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New Concepts for Reducing Costs and Increasing Quality

by Roy Goldman

Of the three issues in health care—coverage, financing, and cost—the overriding issue is holding down the growth in health care costs while simultaneously improving the quality of care. Actuaries have traditionally played a major role in the first two issues, but our most significant contribution today and tomorrow is to apply our analytical and creative skills to reduce the growth in health care costs.

Eventually and, I believe, sooner rather than later, the United States will join the rest of the world in providing universal coverage. One could argue this is the right thing to do for moral reasons, but is it also the right thing to do in order to keep the population healthy. But universal coverage is not a "silver bullet" for reducing the growth of health care costs.

Take Medicare, for example. It's a near-universal system for people over 65, yet the only way CMS has been able to control the growth in cost of traditional Medicare is by unilaterally making changes in the reimbursement factors, which shifts costs to other payers.[1] While CMS achieves some administrative savings due to uniform billing and claims payment methodology, the lack of care management techniques gives CMS no mechanism for controlling the factors that contribute to health care costs.

To be clear, when I use the phrase "universal coverage," I do not mean "single payer." No matter how universal coverage is established, whether through a national system, which is unlikely in the near term, or through a combination of Medicaid expansion, employer "pay or play" options, and health purchasing cooperatives, clinical and actuarial input will be needed to insure that there are fair mechanisms in place to control the growth in costs while improving quality.

Cost Drivers

Some people think the answer to controlling health care costs is in benefit design by making sure the consumer has a financial stake in the cost of his care. I think that some cost sharing is definitely needed, but I do not agree that high-deductible plans are the answer. Relatively few insureds have large enough expenses to meet these high deductibles, and those that do often have a chronic condition or have had an acute episode or accident, and they cannot reduce costs below the deductible.

In my opinion, a better approach is to:

(1) give both providers and consumers access to information as to what services cost;

(2) design benefits with incentives for the consumer to obtain necessary preventive care and necessary treatment to keep whatever conditions they have from getting worse; and (3) give consumers incentives to seek care from the most efficient providers.

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[1] The Pennsylvania Health Care Cost Containment Council *(www.PHC4.org)* 2006 report of the financial health of Pennsylvania hospitals. The council states that "costs are shifting to offset Medicare underpayment."

(continued on page 8)

But even this approach is simply playing around the edges. If we are going to successfully control the growth in health care costs, we need to go to the source. Even with the advent of managed care, physicians still drive the system. There have been numerous publications by the Institute of Medicine, the Rand Corporation, and others with examples of inappropriate care that leads to unnecessary expense or a poor outcome, which, in turn, drives more expense.[2,3,4] The most surprising news for the average consumer is that fewer than 55 percent of adult patients receive recommended care, and this result is independent of age, gender, and income.[5]

Stand-alone programs such as disease management, consumer cost sharing, electronic medical records (EHR), and pay-for-performance (P4P) are not by themselves the solution.

As I have studied this business over the last twenty years, the expert opinion that I have received from physicians has consistently pointed to the variation in procedures and outcomes as the key driver of health care costs. What would happen if there were mechanisms in place to make sure all physicians followed the best-evidence clinical guidelines every time? This is a question we are trying to answer at the Geisinger Health System with our ProvenCare℠ and Geisinger Medical Home models.

First, a little more background is helpful. Fifteen years ago physicians at the Rand Corporation concluded that 60 percent of the Coronary Artery Bypass Graft operations (CABGs) should not have been performed. Yet, did cardiologists and cardiac surgeons change the way they practiced? Some did, of course, but not the majority. As late as 2003 the rate of CABGs for Medicare enrollees varied from 1.9 per 1000 to 9.5 in regions throughout the U.S.[6]

Why didn't all cardiologists change their practice? Often it is because the study was not conducted *at their facility*. I know a group of cardiologists who were considered "cash cows" by the hospital system that employed them. When the hospital system decided that it would be better off taking full risk from the health plan, they put the cardiologists on capitation. The capitation was insufficient to support business as usual, so the physicians decided to review all the CABG operations performed in the prior year. Guess what? They found that 40 percent of them were probably unnecessary—a conclusion published by the Rand Corporation 10 years earlier.

Still today there is great variation in outcomes and procedures related to CABGs.

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2 Kohn LT, Corrigan JM, Donaldson MS, editors. To Err is Human: *Building a Safer Health System,* National Academy Press, Washington, 2000.

3 Committee on Quality Health Care in America, Institute of Medicine, *Crossing the Quality Chasm: A New Health System for the 21st Century,* National Academy Press, Washington, 2001.

4 Schuster MA, McGlynn EA, Brook RH, "How Good is the Quality of Health Care in the United States?" *The Milbank Quarterly,* Vol. 76, 1998, pp517-63.

5 McGlynn EA, Asch SM, Adams J, et al., "The Quality of Health Care Delivered to Adults in the United States," *The New England Journal of Medicine,* Vol. 348(26), June 26, 2003, pp2263-645.

6 Regional variations in rates of Coronary Artery Bypass Grafting. Dartmouth Atlas of Health Care: Studies of Surgical Variation. *(http://www.dartmouthatlas.org/atlases)*

- 30-day mortality (2003) for selected states: NY (1.6%), NJ (2.3%), PA (2.4%), CA (2.9%)[7]
- Hospital mortality rates in PA (2003): from 0.4% to 3.0%[7]
- Hospital seven-day readmission rates: from 1.1% to 10.5%[7]
- Statin usage: when used, the mortality rate is 2.5% vs. 5.6% when they are not used; when used, the morbidity rate is 5.9% vs. 8.3% when not used[8]
- Post-operative atrial fibrillation increases length of stay up to five days, increases charges by $10,000 and is associated with a 2-3 fold increase in post-operative stroke. Virtually every study of beta-blockers used to reduce post-operative atrial fibrillation has shown significant benefit.[9] Yet, beta blockers are not administered every time they are required.
- Surgical infection rates are reduced more than 50 percent when pre-operative antibiotics are given appropriately. Yet, only 23 percent of hospitals had a system to ensure proper administration.[9]

Current Environment for Acute Care

Physicians at Geisinger Health System, which is known as a high-quality system in Pennsylvania, characterize typical acute care in the United States as having:

- Uncertain appropriateness
- Unreliable compliance with evidence-based guidelines
- Lack of outcomes and quality accountability
- Incomplete communication across continuum of care
- À la carte payment for services
- Perverse incentives: more payment for complications
- Limited patient engagement

Current payment methodologies do not recognize health care quality or efficiency. Stand-alone programs such as disease management, consumer cost sharing, electronic medical records (EHR) and pay-for-performance (P4P) are not by themselves the solution. Geisinger has had an EHR for 10 years and while it is necessary for optimal care, it is not sufficient unless used to (1) identify patients who need certain tests or medications and (2) guide physicians in practicing evidence-based medicine. The physicians see P4P as generally insurer-imposed, outpatient-care based, chronic-diseased focused and often bonuses are paid for process improvement rather than outcome improvement.

Transformational Approaches to Health Care

The remainder of this article discusses two programs that have been initiated by Geisinger Insurance Operations in conjunction with the Geisinger hospitals and physicians as well as with non-Geisinger physicians with whom we contract. One deals with specialty care and the other with primary care.

Both approaches seek to transform the way care is currently delivered. Both are patient centric and outcomes focused. Both approaches systematically apply evidence-based care and seek to increase the reliability of quality outcomes. One approach, ProvenCare℠, takes dead aim at removing perverse incentives while the other, Geisinger Medical Home, seeks to contain costs through full-time coordination of care for patients.

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[7] PHC4 2004 report

[8] *JTCVS,* Vol. 131, March 2006, pp. 679-85

[9] Presentation by Alfred Casale, MD, lead author of "ProvenCare℠: A Provider Driven Pay-for-Performance Program for Acute Episodic Cardiac Surgical Care." To be published in Annals of Surgery.

(continued on page 10)

ProvenCare℠

In the ProvenCare℠ model, hospitals and physicians are paid a global fee for a given operation that covers pre-operative, inpatient, and post-operative care *including any complications* up to, say, 90 days after discharge. This approach is much broader than a diagnosis-based reimbursement method because it covers the entire episode of care. Since there is no guarantee of a perfect outcome for every patient, the providers have a financial incentive to re-engineer their processes to optimize the probability of a good outcome. To accomplish this transformation, the approach needs to be patient centric and outcomes focused with evidenced-based care consistently applied.

Geisinger Health System (Geisinger) introduced ProvenCare℠ in February 2006 to apply to non-emergent CABG operations. It is available to all insured commercial and Medicare members of Geisinger Insurance Operations. Geisinger's surgeons reviewed the literature and after months of study and argument, unanimously agreed on 40 verifiable, actionable, best practice behaviors.

These behaviors cover:

- pre-admission documentation (12 items including screening for stroke risk and patient preferences)
- operative documentation (eight items including correct dosing of beta-blocker and administration of pre-op antibiotic)
- post-operative documentation (10 items including monitoring for atrial fibrillation for > 48 hours, tobacco counseling, and administering aspirin, beta-blockers, and statins)
- discharge documentation (four items including cardiac rehabilitation and prescriptions for aspirin, beta-blockers and statins)
- post-discharge documentation (six items including monitoring tobacco use, rehabilitation activity, and use of aspirin, beta-blockers, and statins)

Geisinger's CABG program was already considered one of the best in the state of Pennsylvania[10], yet, initially, only 59 percent of patients received all 40 best practice behaviors. Within six months all patients consistently received 100 percent of the behaviors, and this reliability has remained at this level for over a year.

As you can see from the various behaviors, the patient must be engaged as a partner in the care process. Indeed, the patient is asked to sign a participation agreement wherein he agrees to comply with recommended medications, complete cardiac rehabilitation, engage with hospital and health plan care management services, stop smoking and manage weight.

	Before ProvenCare℠ (n=137)	*With Improvement ProvenCare℠* (n=117)	*After* (% Reduction)
In-hospital mortality (death)	1.5%	0%	100%
Patients with any complication (STS)	39%	35%	10%
Atrial fibrillation	23%	26%	0%
Any pulmonary comp	7.3%	2.6%	64%
Re-admit ICU	2.9%	0.9%	69%
Blood products used	23%	6%	30%
Re-operation for bleeding	3.6%	2.6%	28%
Deep sternal wound infection	0.7%	0.8%	0%
Discharged not to home	19%	9%	53%*
Readmission within 30 days	6.6%	5.1%	23%

*statistically significant at p=0.033

[10] Pennsylvania's Guide to Coronary Artery Bypass Graft Surgery, PHC4 report *(http://www.phc4.org/reports/cardiaccare.htm)*

As shown in the table on page 10, results after 12 months showed improvement in all outcome measurements.

In addition, from a cost perspective, length of stay decreased by 16 percent and mean hospital charges fell by 5.2 percent. Considering the actionable behaviors, it should not be surprising that NCQA rates Geisinger Health Plan as #1 in the country in appropriate use of beta-blockers. Geisinger aims to develop a suite of ProvenCare℠ services that cover gastric bypass, knee and hip replacements, cataract surgery, and emergent CABG.

Geisinger Medical Home

The typical primary care physician feels underpaid, overworked, and under appreciated. The current primary care model is better suited to manage acute illness rather than chronic conditions. Primary care is episodic (one patient at a time), fragmented, and lacks a coordinated patient-centered approach to care. The burden of chronic care requires a change in strategy.

Medical Home is a concept that has appeared in the medical literature[11] as a replacement to the way physicians and their nursing and office staffs interact with patients and the community. The integrated nature of Geisinger Health System allows for a unique opportunity to create a Geisinger Medical Home that partners with the health plan to re-design primary care and improve quality and cost outcomes.

Essentially, PCP's offices are transformed into a patient care management center ("home"). I refer to it as a "full-court press." Patients are put at the center with easy access to practice personnel including same-day appointments, extended hours, after-hour availability, home visits, and nursing home visits. Partnerships are created with the local emergency rooms, specialists and community resources so that patients can obtain the best outcomes in the most cost-effective environment.

If an emergency room visit is required, the practice manages the patient while in observation and discusses treatment options prior to admission. If admitted to a hospital, nursing home, or end-of-life care, the patient is closely monitored using the most advanced techniques of case/disease/complex management, EHR and chronic care guidelines.

Success is measured by a range of quality and efficiency metrics:

- Number of "care" visits
- Use of best-practice guidelines for diabetes and coronary artery disease
- Vaccinations for flu and pneumonia
- Patient satisfaction
- Documented care plans
- Risk assessments
- Emergency room visits
- Acute admissions, especially for avoidable conditions
- Readmission rates
- PMPM medical costs

Geisinger Insurance Operations is currently working with physician sites to create Medical Homes for Medicare and commercial members. To be successful, each site requires committed and *engaged physician leadership* and full time *nursing support* from the health plan. The health plan also supplies *integrated population management* (i.e., wellness and disease, case, and complex-care management) and *analytical support* to measure results and help physicians to spot trends on a daily, weekly, and monthly basis.

Actuarial modeling is needed for each potential site to determine baseline metrics and reasonable targets for improvement. Modeling is also required to design an *innovative payment model* that encourages physicians and their office staff at a given site to make the necessary substantial changes in their practices while, at the same time, ensuring that incentives are aligned for all stakeholders.

[11] The American Academy of Pediatrics (1992), The American Academy of Family Physicians (2004), and The American College of Physicians (2006) have all described versions of a medical home concept as has Ed Wagner in his Chronic Care Model.