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Pay-for-Performance Through the Lens of Unwarranted Variation in the Delivery of Health Care

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purchaser is not new. Within health care, where payment is based on “doing” rather than “producing” (a valued product), it is a revolution.

Unwarranted Variation in the Delivery of Health Care

We consider P4P through the lens of unwarranted variation in the delivery of health care.⁴ Through this lens we consider variations to be unwarranted when they cannot be explained by illness, patient preferences or the dictates of evidence-based medicine. The second component of the unwarranted variation lens is the categorization of care into three buckets. These are:

- 1) Effective and safe care—This category of care includes treatments that improve longevity or quality of life and have been studied in randomized trials or well-constructed cohort studies. Treatments such as beta-blocker therapy following an acute myocardial infarction (AMI or heart attack), treating hypertension in patients with diabetes with ACE inhibitors, and influenza vaccination are effective care interventions. Safe care includes efforts to reduce mortality following coronary artery bypass surgery.
- 2) Preference-sensitive care—This category of care includes conditions where there are options in treatment, where the options have different risk-benefit ratios and where only the patient can evaluate the risks and benefits. These conditions include lumbar disc disease with sciatica where the

The Problem

Tremendous paradoxes face all of us when we consider the U.S. health care system. On the one hand, advanced technical therapeutics are used on a daily basis to save lives¹; on the other hand, opportunities to dramatically improve care for large segments of the population through the provision of more mundane services are routinely missed.² In addition, although the U.S. economy is seen as one of the most efficient in the world, the rising cost of employer-sponsored health care erodes gains obtained through efficiency and threatens to bankrupt the U.S. automobile industry. Finally, wherever one looks, there is tremendous variation in the delivery of health care across the United States.³ It is in the context of such paradoxes that a new initiative is gathering steam: pay-for-performance (P4P). Outside of health care, the concept that “reimbursement” should be based on value to the

¹ Grunebaum E, Mazzolari E, Porta F. et al. Bone marrow transplantation for severe combined immune deficiency. *JAMA*. 2006; 295: 508-518.

² McGlynn EA, Asch, S.M., Adams J. et al. The quality of health care delivered to adults in the United States. *N Engl J Med*. 2003; 348: 2635-2645.

³ Wennberg, D.E. and Cooper, M.A. *Dartmouth Atlas of Healthcare*. 1999. Chicago, American Hospital Publishing. Ref Type: Generic.

⁴ Wennberg, D.E., Wennberg, J.E. Addressing variations: Is there hope for the future? *Health Aff (Millwood)*. 2003; Suppl Web Exclusives: W3-W7.

options are “watchful waiting” or surgical intervention. For sciatica most patients will be pain free in six months with either treatment. Surgery gets you there quicker, but carries the risk of chronic back syndrome in approximately 10 percent of the patients undergoing surgery.

- 3) Supply-sensitive care—This category of care includes specialist visits, laboratory studies, imaging studies and the use of the hospital and emergency room as a place of service. The amount of supply-sensitive care delivered is influenced by the capacity of the system. More beds and more specialists per capita result in more use. Variation in the delivery of supply-sensitive care differentiates efficient from less efficient health systems.

The causes of variation differ by each category; therefore, the remedies also must differ. Next we consider the implications for P4P through an unwarranted variation lens.

P4P Through the Unwarranted Variation Lens

The first consideration in interventions to address variation is the intended direction of the intervention.

Effective and safe care: For effective and safe care, evidence suggests that more is better. One example of this is a recent paper on the use of beta-blockers following an AMI where patients receiving their care in health care systems that pay attention to the simple things lived longer than those receiving care in more invasive intervention-minded systems.⁵

These findings place effective care on the quality agenda. Interventions, including P4P, should be aimed at increasing the use of these services.

Preference-sensitive care: For preference-sensitive care, it is unclear whether more is better.

In general, patients participating in shared decision making, where their preferences are revealed and honored, are more likely to choose the conservative treatment, but not always.⁶ However, what is clear is that patients choose differently when objective, evidence-based decision aids are used than when usual care is provided.

These findings place preference-sensitive care on the quality agenda. Interventions, including P4P, should be aimed toward exposing patients’ true preferences and values for the risks and benefits and supporting them in efforts to choose treatment in accordance to these preferences and values.

Supply-sensitive care: For supply-sensitive care, more is worse. In several well-constructed cohort studies, patients exposed to health care systems that deliver more supply-sensitive care use significantly more resources and do not live longer than those exposed to more efficient care. In fact, the evidence suggests that those who receive more supply sensitive care are more likely to die.⁷⁻⁹

These findings place supply-sensitive care on the quality agenda. Interventions, including P4P, should be aimed at reducing the use of supply-sensitive services, or encouraging the choice of health care systems that provide fewer supply-sensitive services.

Curious Findings Through the Unwarranted Variation Lens

P4P programs should include all three categories of care. When they do, interesting findings arise.

Curious finding #1: There is no relationship between quality in one measure and quality in another. Health care systems that perform well on one effective care measure—for example, lipid management for diabetics—are no more or less likely to perform well on others—for example, controller medication for patients with asthma. While there are some

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⁵ Stukel, T.A., Lucas, F.L., Wennberg, D.E. Long-term outcomes of regional variations in intensity of invasive vs. medical management of Medicare Patients with acute myocardial infarction. *JAMA*. 2005; 293: 1329-1337.

⁶ O’connor, A.M., Llewellyn-Thomas, H.A., Flood, A.B. Modifying unwarranted variations in health care: Shared decision making using patient decision aids. *Health Aff (Millwood)*. 2004; Suppl Web Exclusive: VAR63-VAR72.

⁷ Fisher, E.S., Wennberg, D.E., Stukel, T.A., Gottlieb, D.J., Lucas, F.L., Pinder, E.L. The implications of regional variations in Medicare spending. Part 1: the content, quality, and accessibility of care. *Ann Intern Med*. 2003; 138:273-287.

⁸ Fisher, E.S., Wennberg, D.E., Stukel, T.A., Gottlieb, D.J., Lucas, F.L., Pinder, E.L. The implications of regional variations in Medicare spending. Part 2: health outcomes and satisfaction with care. *Ann Intern Med*. 2003; 138: 288-298.

⁹ Fisher, E.S., Wennberg, D.E., Stukel, T.A., Gottlieb, D.J. Variations in the longitudinal efficiency of academic medical centers. *Health Aff (Millwood)*. 2004; Suppl Web Exclusive: VAR19-VAR32.

who perform well on both or who perform poorly on both, overall there is no correlation. How can that be? While data is sparse, it is likely driven by the underlying principle that performance of routine care needs to be systematized. For effective care this means that routine use of total population registries (as opposed to disease-specific), standing orders, flow sheets and other tools is critical. It also suggests that non-physician caregivers should be the key providers of routine, low-tech effective care. This finding of no correlation across measures has significant implications for P4P programs.

Currently, most P4P programs are focused on single diseases and/or single measures¹⁰. An alternative approach would be to reward providers for developing, implementing and using the systems and processes needed to assure a consistent, non-variable approach to the delivery of effective care. While it may be politically impossible not to also consider actual performance toward measures, it is our contention that these should initially be an adjunct to rewarding for the systems.

Curious finding #2: Preference-sensitive care is driven by providers. Variations in preference-sensitive care have been considered geographic phenomena. However, recent studies have found that the geographic findings are a weighted average of the behavior of all the providers within the region. This realization leads to the consideration that for P4P to reduce unwarranted variation in the delivery of preference-sensitive care, providers should be rewarded for developing systems and processes to ensure shared decision making and that their patients use this approach. There is a growing suite of well-developed decision aids now available that aim to reveal patients' preferences and values.

Curious finding #3: There is no correlation between effective care and supply-sensitive care. While the explicit focus of most current P4P programs is to improve the delivery of effective care, there is an implicit expectation that these efforts will result in a salutary improvement in the efficiency of health care as well. Given that very well respected employers spearhead these efforts, this second expectation is not surprising. In most manufacturing and service oriented settings, there is a direct relationship between quality and efficiency.

When a defect occurs on the line stopping production or becomes evident post-release requiring recalls, costs increase. However, effective care is a minority of services delivered (we estimate only 15-18 percent of care, while supply-sensitive care is the majority (approximately 50-60 percent of care). Thus, improvements in effective care are lost in the noise of the primary driver of efficiency—the delivery of supply-sensitive care. When we have evaluated the relationship at the system level between efficient health care and effective health we find the correlation to be zero.

Curious finding #4: Episodic efficiency does not equate to overall efficiency. Current efforts to evaluate and reward providers for the delivery of efficient care primarily use an episode-based system. In these systems one attempts to assess the technical efficiency in the delivery of health care, that is, the amount of inputs used to deliver a unit of care. For example, how much it will cost to deliver a cardiac revascularization? However, what is missed in this approach is the question of whether the episode, in this case the cardiac procedure, should have occurred at all.

A more defensible measure of efficiency is allocative efficiency, that is the amount of inputs used to deliver health. The cost of managing (or insuring) a population is a function of the price per unit and the number of units delivered. When we evaluate the allocative efficiency of health care systems, we find that 75 percent of the explainable variance in efficiency is associated with the number of units delivered and only 25 percent with the technical efficiency.

Wrapping it Up

Through the unwarranted variation lens the domains of health care quality can be expanded; insights into the drivers and the potential remedies of variation in quality can be obtained; and P4P programs can be created to deliver broad value to purchasers, providers and recipients of health care. The pioneers who are championing P4P programs have taken a revolutionary step forward in a fee-for-service dominant world. It is time to join them in the next evolution. 📌



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¹⁰ Rosenthal, M.B., Frank, R.G., Li, Z., Epstein, A.M. Early experience with pay-for-performance: from concept to practice. JAMA. 2005; 294: 1788-1793.