

Prescriptions for Excellence in HEALTH CARE

A COLLABORATION BETWEEN JEFFERSON SCHOOL OF POPULATION HEALTH AND LILLY USA, LLC

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Editorial

Primary Care: A Key Role in Managing Transitions of Care

By David B. Nash, MD, MBA
Editor-in-Chief

A little more than a year ago, I began to experience what seemed to be unrelated symptoms. The most annoying of these were mid-morning headaches and frequent hunger pangs, which I satisfied with a muffin. Like many of my patients, I ignored these subtle signals.

I finally paid attention one evening when I was literally “off my game.” As my tennis partner racked up point after point in our weekly match, I realized that I was sweating profusely and uncharacteristically short of breath. Instead of calling my primary care physician (PCP) as I should have, I ordered some standard lab tests. When, to my amazement, my fasting blood sugar was just over 100, I made an appointment with my PCP.

After a thorough workup, my PCP informed me that I have what we now call prediabetes and issued me a new “game plan,” ie, lose 5% of my body weight by reducing my carbohydrate intake to 60 grams a day.

Although I am a physician who has in-depth knowledge of metabolic syndrome and easy access to the best health care

providers and services, I spent the next year discovering how difficult it is for a person to manage diabetes – even in its very early stages.

I relate this personal experience because, in addition to making me more empathetic with my patients, it impressed upon me how vital the PCP’s role is as diagnostician, teacher, advisor, and partner in managing the complexities and multiple care transitions associated with chronic conditions.

From a population health perspective, improvements in primary care delivery for people with chronic conditions translate into fewer complications and lower health care costs – a perfect segue to the first 2 articles in this issue of “*Prescriptions for Excellence in Health Care.*”

Prescriptions for Excellence in Health Care is brought to *Health Policy Newsletter* readers by Jefferson School of Population Health in partnership with Lilly USA, LLC to provide essential information from the quality improvement and patient safety arenas.

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The lead article, “*Reducing Hospital Costs by Means of Enhanced Primary Care*,” focuses on the Patient-Centered Medical Home (PCMH). The author outlines the rationale and traces the development of this promising model for primary care, and reviews the evidence of hospital cost reductions associated with PCMH demonstration projects throughout the country.

The second article, “*Reducing Regional Hospital Readmissions: The PAVE Project*,” describes a novel initiative designed to reduce regional hospital

readmission rates by 10% over an 18-month period by means of improved transitions of care among providers and increased patient and family engagement in care management.

Regular readers of the newsletter will recognize that the final article – a book review – is a new feature. We plan to include these reviews occasionally as we become aware of new books related to health care quality that may be of interest to hospital administrators and health care practitioners. “*Safe Patients, Smart Hospitals: How One Doctor’s*

Checklist Can Help Us Change Health Care from the Inside Out,” is the subject of the review in this issue.

As always, I welcome reader comments and questions. I can be reached at david.nash@jefferson.edu.

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A Message from Lilly Care Coordination: Part of a National Priority

By Kathleen Shoemaker, PharmD, MBA

Occasionally, I have the opportunity to experience our health care system as a practicing clinician in a busy pharmacy. My patients are grateful for good service, information about their medicine, and access to screenings and some immunizations I can provide. This is also the place where I experience the health care system and its current deficits.

Care coordination (and often the lack of it) becomes crucial as a patient’s care moves from the hospital, surgery center, or other health care delivery site to the home setting. At the pharmacy, patients try to navigate complex drug regimens and insurance issues, often without adequate instruction or someone to ask when questions arise. These gaps in care coordination may pose significant safety risks (eg, learning how to self-inject, how to continue or discontinue a medication, when to follow-up with their doctor or specialist).

In late 2008, the National Priorities Partnership (NPP), convened by the National Quality Forum, released *National Priorities and Goals*,¹ which focus on 6 domains of care: Patient and Family Engagement, Population Health, Safety, Care Coordination, Palliative and End-of-life Care, and Overuse. These domains were selected because improvements in these areas will substantially improve population health and health care. In 2010, under contract to provide input to the Secretary of Health and Human Services (HHS) on the National Quality Strategy, NPP again reported its recommendations on the 6 priorities and goals but included 2 additional areas of focus: Equitable Access and Infrastructure (electronic health information, health care professional training) Supports.^{2, page 3}

Today NPP is moving the National Quality Strategy forward with an aggressive time line and agenda.

The Partners are divided into 3 subcommittees modeled after the 3 domains of the National Quality Strategy: Better Care, Affordable Care, and Healthy People/Healthy Communities. This year, for each of the 6 priority areas, HHS has asked them to add: 3 goals, 2 strategic opportunities per goal, and 2 measures per goal. These committees will be very busy as they must report back to HHS by September 2011.³

In some of the initial comments to HHS regarding the National Quality Strategy, NPP shared an aspirational goal for Care Transitions, which falls under the Better Care/ Care Coordination domain. “Health care organizations and their staff will strive continually to improve care by soliciting and carefully considering feedback from all patients (and their families, when appropriate) regarding coordination of their *care during transitions* between health care

systems and services, and between the health care delivery system and communities.”², page 4

Though slightly modified for 2011 as “Promoting Effective Communication and Coordination of Care,” we can expect the workgroup to focus on care coordination that “... guides patients and families through their health care experience, while respecting patient choice, offering physical and psychological supports, and encouraging strong relationships among patients and the health care professionals accountable for their care.”², appendix E, page 3

A Call to Action

Clinicians should know and follow the work of the NPP. Through awareness and shared learning, these initiatives can improve our health care system. NPP conducts its activities in a transparent manner and is open to comments and participation. Most meetings are conducted via the Web or telephone; many are recorded. Clinicians should aspire to understand what “good” care coordination looks like in clinical practice, and then take action to integrate it into their practices.

Kathleen Shoemaker, PharmD, MBA, a consultant for Managed HealthCare Services at Lilly USA, is the Supplier Industry Council Chair for the National Quality Forum.

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Reducing Hospital Costs by Means of Enhanced Primary Care

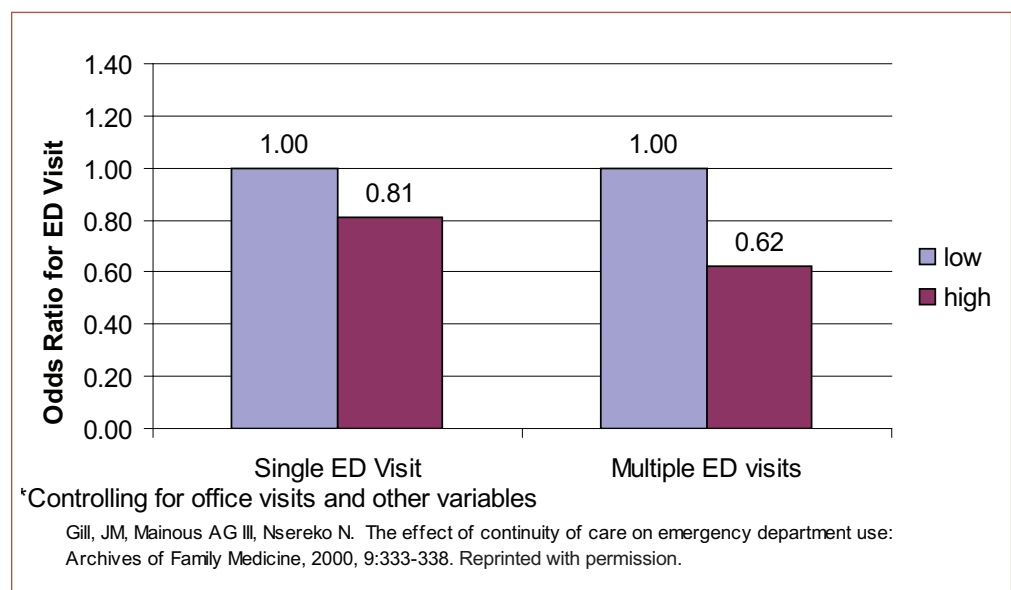
By James M. Gill, MD, MPH

The Benefits of Primary Care

Evidence regarding the benefits of primary care is accumulating steadily. The supply of primary care physicians has been associated with improved outcomes, including reduced incidence of and mortality from cancer¹ and fewer avoidable hospitalizations.² Moreover, surveys of patients from different countries suggest that primary care performance improves in countries with more developed systems of primary care.³

Specific components of primary care also have been associated with improved health outcomes. Having a regular source of primary care has been associated with improved preventive care,⁴ better health outcomes, and lower total costs.⁵ Greater continuity

Figure 1. Association Between Emergency Department (ED) Visits and Continuity



with one's primary care provider has been associated with improved preventive care,⁶ and fewer emergency

department visits⁷ (Figure 1) and hospitalizations (Figure 2).⁸

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Despite the proven benefits of primary care, disturbing shortages have developed in this specialty across the United States. Current calculations indicate that the future supply of physicians will be inadequate to meet the health care needs of the aging US population. One recent study projects a shortage of 200,000 physicians by 2020.⁹ Medical students continue to demonstrate a preference for non-primary care specialties, partly because these specialties offer higher pay and a lower workload.¹⁰

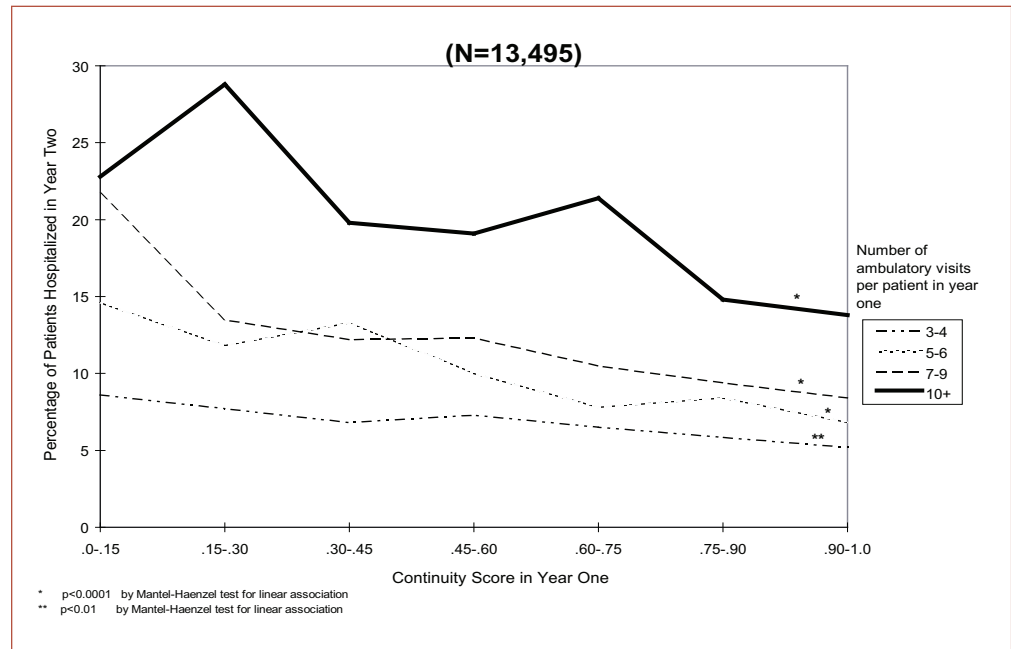
The United States has reached a crossroads with respect to primary care. Unless the decline in primary care specialists is reversed and new approaches to care for chronic illnesses are made readily available to all who need them, our health care system will continue to disintegrate and become unaffordable for a majority of Americans.

The Patient-Centered Medical Home – A Brief History

The Patient-Centered Medical Home (PCMH) is a new model of primary care that has the potential to reverse the decline in this vital medical specialty. First introduced by the American Academy of Pediatrics (AAP) in 1967, the medical home concept initially referred to a central location for archiving children's medical records.

In 2000, the “personal medical home” envisioned by the American Academy of Family Physicians (AAFP) expanded the medical home concept to encompass patients of all ages. Beyond the basic tenets of primary care (ie, care that is accessible, continuous, comprehensive, coordinated, family-centered, and community-centered), the expanded medical home concept included enhanced chronic disease

Figure 2. Impact of Provider Continuity on Hospitalization



Gill JM, Mainous AG III. The role of provider continuity in preventing hospitalizations: Archives of Family Medicine, 1998; 7:352-357. Reprinted with permission.

management, a team approach to care, enhanced patient access, and the use of information technology to support optimal care.

In 2002, the AAP broadened its definition, adopting characteristics similar to those included by the AAFP. Finally, the American College of Physicians (ACP) and other internal medicine organizations espoused the concept of the “advanced medical home” using a very similar definition.

In 2007, 4 major primary care organizations - the AAFP, AAP, ACP, and the American Osteopathic Association - came together to form the “joint principles of the patient-centered medical home.”¹¹

The 7 core features of the PCMH are:

1. Personal Physician: Each patient has an ongoing relationship with a personal physician who is trained to provide first contact, continuous, and comprehensive care.

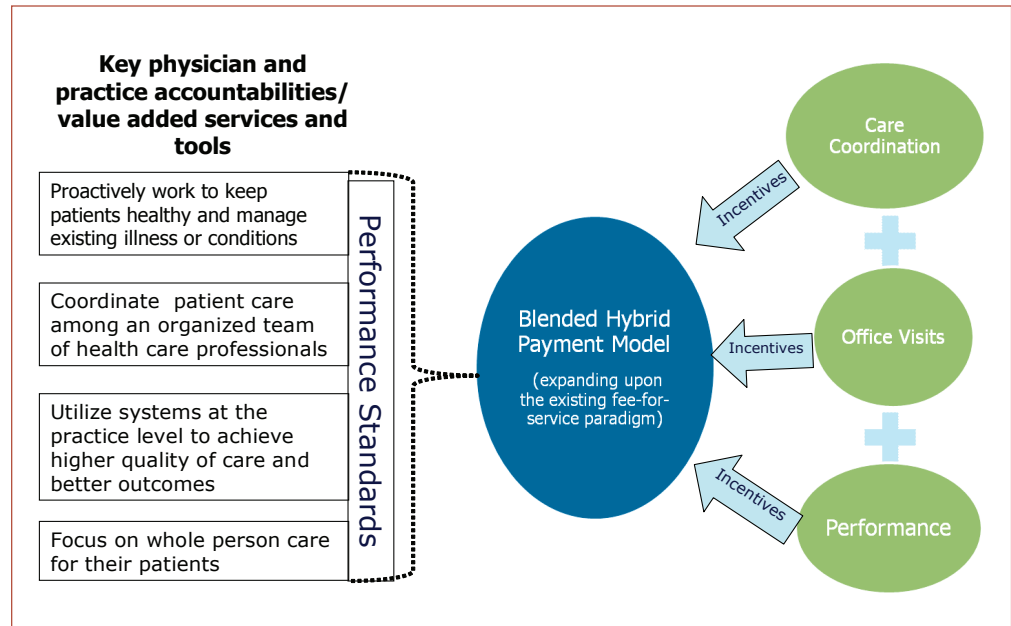
2. Physician-Directed Medical Practice: The personal physician leads a team of individuals at the practice level who collectively take responsibility for the ongoing care of patients.

3. Whole Person Orientation: The personal physician is responsible for all of the patient's health care needs, either by providing direct care or by arranging appropriate care with other qualified professionals.

4. Care Coordination and/or Integration: The personal physician coordinates care across all elements of the complex health care system (eg, subspecialty care, hospitals, home health agencies, nursing homes) and the patient's community (eg, family, public and private community-based services). Care is facilitated by registries, information technology, health information exchange, and other means.

5. **Quality and Safety:** These hallmarks of PCMH are exemplified by the care planning process, evidence-based medicine, accountability, performance measurement, and mutual participation in decision making.
6. **Enhanced Access:** Enhanced access to care is available through systems such as open scheduling, expanded hours, and new options for communication between patients, their personal physicians, and practice staff.
7. **Payment:** The health care system recognizes the added value provided to patients who have a PCMH via appropriately aligned reimbursement.

Figure 3. Primary Care Payment (PCPCC Model)



Source: Rogers E. All eyes on the patient centered medical home. Presented at the Patient-Centered Primary Care Collaborative Annual Summit; October 22, 2009; Washington, DC. PCPCC, Patient-Centered Primary Care Collaborative.

Unlike the current system, which rewards high-volume, overspecialized, and inefficient care, the PCMH is based on the premise that the best health care has a strong primary care foundation and strives for high quality and efficiency. Most importantly, it returns the focus to the patient and the ongoing relationship between the patient and his or her personal physician. Now gaining widespread support from both physicians and health care policy experts, this model is viewed as a necessary policy change for the solvency and viability of our primary care system.^{12,13}

The PCMH concept has been embraced by payers and purchasers of health care. Large US employers and insurers have joined with primary care organizations to form the "Patient-Centered Primary Care Collaborative" (PCPCC), a cooperative effort to develop and advance the PCMH. The PCPCC believes that, if implemented, the PCMH will improve the health of patients and

the viability of the health care delivery system.

Payment Policy and the PCMH

Recognizing that current payments to US primary care clinicians are not commensurate with the services expected and provided, the PCPCC strongly supports the adoption of an improved primary care compensation model. The negative effects of the current model on income, work life, career satisfaction, and specialty choice are widely recognized in the literature.¹⁴

Fixing the primary care reimbursement system is seen as a crucial component of primary care reform. The PCPCC and other organizations support a "hybrid payment model," which would combine payments for face-to-face encounters with additional monthly payments for the medical home and incentive payments based on measures of quality of care, patient experiences, or shared savings. A schematic of this hybrid payment model is shown in Figure 3.

PCMH Pilot Projects

The PCMH model is being tested widely across the country; 44 of 50 states have PCMH projects in process, and others have projects in the planning phases.¹⁵ Many of these pilots already have shown significant benefits of the PCMH.

One of the earliest PCMH projects is Community Care of North Carolina (CCNC), a statewide Medicaid project that provides primary care as well as enhanced reimbursement for and access to community care coordinators.¹⁶ CCNC has demonstrated improved quality of care for asthma, diabetes, and other chronic conditions. CCNC also has demonstrated significant cost savings. For example, a study shows that, in 2004, there was an estimated \$125 million annual net savings after paying for PCMH investments.¹⁶ Most of the savings came from reduced costs for inpatient hospitalizations, emergency department visits, and hospital

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outpatient encounters. Pharmacy costs actually increased, which is consistent with the notion that the PCMH leads to better chronic disease management.

The Colorado Department of Health Care Policy and Financing also implemented a PCMH program for Medicaid enrollees - specifically for low-income children enrolled in the state's Medicaid program and the State Children's Health Insurance Program. Participating primary care practices were required to have 24/7 access as well as convenient appointment scheduling and care coordination services. These practices were eligible for extra pay-for-performance payments. As of March 2009, a total of 150,000 children were enrolled in 97 different Colorado PCMH community-based practices involving 310 physicians.¹⁷ This Colorado PCMH pilot led to lower costs; specifically, median annual costs were \$785 for PCMH children compared with \$1000 for controls. These cost savings were even greater for children with chronic conditions: \$2275 vs. \$3404 per year.

Early PCMH pilots also have been initiated by private insurers, most commonly Blue Cross Blue Shield (BCBS) plans. The largest of these is in Michigan, which includes 1.7 million patients of 6500 physicians in over 2000 practices.¹⁸ The program includes consultation to help offices transform their practices, and reimbursement includes both up-front funding and enhanced fee-for-service payments. BCBS has initiated pilots in other states including Maryland, North Carolina, and Tennessee.

Many of the early PCMH pilot projects have been conducted in large integrated health care systems. One pilot that has received a great deal of

press is Group Health Cooperative Puget Sound (an affiliate of Kaiser Permanente). This innovative program reduced physician panels by 25%, lengthened visits by 50%, added telephone and e-mail visits, and increased the number of staff available to conduct patient outreach and coordination. The project resulted in improved quality of care across multiple HEDIS (Healthcare Effectiveness Data and Information Set) measures, as well as improved patient and provider satisfaction.¹⁹ The project also resulted in a 29% reduction in emergency department visits and an 11% reduction in avoidable hospitalizations.¹⁹ Similar levels of cost savings have been demonstrated by other pilots conducted by large integrated health systems such as Geisinger.²⁰

Although successful pilots have been conducted in large integrated health systems, the majority of primary care practices in the United States are small independent practices.²¹ In order for small practices to implement the PCMH model successfully, it must be embraced by payers other than Medicaid and large single payers (eg, BCBS). Specifically, we need multipayer projects that include large numbers of small independent practices as well as large practices and practices associated with health care systems.

One of the largest projects of this type is Pennsylvania's "Chronic Care Initiative" project, a collection of 6 different projects in 6 regions of the state. The first of these, implemented in Southeastern Pennsylvania (including Philadelphia), comprises all of the major private insurers as well as the Medicaid managed care plans. These insurers share in making enhanced payments to participating

providers based on their respective scores on the National Committee for Quality Assurance's Physician Practice Connections - Patient-Centered Medical Home tool.²² The Southeastern project included over 200,000 patients of over 200 physicians in its first phase, and already is planning a second phase. Some statewide multipayer projects have been implemented (eg, Vermont, Rhode Island) and others are being planned (eg, Maryland, Delaware). Because statewide multipayer projects are more recent, data are not yet available regarding their impact on quality, utilization, and cost.

Conclusions

Complete results are not yet available; however, there is accumulating evidence that the PCMH is a promising method to improve quality while reducing the cost of health care in the United States. The future of successful health care reform depends on changing the system to one that is based on primary care. This will require an increased investment in primary care. Although primary care currently accounts for only 5% to 6% of US health care spending, experts estimate that an efficient system will require spending at least 10% to 12% on primary care.²³

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Reducing Regional Hospital Readmissions: The PAVE Project

By Patricia J. Yurchick, RN, MBA, CPHQ

An important focus of health care reform, avoidable readmissions are a goal of many national, state, and regional initiatives that aim to improve transitions across the continuum of care. There is good reason for this!

A study published in the *New England Journal of Medicine* reported that 20% of Medicare patients were readmitted to the hospital within 30 days of discharge and more than one third were readmitted within 90 days. More than half of the patients discharged with a medical diagnosis did not have a physician office visit between their discharge date and the readmission date. The estimated cost of these unplanned readmissions exceeds \$17

billion dollars annually.¹

These findings mirror statistics in specific regions of the country. For example, the Pennsylvania Health Care Cost Containment Council (PHC4), an independent state agency that collects, analyzes, and reports data about the cost and quality of health care in Pennsylvania, recently reported an overall hospital readmission rate of 19.1% for selected conditions in southeastern Pennsylvania (SEPA), compared to 18.2% in western Pennsylvania and 16.2% in central/northeastern Pennsylvania.²

An initiative, the Preventing Avoidable Episodes Project (PAVE), is under

way in the SEPA region to address issues related to transitions of care and, ultimately, to reduce readmission rates in the region. The project is guided by and funded through the Partnership for Patient Care (PPC), a unique enterprise involving the Health Care Improvement Foundation (HCIF), Independence Blue Cross (IBC), and health care providers in the SEPA region. PAVE is a multiyear quality and safety initiative.

HCIF is a nonprofit organization founded in 1980 as a 501(c)(3) affiliate of the Delaware Valley Hospital Council (DVHC) of the Hospital & Healthsystem Association

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of Pennsylvania. The DVHC is a membership organization representing more than 50 acute and specialty care hospitals and health systems, over 30 facilities that provide inpatient behavioral health services, and 20 facilities that provide physical rehabilitation in SEPA. Although HCIF became an independent organization in 2008, it maintains strong ties with DVHC. HCIF is governed by a Board of Trustees with strong hospital leadership experience and a Clinical Advisory Committee that provides guidance regarding clinical priorities.

HCIF's vision is to make the Greater Philadelphia region the safest place in the nation to receive health care by building partnerships with the health care providers in the region. HCIF is funded through the PPC - in large part by IBC, a leading health insurer in SEPA with 2.4 million members. Additional contributions from the region's hospitals help support the PPC. HCIF identifies 1 or 2 major initiatives each year. In the spring of 2010, PAVE was launched via a major educational conference to introduce the region's hospitals to numerous national and regional efforts to improve care transitions and to reduce preventable readmissions.

Given the compact geography and abundance of facilities, patients in SEPA may receive care at any number of hospitals. Thus, patients may elect to be readmitted to hospitals other than those from which they were discharged. Because the magnitude of this issue is not fully understood, providers have come to realize the benefit of working together to create common regional solutions. As a result, PAVE was well received by health care organizations in the region. Close to 30 hospitals have chosen to participate including

cancer care organizations, children's hospitals, home health care and hospice agencies, and community-based service organizations.

The overall goal of PAVE is to reduce readmission rates by 10% over the course of the 18-month project time line. Project leaders hypothesize that this goal can be achieved by improving transitions of care from one provider to the next, increasing patient and family engagement in the management of the patient's health care plan, and engaging providers and health care professionals along the entire continuum of care.

Rather than addressing processes within distinct provider organizations, PAVE plans to achieve its goal via 3 workgroups designed to address related issues across the care continuum. Each workgroup is charged with developing at least 1 innovative approach with regional impact. With over 120 individual participants representing health care professionals across the health care delivery spectrum, a true collaborative spirit will be fostered.

Recognizing the impact of medication errors on readmissions, the Medication Management Workgroup was formed to:

- Identify best practices concerning medication reconciliation.
- Define the role of pharmacy in the discharge and postdischarge processes.
- Evaluate the role of information technology in the medication management process.

Close to 50 individuals - pharmacists, case managers, nurses, quality and patient safety professionals, and physicians - from participating organizations have joined this workgroup.

The Care Transitions Workgroup, formed to address issues related to the process of care delivery across the care continuum, focuses on developing recommendations regarding effective coaching and handoff techniques and improving the overall collaboration and coordination of care. Over 60 medical professionals, including physicians, nurses, case managers, and quality and risk professionals, are involved in this workgroup.

The Personal Health Record Workgroup's task is to develop a framework for the personal health record by identifying key data components, comparing available formats and vendors, and recommending a process for data collection and completion. This workgroup's 35 members are professionals in the areas of health care delivery and information technology.

An Expert Advisory Panel convened for the PAVE Project is comprised of national experts in the field of care transitions and regional thought leaders. The role of the panel is both to advise and to serve as a resource for the 3 workgroups and project leaders for the duration of the project.

Another important component of PAVE is its focus on baseline and ongoing measurement. Readmission rates, monitored throughout the project, are the metric by which success will be determined. PHC4 publishes readmission data across the Commonwealth; however, the data are not timely enough to support the needs of the PAVE Project. Because no single ideal source of readmission data exists, multiple sources will be used. Readmission data as published through the DVHC will be tracked throughout the project.

Participating hospitals are required to complete a Transitions of Care Survey prior to the start of the project to identify strategies and targeted interventions at each site. The survey consists of 32 questions about the facility's strategies to reduce unplanned readmissions by improving care transitions and its approach to measurement relative to readmissions. Aggregate results will be shared with all participants.

Post project, the survey will be readministered to see which strategies were implemented. In addition, a focused chart review of patients who were readmitted will be conducted at each participating hospital to identify trends and potential issues at the site and to help guide the workgroups in their activities.

Finally, interviews with patients who were readmitted and their families will be conducted using a standardized tool, the Care Transitions Measures (CTM)-3 Tool, developed by Eric Coleman, MD, from the University of Colorado. The 3 questions contained in the CTM-3 concern discharge readiness at the previous admission.

They focus on preferences of the patient and family, patient and family understanding of responsibilities, and patient and family understanding of the purpose of medications. These interviews will be used to identify shortcomings in the current discharge practices at each site and will inform workgroup discussions.

Throughout the PAVE project, each workgroup's progress will be communicated through discussions, status reports, and teleconferences. In addition to facilitating communication within and among workgroups, webinar technology will enable workgroups to share best practices and innovative approaches implemented elsewhere in the nation.

With dedicated leadership and commitments from health care organizations, SEPA is beginning to improve the way health care is delivered. PAVE brings together health care providers who previously may not have collaborated in the complex care of patients. By fostering an environment of mutual sharing and learning, PAVE leaders hope that new synergies will be created.

Although the overall outcome measure is a reduction in readmission rates at participating hospitals, success also will be measured by demonstrated improvement in care transitions and communication; standardization of processes across the organizations; and by the relationships cultivated among providers. Patients and their families will be the ultimate beneficiaries of the unique approaches that are born of these new relationships.

Patricia J. Yurchick, RN, MBA, CPHQ, is Director of Quality Programs for The Health Care Improvement Foundation. She can be reached at: pyurchick@hcfonline.org.

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Book Review

Reviewed by Amanda Solis, MS

Safe Patients, Smart Hospitals

(New York: Hudson Street Press; 2010), by Peter Pronovost, PhD, MD and Eric Vohr

Despite its simple title, *Safe Patients, Smart Hospitals: How One Doctor's Checklist Can Help Us Change Health Care from the Inside Out*, is the real and vivid story of loss, setbacks, hard work, and human triumph.

Going beyond the concept of a checklist as a solution to patient safety dilemmas, the book draws the reader in with a careful examination of institutional culture. There is scientific research to validate the use of a checklist approach in many different settings. However, it is when Pronovost and Vohr identify gaps in communication as the possible root cause of medical errors that the reader begins to understand the complexities of patient safety. The authors tackle safety issues head-on and offer a step-by-step look at how to achieve meaningful change.

Those involved in patient safety are all too familiar with the Institute of Medicine report *To Err is Human* and the glaring reality that not much has changed in the 12 years since it was published. *Safe Patients, Smart Hospitals* reminds us of the uncomfortable truth that doctors and nurses are not infallible.

The first step is to acknowledge that even highly trained professionals working within the best institutions are not immune from error. Clinicians should analyze and learn from mistakes rather than hiding, sanitizing, and “recovering” from them. Following this notion, Pronovost developed a process to identify high-risk settings and anticipate

errors, such as those associated with central line infections and ventilator-associated pneumonia (VAP).

After researching clinical guidelines, Pronovost's team developed a VAP checklist comprised of 5 items:

1. Elevating the head of the bed
2. Limiting sedation
3. Testing daily to see if the ventilator was still necessary
4. Administering medication to prevent stomach ulcers
5. Administering medication to prevent blood clots.

By observing processes in the intensive care unit (ICU), the team identified simple obstacles to completing the list. For item 1, there was no clear way to know when the bed was situated at the proper angle. This obstacle was eliminated by adding a gauge to the side of the bed to provide a visual cue for the care team. The team encountered an unexpected barrier in that the nurses didn't understand the purpose of the checklist; they thought they were merely following physician orders. Once educated on the science and patient benefits, compliance rates soared.

In the ICU alone, each patient undergoes close to 100 procedures a day at the hands of many different caregivers. The opportunities for error and miscommunication are

compounded as the number of interactions increases. Pronovost believes that standardizing procedures and instituting checklists will improve outcomes. He begins by consolidating clinical evidence and guidelines into a tool that clinicians can use at the bedside as a reminder of the best practices. Pronovost's checklist offers a simple, easy-to-follow protocol - an idea borrowed from aviation safety. In both flying and medicine, the lives of many are in the hands of those at the helm. Though the authors acknowledge that there are many more complexities to medicine, the parallels are striking.

Pronovost turns his attention to reducing central line infections in the surgical ICU. He believes that the rate of these infections could be diminished, even in very ill patients, and he is surprised by his peers' feelings that central line infections are somewhat inevitable. When he broadens his investigation of central line infections, he finds that proper protocol was followed only 30% of the time.

Throughout this book, Pronovost and Vohr share details of projects implemented through teamwork and incremental change. Instead of developing a universal measure, they stress the importance of each hospital building a team to diagnose and then treat its unique cultural and organizational problems. Once the team develops an approach and brainstorms possible obstacles, the checklist is pilot tested. This method

allows caregivers the opportunity to fashion their own policies rather than having protocols imposed upon them. In essence, instructing people how to solve problems on their own provides the tools needed to institute safer practices across all clinical disciplines and areas of the hospital.

Tales of hard work, grueling hours, and bruised egos punctuate this journal documenting how small steps toward gradual improvements can eventually lead to an overhaul of care.

As we begin to accept that our caretakers may unintentionally cause us harm, we see the human feeling on both sides of the spectrum – patient and physician. Although *Safe Patients, Smart Hospitals* is at times a sordid look at hospitals, it also offers hope by providing attainable goals, making the challenge of patient safety seem less of a mystery. Hospital administrators, health care practitioners, and patients who read this narrative will have a better understanding of how critical their roles are to advancing safe care, and how simple it can be.

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