National Institutes of Health
Health Economics Working Group Meeting
May 21, 2014

SUMMARY OF GUEST SPEAKER PRESENTATION[1]

Designing Health Plan Networks to Steer Patients to Higher-value Providers[2]
Guest Speaker: Chapin White, RAND[3]

Background and Motivation

Broadly, the U.S. hospital industry has inconsistent safety and quality and yet is by far the most expensive in the world (e.g., dollars per discharge, dollars per day). Variation exists among hospitals in their quality of care, operating expenses, unit prices, and value. There are three potential approaches to spend less and/or get better results in U.S. hospitals: 1) competition through health plan networks resulting in individuals steering themselves or physicians steering patients to higher-value, lower-cost hospitals; 2) payment incentives; or 3) regulation (e.g. minimum nurse staffing ratios). This research presentation focused on the feasibility of competition among health plans, and the use of networks, as a lever for improving the quality and lowering the cost at short-term, acute, general hospitals in the United States.

The hypotheses for this research include: 1) value varies from hospital to hospital, which implies potential gains from steering; 2) network-based health plans steer patients to higher-value hospitals. The first hypothesis is fairly self-evident.

Quality will be measured using the total performance score metric created by the Centers for Medicare and Medicaid Services (CMS).[4] This composite score is a measure of how well a hospital is performing including three domains: 1) process-based measures (e.g., is the right service provided for a given clinical situation); 2) outcomes (mortality for selected conditions adjusted for risk); and 3) patient experience as measured by surveys. As with all measures, there are limitations to this metric. For example, year-to-year improvement in quality at the hospital level is incorporated in the measure. However, despite it being imperfect, two advantages of using the total performance score for the purpose of this research are that it has been painstakingly created by CMS with a great deal of methodological documentation and it is meaningful to hospitals and CMS because there are real financial incentives tied to the score.

The level of resources a hospital spends on treating a discharge will be measured as "standardized cost per case," which includes hospital operating expenses from Medicare fee-

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[1] Summary prepared by Chandra Keller-Allen, Rose Li and Associates, Inc.
[2] The views presented in this presentation summary are those of the invited speaker and do not necessarily represent those of the author's current or former employers or funders.
[3] http://www.rand.org/about/people/w/white_chapin.html
[4] http://www.medicare.gov/hospitalcompare/data/total-performance-scores.html?AspxAutoDetectCookieSupport=1

for-service (FFS) discharges adjusted for case mix, local wages, and teaching load at the hospital. These data are calculated from CMS hospital cost reports.[5] While there are some legitimate methodological issues with the accuracy of the data in the cost reports and the cost-to-charge ratios, it is still the best existing measure for the purpose of this inquiry.

Evidence for Hypothesis 1: Value Varies Among Hospitals

There is considerable variation in the price that is paid to one hospital for a given service compared to the same service at a different hospital, based on claims data for almost 600,000 individuals from 13 mid-western U.S. metropolitan areas.[6] Average hospital prices for patients with private insurance were found to be about one-and-a-half times Medicare rates for inpatient services and two times Medicare rates for outpatient services. Prices also varied widely within individual communities.

A scatterplot of individual short-term, acute, general hospitals along an X-axis of costs as measured by standardized cost per case and a Y-axis of quality as measured by the CMS total performance score displays wide variation in value. Dividing the scatterplot into quadrants, with the center being the national averages of cost and quality, results in four groups of hospitals:

- Quadrant I: low cost, high quality (upper left)
- Quadrant II: high cost, high quality (upper right)
- Quadrant III: low cost, low quality (lower left)
- Quadrant IV: high cost, low quality (lower right)

Evidence for Hypothesis 2: Network-based Health Plans Steer Patients to Quadrant I

Network-based plans are characterized as those that contract with selected providers and services provided outside the network are either not covered (health maintenance organization [HMO]) or are covered with a higher patient copay amount (preferred provider organization [PPO]). For example, Medicare Advantage and many employer-sponsored health plans are network-based plans whereas Medicare FFS and traditional Medicaid plans are not network-based. White and colleagues sought to answer the question: Do patients in network-based plans go to higher-value (Quadrant I) hospitals? For the purpose of this inquiry, there are two types of differences between patients in network-based plans versus other patients: they tend to live in different geographical areas (residence effect) and they could be steered to different hospitals by their plans (steering effect).

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[5] http://www.cms.gov/Research-Statistics-Data-and-Systems/Files-for-Order/CostReports/index.html?redirect=/costreports/
[6] White, C., Bond, A. M., & Reschovsky, D. (2013). High and varying prices for privately insured patients underscore hospital market power. Center for Studying Health System Change, Research Brief No. 27. Retrieved May 30, 2014 from http://www.hschange.com/CONTENT/1375/1375.pdf.

The weighted average standardized cost per case and average quality score will first be measured nationwide for all patients. Two sets of cost and quality measures will be created for each type of plan: 1) predicted cost and quality based on where enrollees live (the residence effect); and 2) cost and quality based on the hospitals where enrollees actually received care. The latter measure will allow investigators to obtain the sum of the residence and steering effects.

Results of a preliminary analysis indicate that the steering effect for network versus non-network plans is in the hypothesized direction, but the magnitude of effect is very small. A residence effect moves Medicare Advantage enrollees toward lower-cost hospitals and a steering effect pushes them slightly toward higher-quality and lower-cost hospitals. A residence effect for Medicare FFS enrollees pushes them toward less expensive hospitals, but a steering effect pushes them towards slightly more expensive and slightly higher-quality hospitals. Private plan enrollees tend to live in areas with more expensive hospitals and a steering effect pushes them somewhat toward less expensive hospitals that are of lower quality.

There are several reasons why the preliminary analysis did not find stronger evidence of a steering effect. One reason might be measurement error. It is possible that the average cost per case measure used is different than the prices that health plans pay directly to hospitals for services. Similarly, the total performance score might not be accurately measuring quality because it incorporates improvement; perhaps hospitals are better than indicated with this score. Another issue might be with how network plans have been defined. Private health plans were considered network plans for this analysis; however, in reality, typical private plans have networks that are much broader than a traditional HMO. Other features of private health plans dilute the effects of their network status (e.g., tax exclusion for employer-sponsored plans effectively subsidize broad networks, pass-through financing of self-funded employer plans). Another major reason for lack of a greater steering effect may be that hospitals have a tremendous amount of negotiating leverage with health plans—both in and out of network—to negotiate prices.

Hospital Leverage

So, why do we not see more steering of patients to high-value hospitals? One possibility is that health plans have little ability to exclude low-value hospitals from their networks. Plotting the Herfindahl index and cumulative population score of individual hospitals indicates that the market for hospital care looks reasonably competitive in most markets. However, these data are deceiving because many hospitals are consolidating into larger systems that negotiate with plans as one entity. Further, there is very little competition over specialized services, such as Level I Trauma Centers, heart transplant hospitals, and hospitals with neo-natal intensive care units. This lack of competition constrains health plans' ability to steer patients toward lower-cost, higher-quality hospitals (e.g., there is no pool of other available Level I Trauma centers in the market to which to steer enrollees). This considerable hospital leverage leads to higher prices.

Researchers at RAND are looking further at steering in the Medicare Advantage program with additional data. When the expected Herfindahl index based on discharge patients among FFS enrollees is plotted against the actual Herfindahl index of actual Medicare Advantage plans, the data provide further evidence that Medicare Advantage steers patients to a subset of hospitals. Medicare Advantage might be able to do more steering of patients compared to private plans because there are out-of-network protections. Rates for out-of-network services are limited to FFS rates and balance billing to patients is not allowed—both of these features put Medicare Advantage in a stronger bargaining position.

There are excellent data available to examine networks, quality, and costs in Medicare plans, but there is a significant lack of comparable data on private plans. Data on private plans' networks, benefit designs, patient flows, hospital payment methods, and negotiated prices are needed for comparable analyses.

In general, there is a role for competition as a lever for improving quality and cost of care; however, because the hospital sector is so consolidated, there needs to be other strategies as well. Increasing competition in hospital markets might be a feasible strategy to increase the value of hospital care in large, densely populated areas, though perhaps only for standard, non-specialized services that are provided by typical community hospitals. Out-of-network price protections, akin to those seen in the Medicare Advantage program, could be effective for emboldening plans to negotiate more aggressively, cutting low-value hospitals out of their networks, and increasing the steering effect of network plans. Another strategy to strengthen the steering effect could be improved and consolidated quality metrics; these metrics have improved greatly over the last decade and are taken more seriously now. CMS and the Agency for Healthcare Research and Quality (AHRQ) are directing significant resources toward developing and refining quality metrics. New data on health exchange plans and the hospitals they include in their networks might offer additional insight.