



Case Study

High-Performing Health Care Organization • March 2009

Hill Physicians Medical Group: Independent Physicians Working to Improve Quality and Reduce Costs

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NEW AMERICA FOUNDATION

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Vital Signs

Location: Northern California

Type: Independent practice association, with more than 2,200 physicians, 800 in primary care. Hill serves 332,000 patients enrolled in seven HMOs, two Medicare Advantage plans, and Medi-Cal, California's Medicaid Program. Hill physicians have their practices at 1,600 offices, and work as well in 30 hospitals and 15 urgent care centers.



ABSTRACT: Hill Physicians Medical Group is the nation's largest independent practice association, with more than 2,200 physicians, 800 in primary care. Established in 1984 in Northern California, Hill serves 332,000 patients enrolled in seven HMOs, two Medicare Advantage plans, and Medi-Cal, California's Medicaid Program. Hill member physicians have practices at 1,600 offices, and work in 30 hospitals and 15 urgent care centers. Hill demonstrates how an affiliated group of independent physicians can improve clinical outcomes, increase efficiency, and engender physician support for quality improvement and cost reduction activities. Working with health educators, member physicians have improved patient care: the number of diabetics in control of their blood sugar levels increased by 42 percent and patients in control of their cholesterol levels increased by 32 percent. Through the group, physicians are informed about and encouraged to participate in quality improvement initiatives and receive health information technology training and products.

INTRODUCTION

This case study explores how a group of independent physicians is able to change its behavior and improve clinical outcomes through an innovative financial incentive system—in combination with a careful campaign to implement quality improvement processes. To change how its physicians practice medicine, Hill Physicians Medical Group has created a layer of organization uniting these otherwise unaffiliated independent doctors. New financial and personnel support

has led to communication and cooperation that makes cultural change possible.

In this paper, we first examine the Hill Physicians Medical Group organization and management structure. Second, we describe selected quality innovations implemented by the group, including the use of health information technology, innovative care management methods, predictive modeling, and financial incentives. Finally, we review the lessons of the Hill Physicians Medical Group’s campaign to improve the delivery of care.

ORGANIZATIONAL OVERVIEW

Physicians

Hill Physicians Medical Group (“Hill”) in northern California is the nation’s largest independent practice association (IPA).^{1*} It comprises 2,200 physicians in practices ranging in size from solo practitioner to large groups, including about 800 primary care physicians in 450 practices and approximately 1,400 physicians in

* An independent practice association, or IPA, is a medical group whose physicians are in independent practice. Physicians participate in the medical group by contract. The medical group then contracts with health plans and manages the delivery of health care for a large number of health plan patient-members. The physicians usually maintain their own offices, separate from other physicians in the IPA.

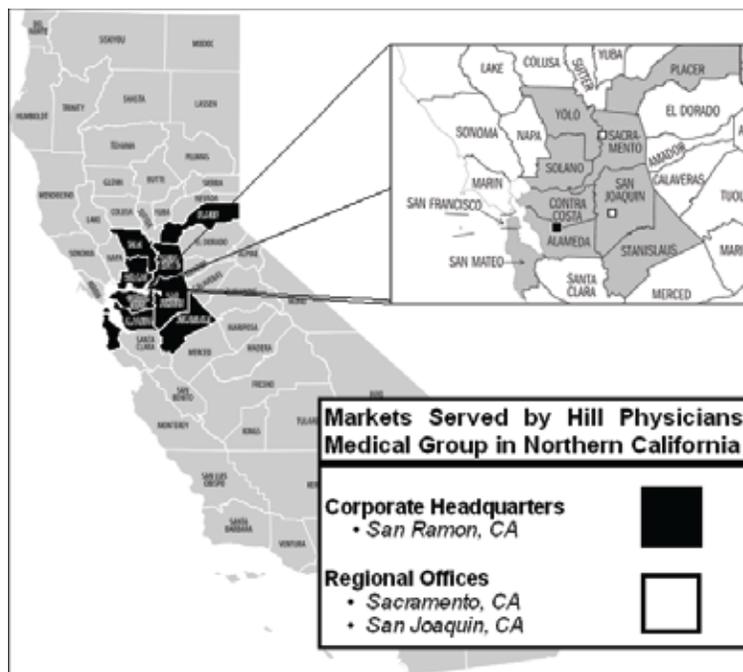
850 specialist practices. Physicians in the group deliver services in 30 hospitals and 15 urgent care centers.

These otherwise independent physicians are driven toward shared quality and efficiency goals by an active physician leadership team. More than 100 physicians serve on a variety of Hill committees, where they provide important leadership and guidance on finance, membership, quality, continuing medical education, information technology, and peer review issues. Some physicians also serve as regional medical directors. All these physician leaders maintain active clinical practices. By improving the coordination, quality, and cost-efficiency of care, Hill is building a high-performing health care system among affiliated autonomous physicians. In a sense, Hill is a “virtual organization”—it is not fully integrated but takes on some of the characteristics of a multispecialty group.

Patient Population

Hill renders care to 332,000 patients who are enrolled in HMO plans in Northern California. Patients are located in 10 Northern California counties: Alameda, Contra Costa, Placer, Sacramento, San Francisco, San

Exhibit 1. Markets Served by Hill Physicians Medical Group in Northern California



Joaquin, San Mateo, Solano, Stanislaus, and Yolo. Owing to the diversity of the patient base, Hill's call center interprets and responds to calls in 124 different languages and dialects.

Most HMO patient visits with Hill member physicians are a result of Hill–HMO contracts. On average, these Hill–HMO patients represent 40 percent of the average primary care physician member's patient base; this can range from physicians with only 20 Hill enrollees to physicians who see only Hill enrollees, that is, these patients are 100 percent of their patient base.

Management

Hill is a for-profit, professional corporation lead by a shareholder-elected Board of Directors comprising 12 physicians. The Board partners with its management company, PriMed Management Consulting Services. The Hill–PriMed relationship is exclusive. Led by long-time CEO Steve McDermott, PriMed organized Hill in 1984 and has played a key role in the group's success. Approximately 400 PriMed employees support Hill by providing administrative assistance, including technology infrastructure, claims processing, customer service, and case management and authorization reviews. PriMed also negotiates and manages the contracts with health plans.

Payers

Hill serves the enrollees of seven California HMO health plans: Aetna, Blue Cross, Blue Shield, CIGNA, HealthNet, Pacificare, and Western Health Advantage. For its senior population, Hill contracts with two Medicare Advantage plans: Health Net Seniority Plus and Pacificare Secure Horizons. Hill also accepts Medi-Cal payments. According to their contractual agreements, health plans pay Hill on a capitated (pre-paid per member per month) basis. Hill then reimburses the individual physicians on a fee-for-service basis plus performance bonuses.

HILL INNOVATIONS

The purpose of Hill's business model is to transform the delivery of care in an affiliated, but not fully

integrated, medical group. The goal is to deliver high clinical value per dollar by focusing on improving the quality of care and patient health. Hill uses health information technology, innovative care management methods, predictive modeling, and financial incentives in an effort to provide higher quality and more efficient care.

Utilizing Health Information Technology

In 2007, Hill invested \$5.7 million as part of its long-term plan to integrate electronic medical records (EMRs) into its physicians' daily practice of medicine.

NextGen EMR

Hill member physicians are gradually converting to office-based EMRs. The IPA is encouraging physicians to rely on a paperless system that utilizes a Microsoft-based application, NextGen EMR. Hill leaders visited physician offices and demonstrated that the system is scalable (it can be used for multispecialty group practices and solo practitioners) and user friendly. The system incorporates many of the promises of health information technology—better facilitation of clinical workflow, managing patient data from several sources, and incorporating best practice medical protocols.

Ascender

To improve the consistency of screening and testing, in May 2007 Hill introduced a third-party registry software product called Ascender. Hill provides Ascender software and training to physician offices, but each office must use its own computers to access its patients' data, which it does via the Internet. Currently, 54 percent of Hill practices are using the program. One disincentive is that Ascender is useful only for the Hill patients of each doctor's practice, and the average member physician's patient population is composed of only 40 percent Hill Physicians patients.

The software identifies patients who are due for important lab tests or screenings, primarily by collecting data from claims. Claims data are by their nature limited in usefulness for evaluating quality of care; blood pressure values, for example, do not

Exhibit 2. Ascender Software

GHIJKLMNOPQRSTUVWXYZ ALL SEARCH

of 2 **MRN** **DOB** **PHO** **HMO** **Hba1c Test** **Hba1c % <=9** **LDL-C Test 1 year** **LDL-C < 130** **LDL-C < 100** **Supersensitivity Screening**

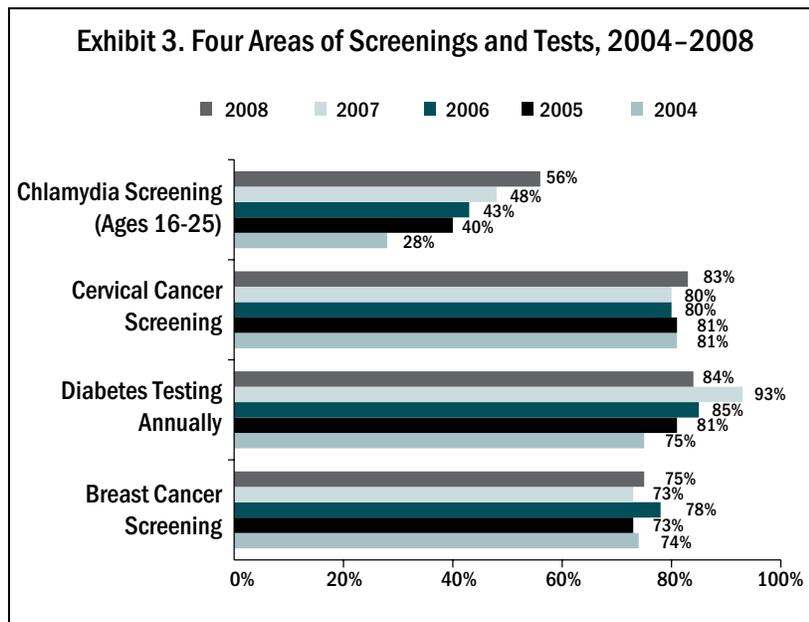
| MRN | DOB | HMO | Hba1c Test | Hba1c % <=9 | LDL-C Test 1 year | LDL-C < 130 | LDL-C < 100 | Supersensitivity Screening |
|-----|------------|---------------------------|--------------------------|-------------|--------------------------|--------------------------|--------------------------|----------------------------|
| | 02/02/1945 | HEALTH NETCM | <input type="checkbox"/> | LOW | <input type="checkbox"/> | HIGH | HIGH | <input type="checkbox"/> |
| | 07/12/1956 | PACIFICAREON | <input type="checkbox"/> | LOW | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | 03/19/1950 | CALIFORNIA CARE | <input type="checkbox"/> | HIGH | <input type="checkbox"/> | HIGH | HIGH | <input type="checkbox"/> |
| | 10/20/1950 | BLUE SHIELD OF CALIFORNIA | <input type="checkbox"/> | HIGH | <input type="checkbox"/> | HIGH | HIGH | <input type="checkbox"/> |
| | 03/03/1954 | CALIFORNIA CARE | <input type="checkbox"/> | LOW | <input type="checkbox"/> | <input type="checkbox"/> | HIGH | <input type="checkbox"/> |
| | 08/26/1943 | CALIFORNIA CARE | <input type="checkbox"/> | LOW | <input type="checkbox"/> | HIGH | HIGH | <input type="checkbox"/> |
| | 02/18/1951 | HEALTH NETCM | <input type="checkbox"/> | LOW | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | 04/26/1943 | BLUE SHIELD OF CALIFORNIA | <input type="checkbox"/> | HIGH | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | 04/27/1951 | HEALTH NETCM | <input type="checkbox"/> | LOW | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | 06/03/1933 | HEALTH NETCM | <input type="checkbox"/> | LOW | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | 02/23/1948 | HEALTH NETCM | <input type="checkbox"/> | HIGH | <input type="checkbox"/> | HIGH | HIGH | <input type="checkbox"/> |
| | 09/24/1947 | BLUE SHIELD OF CALIFORNIA | <input type="checkbox"/> | HIGH | <input type="checkbox"/> | HIGH | HIGH | <input type="checkbox"/> |
| | 02/23/1953 | PACIFICAREON | <input type="checkbox"/> | LOW | <input type="checkbox"/> | HIGH | HIGH | <input type="checkbox"/> |
| | 04/22/1953 | PACIFICAREON | <input type="checkbox"/> | HIGH | <input type="checkbox"/> | HIGH | HIGH | <input type="checkbox"/> |

of 2 **MRN** **DOB** **PHO** **HMO** **Hba1c Test** **Hba1c % <=9** **LDL-C Test 1 year** **LDL-C < 130** **LDL-C < 100** **Supersensitivity Screening**

appear on insurance claims and therefore would not be automatically entered into Ascender. Nevertheless, primary care physicians used Ascender to identify over 60,000 patients who needed screening or test reminders during the first several months with the product. This information is used to followup with the identified patients. The number of screenings and testing increased in three out of four clinical areas, as seen in Exhibit 3.

RelayHealth

To encourage better communications between physicians and patients, Hill utilizes a technology tool called RelayHealth. Through a Web-based software application that is free for all participating Hill practices, clinicians can send messages to their patients over secure Internet connections. With the RelayHealth tool, physicians can answer patient questions and send test results and appointment reminders. Patients, in turn, can make, cancel, and reschedule appointments



and send messages to their physician. The RelayHealth service also facilitates e-prescribing and electronic referrals. Hill is in its fourth year with RelayHealth. In 2007, physicians used it to electronically transmit over 79,000 referrals to colleagues, sent 300,000 messages, and e-prescribed 285,000 prescriptions. One patient says, “I’ve used it to get advice, referrals, and lab results. It’s a way to have a conversation with [my physician] without having to schedule an appointment and drive.”²

Reforming the Delivery of Care

Physicians are notoriously averse to change. Hill seeks to address this by earning their trust. For example, Hill pays physicians on time, listens to their concerns, and strives to build a rapport with its physician members.

Predictive Modeling

Hill uses predictive modeling and adaptations to manage chronic conditions. In its Health Resource Management (HRM) division, Hill employs 25 registered nurses who apply a software program from Symmetry (an Ingenix subsidiary) called Episode Risk Groups.³ Symmetry, as the software is called by Hill staff, is programmed to assign a value to each patient called the Prospective Risk Score, which estimates the likelihood of a patient using physician resources in the future. When they started using Symmetry, the RNs called everyone with Prospective Risk Score over 7 (about 10% of their population). Surprisingly, they found that many people with a high score were quite good at managing their care. But in accordance with the culture at Hill Physicians, they were not satisfied that examining the top 10 percent of this one score was all they could accomplish in predictive modeling. So they developed their own score, which incorporates Symmetry’s Prospective Risk Score but is better at identifying patients who are actually in need of improved care management.

The adjusted algorithm uses the following equation to determine a Priority Score, which indicates the likelihood of poor management of chronic disease that may lead to expensive and perhaps preventable utilization:

Priority Score =

$$\begin{aligned} &0.5(\text{IP days over last 365 days}) \\ &+ (\text{IP days over last 90 days}) \\ &+ 2(\text{ER days over last 365 days}) \\ &+ (\text{ER days over last 90 days}) \\ &+ 2(\text{Prospective Risk Score} \\ &+ \text{adjustment factor}) \\ &(\text{IP, inpatient; ER, emergency room.}) \end{aligned}$$

As shown, the value is computed by considering the amount of professional fee health care dollars spent on that patient over the last 12 months, the quantity of services used, and other factors. With this information, nurse case managers identify and contact patients with high Priority Scores and determine who might require catastrophic health care services.

Using the Priority Score methodology, nurse case managers have identified numerous diabetic patients with moderate Prospective Risk Scores but with poorly controlled blood sugar levels. The case managers contact these patients at elevated risk for diabetes complications to connect them with diabetes resources. Such resources include physician-led group appointments and reminder letters when screenings are due (for blood sugar, cholesterol, nephropathy, and retinopathy). For new diabetes patients and those with poorly controlled blood sugar, resources include free one-on-one counseling with a certified diabetes educator (CDE) and access to CDE-led classes. The most complex 5 percent of Hill patients with diabetes are screened for depression and work with Hill nurses over the telephone to address barriers to care.

In addition, the nurses use the Prospective Risk Score as a communication springboard for a number of patient care initiatives, for example:

- *How to motivate patients to change their behavior.* The nurses are currently experimenting with motivational interviewing, involving breaking goals down into small elements. Their experience and research suggest that if physicians and patients experience success, even on a small level, they are more likely to

Exhibit 4. Patients in Diabetes Collaborative Meeting Quality Measurement Criteria*

| | Patients with A1c<9 | Change from Previous Year | Patients with LDL<130 | Change from Previous Year | Patients with LDL<100 | Change from Previous Year |
|------------------------|---------------------|---------------------------|-----------------------|---------------------------|-----------------------|---------------------------|
| December 2005 | 57% | | 57% | | 44% | |
| December 2006 | 79% | 39% | 72% | 26% | 54% | 23% |
| December 2007 | 81% | 3% | 75% | 4% | 57% | 6% |
| Duration of Experiment | | 42% | | 32% | | 30% |

*Second year of collaborative; health educators used December 2005 to December 2006 in 21 practices; percentages are averages of practice scores (unweighted).

commit to a more ambitious goal and succeed. They are also studying academic models of stages of change.

- *Implementing the “Welcome Home” program.* To increase adherence to necessary follow-up care, HRM nurses contact targeted patients within 48 hours of inpatient hospital discharge and ask them to read the physician’s discharge instructions over the phone. As a result of the Welcome Home initiative, HRM nurses are reaching out to nearly twice as many discharged patients—and they have reported finding a number of “disasters waiting to happen”: cases where patients would usually end up back in the emergency room because they do not understand their discharge instructions or fail to acquire their prescriptions.

Chronic Care Management

In 2004, the Pacific Business Group on Health approached Hill about joining the newly formed Breakthroughs in Chronic Care (BCC) collaborative (now called the California Quality Collaborative, or CQC), to work on clinical improvements in diabetes care. Hill chose four physicians in separate practices to participate. Results came slowly but were promising: blood sugar levels, vital to controlling diabetes, improved (not drastically, however). The four physicians, seeing potential for greater success, became champions for the program and discussed their involvement at a quarterly physician panel meeting.

In the second year, Hill recruited 21 of its practices to work on its own chronic care collaborative. Among strategies used to influence care delivery at the practice level was the dispersal of “health educators” employed by the IPA to member physician offices to help patients and physicians manage chronic care. To do this, health educators used Plan, Do, Study, Act (PDSA) toolkits⁴ (a method popularized by W. Edwards Deming and implemented in post-World War II Japan that is widely credited with helping Toyota and other Japanese manufacturing companies become successful) to help them implement the necessary practice changes.⁵ The health educators using the toolkits began to have a subtle effect on the physicians’ delivery of care as they worked to improve office processes (see Exhibit 4). In its third year, 18 Hill practices participated; in its fourth year, the best practices were disseminated to many Hill offices. Instead of the health educators being sent by the IPA as in the previous three years, Hill staff worked to build office-based improvement teams to increase the likelihood that the improvements will “stick.”

The first four “early adopter” physicians have continued to focus on maintaining and improving delivery system changes. Although initially their outcomes were similar to the “average” Hill practice, these physicians’ diabetic patients began to have better outcomes than those of other physicians. Hill also believes these physicians became better providers across the board. Starting with a goal to change how care was delivered at the office level, health educators

and physicians were able to successfully gain other physicians' trust, acting as partners rather than teachers.

Health educators worked with a *subset* of each participating physician's patients: those whose A1c and LDL scores were poorly controlled. The health educators helped the patients improve both their self-management skills and related clinical measures. More important, physicians who participated in the collaboratives learned about process improvements from the health educators that they then applied to their *entire* diabetic population: This helps them keep their patients healthy and run their practices both efficiently and effectively.

Why is it important to measure A1c and LDL levels? The A1c test is a single test that measures a patient's average blood sugar level over the course of the preceding two to three months. While a normal A1c level is about 5 percent, someone with uncontrolled diabetes might have a level as high as 25 percent. Hill Physicians chose to measure its patients' ability to keep their scores under 9 percent. This is a Healthcare Effectiveness Data and Information Set (HEDIS) measure.⁶

Higher levels of LDL cholesterol are associated with heart disease; for this reason it is important to keep this level within healthy limits. Most people should keep their LDL score below 130, but those with risk of heart disease might aim to keep it below 100, or even lower.⁷ Hill Physicians chose to measure its patients' ability to keep their scores under 130 and 100.

As Exhibit 4 demonstrates, health educators first worked with Hill practices in year two of the initiative, December 2005 to December 2006. A year after the collaborative ended, in December 2007, the number of patients with controlled blood sugar and cholesterol levels did not revert back to precollaborative levels; rather, it remained at the higher levels and even continued to increase by a small amount. This proved to Hill that its intervention was "sticky," that is, the gains made in patient health were preserved because the process improvements learned by physicians and their staffs were maintained.

Paying for Performance

Hill has participated in the Integrated Healthcare Association (IHA) statewide pay-for-performance (P4P) initiative in California since its inception in 2002. Under the initiative, California health insurance plans offer physicians financial incentives that are tied to certain performance measurements. Hill has consistently ranked among the "top performing" players.⁸ Hill adds the IHA funds to its own payment structure.

Hill pays its doctors using a unique hybrid compensation formula, composed of fee-for-service (FFS) and its own pay-for-performance reimbursement. Hill receives fixed payments per beneficiary from its health plan partners and then pays its contracted physicians on an FFS basis. Hill does not pay 100 percent of prevailing FFS rates; instead, it pays approximately 85 percent. The withheld funds, along with any excess discretionary funds, are deposited into a population management fund (PMF), which is dispersed by Hill based on physician performance. This fund is supplemented by the IHA P4P awards, but the dollars come mostly from amounts budgeted by Hill Physicians.

Physicians receive PMF payments according to a three-part formula, which is recalibrated annually. Currently the formula is:

- 1) Utilization performance: 45 percent (as resource utilization goes up, score goes down);
- 2) Clinical performance: 30 percent (including cancer screenings, diabetes management, childhood immunizations, and management of low back pain); and
- 3) Participation performance: 25 percent (measures their level of involvement with Hill and willingness to implement Hill initiatives).

Eighty-five percent of physicians receive PMF payments. The remaining physicians fail to receive PMF payments because they do not meet outcome measures or they do not have a sufficient number of Hill patients. For those who do participate, Hill has distributed up to \$200,000 per quarter per practice. The amount depends on physician performance, practice size, and the amount of money available in the

population management fund each quarter. The average amount is about \$20,000 per quarter per practice.

While financial incentives alone are not enough to ensure physician behavioral change, small amounts of money are even less likely to motivate improved practice patterns. Hill's PMF model provides a significantly greater incentive to its physicians. The numbers tell the story: in 2006, Hill distributed \$32 million in performance compensation to its physicians, yet only \$4.4 million of this amount originated from the IHA program.⁹

EXPORTABLE LESSONS

Earn doctor trust. Doctor trust can be gained through small but important steps that show that the organization cares about the doctor's satisfaction and the practice's success. Hill found that solving minor problems, paying physicians promptly, and proving its competence at working with the practice engendered confidence and improved communication. Once this trust is built, physicians are more welcoming to organizational initiatives that use physician performance data to highlight areas that need improvement. These good working relationships are the platform for the kind of change that can make a big difference in the lives of patients.

Other physician groups may successfully replicate Hill's innovations. Hill occupies a unique landscape between the staff-based HMO model and more decentralized, fee-for-service PPO health care. The Kaiser/HMO model allows for highly coordinated care that is cheap and efficient, but the necessary reduction in provider choice is worrisome to some consumers. PPOs, on the other hand, have no management layer—essentially affording uncoordinated autonomy—which often results in little cohesiveness among providers and no ability to implement many of the quality improvement initiatives described in this case study. Hill has an extremely strong, for-profit management consulting company that exclusively supports the medical group, the partner to an all-physician Board of

Directors that focuses on how to lead from within. Loosely organized physician groups that are seeking to become more organized might consider Hill's successful mix of management and autonomy.

Be bold but be smart. Hill senior staff are tasked with identifying and solving problems. What sets Hill apart from similar organizations is that it is bold in its approach to solve the problems. For instance, Hill's determination to pay physicians based on performance is unique; unlike many compensation schemes that include some small financial incentive based on performance, Hill member physicians stand to make a substantial amount more by complying with quality initiatives. But staff are also smart not to overwhelm or move faster than their most reform-minded member physicians.

Introduce both financial and cultural changes. Hill's experiences demonstrate that while financial incentives increase the likelihood of a physician office adopting EMRs, money is not the biggest hurdle. The problem among many physicians is the willingness to change. Many doctors believe such a major change would be horribly disruptive. By both earning doctor trust and offering to lessen upfront costs associated with health IT, individuals and practices step forward to change. Hill acknowledges with their physicians that all transitions are difficult, but because of trust earned through "blocking and tackling," physicians are more likely to give the IPA the benefit of the doubt.

Use both carrots and sticks. Hill encourages its doctors to adopt health IT by assisting offices in the cost and training, as well as fostering a culture of communication and cooperation. But "sticks" are used to an extent, in the form of the population management fund. Physicians who choose not to participate in pay-for-performance or attend quarterly Hill panel meetings leave money on the table, in addition to the possibility of not providing the highest quality patient care possible.

Physicians can be managed (usually). Although physicians in the United States have resisted attempts to be forced under nonphysician control, the IPA model allows for physician autonomy.¹⁰ By allowing autonomy, but working collaboratively to focus goals and improve care processes and outcomes, Hill has been able to introduce a number of the tools detailed in this paper. Hill leaders, for instance, visited physician offices to demonstrate that information technology is scalable and user friendly. Financial assistance and building trust are absolutely necessary.

CONCLUSION

As Chief Medical Officer Thomas Long told us, most physicians are busy enough simply practicing medicine as best they can for their patients every day. Physicians respond to smart management, that is, information, collaborative coaching, and incentives. A well-run organization like Hill Physicians has the ability to streamline administrative processes, enabling physicians to spend more time practicing medicine.

The success of Hill demonstrates that communication, coordination, and feedback are vital to sustainable quality improvement. While member physicians are in small practices, they are part of a constantly evolving and connected system that distributes pay-for-performance funds, coordinates care for high-risk patients, and uses “change agents” to ensure successful implementation. Their hard work and open-minded approach to care should serve as an inspiration to all those interested in building a health care system that delivers higher value.

NOTES

- ¹ V. Barron and L. Lipsenthal, “Engendering and Marketing Physician Wellness: Creating a Healthier Delivery System,” *Group Practice Journal*, Oct. 2004 53(9):13, <https://www.hillphysicians.com/Documents/common/pdf/Group%20Practice%20Journal%20Oct2004.pdf> (accessed December 15, 2008).
- ² “Top Health Tips, A to Z,” *Hill Health Magazine*, Fall 2008, https://www.hillphysicians.com/YourHealth/HH_Mag/Pages/HHM_Fall08_AZ.aspx (accessed December 18, 2008).
- ³ “An Overview of Symmetry Episode Risk Groups,” *Symmetry*, http://www.symmetry-health.com/products/product_SERG.php (accessed December 18, 2008).
- ⁴ PDCA (Plan-Do-Check-Act) and PDSA (Plan-Do-Study-Act) are interchangeable; we have used one or the other based on what the organization studied uses. Deming popularized PDCA, often calling it the Shewhart Cycle (after its inventor Walter A. Shewhart) but Deming later changed the “Check” to “Study” to better illustrate the third step. See: 12Manage: Deming Cycle, http://www.12manage.com/methods_demingcycle.html (accessed October 10, 2008).
- ⁵ Ibid.; J. Liker, *The Toyota Way*, 2004.
- ⁶ “A1c Test,” *MayoClinic.com*, July 31, 2008, <http://www.mayoclinic.com/health/a1c-test/MY00142> and <http://www.mayoclinic.com/health/a1c-test/MY00142/DSECTION=results> (accessed October 20, 2008); “Quality Satisfaction,” *Hill Physicians*, <https://www.hillphysicians.com/AboutUs/WhoWeAre/Pages/QualitySatisfaction.aspx> (accessed December 18, 2008).
- ⁷ “Cholesterol Levels: What Numbers Should You Aim For?” *MayoClinic.com* June 21, 2008 <http://www.mayoclinic.com/health/cholesterol-levels/CL00001> (accessed October 20, 2008).
- ⁸ “California Physician Groups Recognized by Integrated Healthcare Association,” October 5, 2007, <http://www.iha.org/100507.pdf> (accessed October 23, 2008).
- ⁹ *Hill Medical Group Annual Report 2007*.
- ¹⁰ P. Starr, *The Social Transformation of American Medicine* (New York: Basic Books, 1982).

Appendix 1

Methods Used for Hill Physicians Case Study

This study's site visit was conducted November 8 and 9, 2007, at Hill Physicians' headquarters in San Ramon, California.

The following individuals were interviewed:

- Vivian Barron, MS, LMFT; director, Integrated Health,
- Ann Woo, Pharm.D.; director, Clinical Support,
- Patti Landrum, R.N.; director, Health Resource Management,
- Craig Lanway, chief information officer,
- Michael van Duren, M.D.; vice president, Clinical Services.

We also held a roundtable discussion; it included the five individuals above, plus:

- Steve McDermott, chief executive officer,
- Rosaleen Derington, chief medical services officer,
- Thomas Long, M.D.; chief medical officer.

Appendix 2

Protocols and Questions Used for Hill Physicians Case Study

Introduction

- “Why we’re here.”
- Please tell us what you do for Hill Physicians.

Issue

- Why did you become early adopters of pay-for-performance? What was the nature of the problem that you were seeking to address?
- Describe how your diabetes case management program grew out of your P4P work. Does much of the focus go toward managing a patient’s comorbidities?
- How did you disseminate quality improvement before health educators? Was P4P the only way to do so?
- How does predictive modeling work? Do you have evidence that it is effective?

Objective and Intervention

- What is the objective of these initiatives? What do you hope to achieve or accomplish?

Target Population

- Whom did each intervention target?

Organization

- How does the intervention fit within your organization’s overall mission or strategy?
- What are the advantages of having your MSO, PriMed, separate from you IPA, Hill Physicians? Are there any disadvantages? Since they share employees and office space, how separate are they?
- What fraction of physicians affiliated with Hill are independent, not employees? Is that a delegated model? What are the specific challenges in a delegated model for bringing about change, versus a Kaiser or VA context?
- How does Hill’s improvement strategy differ from its competitors (like Kaiser)?
- How is Hill able to keep administrative costs so low?

Information Infrastructure

- What is the relationship between EMRs and Ascender? How do they work together? How do they each add value?
- How, and to what extent, is a patient’s clinically relevant information made available to all providers of the care system at the point-of-care?
- How do you assure good communication between providers (for patients seeing multiple providers) and needed support during care transitions—both within and across care settings?

Leadership

- Who were the key people involved or responsible in these four initiatives?
- How were the initiatives received at first?

Process of Change

- What was the process, critical steps, or pathways that you undertook to implement health educators? How did you go about the work?
- Do physician offices volunteer to work with health educators, or do you initiate by asking them? Are offices using them self-selecting? How did (and does) Hill encourage physicians to get on board with pay-for-performance? Is it strictly economic?
- What makes practices think they need health educators? What is the best way to reach resisters?
- What are the specific issues and challenges integrating health educators' inputs into practice techniques? Are physicians compensated for working with health educators or is it a benefit of membership? Or do they have to pay?

Implementation Timeline

- When did you start working on the interventions?
- What were the major implementation milestones?

Key Measures

- What were your quantitative and qualitative measures of impact or success? (Or what were the “dots” or “levers” that you were seeking to move or push?) Do these measures and effects differ by subpopulation? How do measures take into account interactions between the different innovations?
- Throughout all of these, how are the needs of patients with chronic conditions met?

Results

- How do you assess the quantitative and qualitative impact of individual quality components: P4P, health educators, case management, and predictive modeling?
- Are there interactive effects among the innovations?
- Taking everything into account, how vital are health educators?
- Osteoporosis care management is an example of the use of health educators that you have already written about. What are the results since the first journal article was published in 2004?
- The Hill Physicians Medical Group advisory board takes feedback from member physicians. How critical is this to improving health outcomes?

Lessons Learned

- What take-away lessons have you learned from your experience?
- What were the critical success factors?
- What challenges did you face and how did you overcome them?
- What advice would you give to someone seeking to replicate your success, for example, opportunities to seek, mistakes to avoid?

Implications

- What public policy issues does this example raise?
- Are there policy issues that must be addressed to enable or promote wider replication?
- Which Hill Physicians innovations would be most transferable to other settings?
- How would wider replication help transform health system performance?

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The aim of Commonwealth Fund–sponsored case studies of this type is to identify institutions that have achieved results indicating high performance in a particular area of interest, have undertaken innovations designed to reach higher performance, or exemplify attributes that can foster high performance. The studies are intended to enable other institutions to draw lessons from the studied institutions' experience that will be helpful in their own efforts to become high performers. It is important to note, however, that even the best-performing organizations may fall short in some areas; doing well in one dimension of quality does not necessarily mean that the same level of quality will be achieved in other dimensions. Similarly, performance may vary from one year to the next. Thus, it is critical to adopt systematic approaches for improving quality and preventing harm to patients and staff.

