not set. Nonetheless, HIT resources were included in each regression in order to examine the potential effects of their usage on reimbursement levels. The findings shed light on the notion that HIT systems help to increase reimbursement rates to hospitals.

Findings:

Outcome of Care Measures

The results from the various outcome of care regressions retain all of the intuitive characteristics from the data set. Hospital-based mortality rates for acute myocardial infarction are higher in the north and the south than in the west. Similarly, the regression output in Figure 2 shows that hospitals in the north have a higher mortality rate than those in the south and the south than it is in the west.

However, the results for the Outcome of Care Measures do not provide evidence that we can reject the null hypothesis that HIT resources had no significant effect in the way that hospitals treat patients. More specifically, the results for the EMR systems study showed no evidence that HIT resources had an effect on the mortality rate. However, there was little support found between variables associated with hospitals using systems and with hospitals that have an EMR. The regression predicting hospital mortality rates also showed similar outcomes, as did the probit regression predicting the probability of a hospital decreasing their mortality rate.

EMR systems have no effect on the quality of patient care.

Process of Care Measures

Medicare patient mortality rates may be inaccurate indicators of the quality of care present at a facility. To a large extent, a heart attack is a condition whose outcomes depend more on the likelihood of the patient as they do on the treatments received at the hospital. For example, a patient who is still in the hospital, treating patients with industry-standard best-practice procedures, but have a higher number of patients dying because they treat a less-healthy population. Intermountain Healthcare, for example, can easily stretch into the south. Similarly, the regression output in Figure 2 shows that a hospital in the north has a higher mortality rate than those in the south and the south than it is in the west.

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Figure 4

Reimbursement Rates:

HIT systems are high-ticket items. The purchase of a new EMR, for example, can cost from $500,000 to $1 million, or even upwards of $10 million for hospitals treating patients with EHRs. However, the government wants to provide enough incentives to cover some costs associated with the new revenue in order to allow the providers to operate in a lower cost environment. The American Recovery and Reinvestment Act (ARRA) of 2009 introduced new incentives for the implementation of electronic health records (EHRs).

If this is the case, then the government should be clear that the aims of the subsidy are not improvement of patient well-being, but cost containment. Although this is a much harder sale politically, the findings from this research show it to be the truth.