



PITTSBURGH REGIONAL HEALTH INITIATIVE

Spreading Quality, Containing Costs.

PRHI EXECUTIVE SUMMARY

Spring 2008

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Physician Champions share progress

With health care under increasing pressure to reduce waste and error, PRHI discovered that excellence wasn't as readily driven from outside as from within, by talented, passionate clinicians who challenge their teams and institutions to deliver the best possible results.

Although passionate about quality, physicians often know more about what they want to achieve than about how to achieve it. And those who succeed may find resistance to the "spread" of their ideas.

THE PHYSICIAN CHAMPIONS PROGRAM

To encourage continued improvements in healthcare quality in our region, and to spread those changes more broadly, PRHI, in partnership with the Allegheny County Medical Society and the Pennsylvania Medical Society, inaugurated the Physician Champions program in December 2006.

Eight physicians in different settings emerged through a rigorous selection process that drew more than 30 physicians interested in applying PRHI's Perfecting Patient CareSM (PPC) principles.

The Jewish Healthcare Foundation provided \$25,000 grants for each project, in recognition of the nationally acclaimed successes achieved over the past few years by a small cadre of physicians who, with PRHI support, applied PPC principles to their work with stunning success.

The Physician Champion Program was designed to help amplify these successes. Clinicians receiving the first round of Physician Champion grants were:

- ◇ Eileen M. Boyle, MD, Associate Medical Director, East Liberty Family Health Care Center, and
- ◇ R. Harsha Rao, MD, Professor of Medicine, University of Pittsburgh School of Medicine, Division Chief, Veteran Affairs Pittsburgh Healthcare System, for improvements to diabetes care.
- ◇ Jerome E. Granato, MD, MBA, Medical Director, Coronary Care Unit, Allegheny General Hospital, and



PRHI Physician Champions, L-R: Eileen Boyle, MD; Harsha Rao, MD; Jerome Granato, MD, MBA; Dennis English, MD; Fred Harchelroad, MD; Michael Culig, MD; Adele Towers, MD; Eric Rodriguez, MD.

- ◇ Fred Harchelroad, Jr, MD, FAAEM, FACMT, Chairman, Department of Emergency Medicine, Allegheny General Hospital, for reductions in central line-associated bloodstream infections.
- ◇ Michael H. Culig, MD, Medical Director, Ed Dardanell Heart & Vascular Center, West Penn Forbes Regional Campus; Director, Division of Cardiac Surgery, The Western Pennsylvania Hospital, for better patient handoffs post-surgery.
- ◇ Dennis English, MD, Medical Director, Women Care Associates, Magee-Womens Hospital of UPMC, for more accurate Pap smears.
- ◇ Adele L. Towers, MD, MPH, Medical Director, Health Information Management, UPMC Presbyterian Shadyside Southside, Associate Professor of Medicine and Psychiatry, University of Pittsburgh, School of Medicine, and
- ◇ Eric G. Rodriguez, MD, MPH, Associate Professor of Medicine, Univ. of Pittsburgh, School of Medicine for better patient transfers to nursing homes.

PROGRAM REPORT

On January 29, 2008, these physicians concluded their grants with progress reports at a Physician Champions conference held at the Herberman Conference Center at UPMC Shadyside. This special edition of the *PRHI Executive Summary* describes their progress.



See page 9

Dr. Jerome Granato arrived at his career in cardiac medicine only after a stint as a chemical engineer. Perhaps the early training helps explain his passion for systematic improvement to health care, augmented by practical continuing medical education programs. Perfecting Patient CareSM (PPC), based on Toyota’s industrial engineering model of improvement, seemed tailor-made for his continued work to reduce central line-associated bloodstream infections (CLABs) at Allegheny General Hospital.

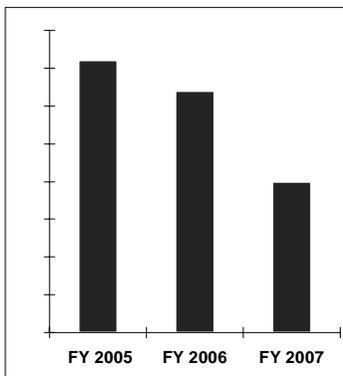
Dr. Granato succeeded Dr. Richard Shannon, who garnered national attention for using PPC principles to reduce CLABs in the Medical Intensive Care Unit (MICU) and Cardiac Care Unit (CCU) at AGH by over 90%. As a Physician Champion, Dr. Granato sought to reduce infections and complications from central lines even further, and sustain the gain through:

- Continued standardization of practices and equipment
- Continued vigilance, using real-time data to investigate every single infection
- Organized, practical training modules, required annually of every nurse and doctor who handles a central line

“The old paradigm was ‘See one, do one, teach one’ and hope for the best,” he said. “We knew we could do better than that.”

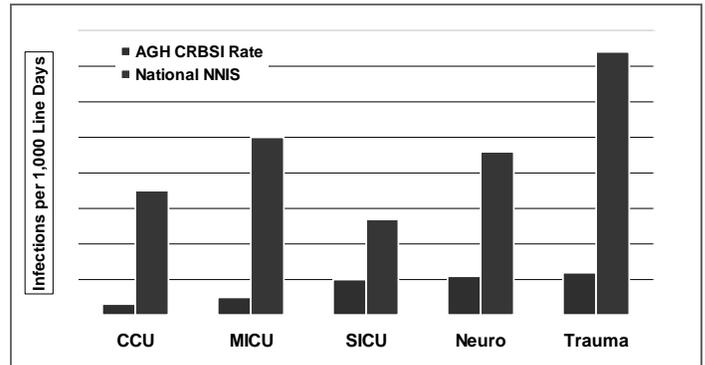
THE FEMORAL LINE

The three most commonly used vessels for placement of a central line are the internal jugular vein (in the neck), the subclavian vein (near the clavicle or collarbone), and the femoral vein (in the groin). The femoral vein is easier to insert than the others; however, it is more difficult and time-consuming to dress, and because of its location, is far more vulnerable to infection.



The message spreads to the general floors. Over the past two years, there’s been a 44% decline in the number of infections. Most of the lines used on these floors are the safer peripheral or “PICC” lines.

In fact, the National Nosocomial Infection Surveillance System (NNIS) used by the CDC to track central line



The message spreads to other ICUs. Bars on the right represent the national average of bloodstream infections in ICUs, as tracked by the CDC; bars on the left show Allegheny General’s rates by comparison.

infections, does not track femoral line infections. When work began at Allegheny General, the team decided to count all femoral line infections as central line infections—and reduce all infections as close as possible to zero.

As it became increasingly clear that femoral lines were at increased risk for infection, a strong preference for the subclavian and jugular sites was established; but as with other improvements, this one created additional challenges.

Dr. Granato wondered about the unintended consequences of training all physicians in the insertion of subclavian and jugular lines. While lines at those sites are less prone to infection, the insertion itself carries a 5% risk of pneumothorax (a collapse of the lung due to an abnormal collection of air outside the lining of the lung, between the lung and the chest wall) or arterial puncture. These are serious complications.

“We know our training is reducing infections. We need to know whether our training can also reduce the risk of the other complications as well,” said Dr. Granato.

PPC TRAINING HELPS IMPROVE EFFICIENCY

Through the Physician Champion grant, Dr. Granato was able to send the Chief Resident and five charge nurses through four days of intensive training at PRHI’s PPC University. The resulting knowledge helped spread process improvement strategies throughout the units.

For example, the team moved the mobile line cart out of the supply closet and now moves it from room to room as

needed. This eliminates the need for the nurse to leave the bedside during the procedure. They also developed standardized procedures, labels and checklists. Reducing interruptions reduces the opportunity for error, and ultimately reduces the amount of time needed to complete the procedure safely.

INTERNAL TRAINING HELPS IMPROVE SAFETY

Dr. Granato's team formalized central line training for doctors and nurses. All clinicians must successfully complete an online course and written exam. For physicians, training then moves to a lab with mannequins where they receive hands-on training in line insertion. New employees, of course, must complete the training. But everyone must complete yearly recurrent central line training as well.

"It's a message from our CEO," said Dr. Granato. "This is now a part of how we conduct business."

Recently, Dr. Granato was asked by The Association for Professionals in Infection Control to duplicate the program as a series of DVDs, slides and written materials. Those materials have now been distributed to hospitals across the country.

He and his team, including Kimberly Curry, RN, BSN, Joy Peters, RN, MSN, MBA, Julie Gerstbein, RN, MSN, CCRN, Veronica Andrews, RN, Cheryl Herbert, RN, CIC, and Richard P. Shannon, MD, presented the results of the central line work at the International Forum of Quality and Safety in Health Care, held in Paris this spring.

CHALLENGES

Dr. Granato notes several barriers to progress. Staff turnover continues to dilute the effects of the training, the perception of relevance, and high motivation. A plethora of competing priorities—from an emphasis on ventilator-associated complications to the change to an electronic medical record—threatens further distraction. Finally, the organizational structure of a hospital, so unlike a corporation, can make lateral cooperation among differing groups challenging.

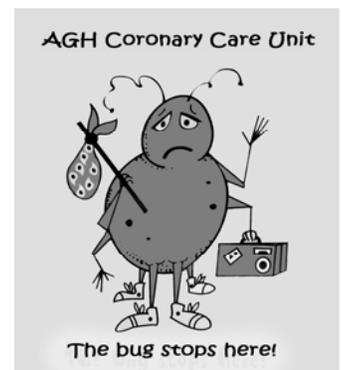


The Bug Stops Here: Allegheny General Hospital's Coronary Care Unit celebrates one year with ZERO central line infections. The unit would complete a nationally trendsetting 15-month run with zero infections.

RESULTS

Last year the CCU celebrated 15 months without a single central line infection. Such an accomplishment set a new national standard, and the unit was recognized with the prestigious 2007 Baxter AACN Excellence in Patient Safety Award.

The rate of infections was low and trending lower. But what about the rate of the other complication, pneumothorax? The number of pneumothoraces has remained relatively stable; however, far more central lines are being inserted. If Dr. Granato were to calculate the "rate," it undoubtedly would have decreased dramatically. But he prefers to keep his eye on that absolute number, in an effort to keep pressing toward the ultimate goal: zero.



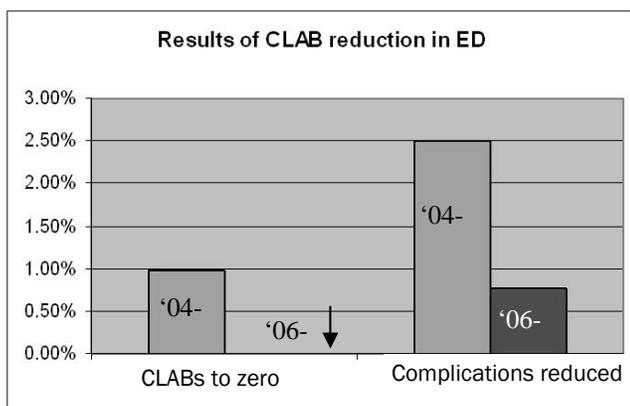
Fred Harchelroad, MD

Reducing central line infections in the ED at Allegheny General

"I stood on the shoulders of giants," said Fred Harchelroad, MD. "I built on the work reducing central line infections begun by Dr. Shannon and continued by Dr. Granato at Allegheny General."

With such good control data—four years' worth—Dr. Harchelroad decided to take on the reduction in central line infections (CLABs) as his Physician Champion program. His approach would include concepts used in the handling of hazardous materials.

CLABs among Emergency Department (ED) patients are difficult to track, and not every hospital does. When a central line is inserted in the ED, the patient is then transferred to the appropriate medical unit. ED staff may not know whether that patient ultimately developed an infection, or whether their processes played a role.



"It was a huge process to tackle," said Dr. Harchelroad.

Dr. Harchelroad decided to track years of data, determine how many ED patients had developed CLABs after moving to another unit, and see how near zero the rate could go.

"We had a head start in philosophy and training," said Dr. Harchelroad. "A number of people in units across the hospital had been trained in Perfecting Patient CareSM. By July 1, 2005 every physician who placed central lines, and every nurse who cared for them in the ED, had been trained in standardized procedures."

Standardizing procedures is a basic principle of Perfecting Patient CareSM and other Toyota or Lean improvement efforts. Standardizing reduces wasted effort and material, and chances of introducing error. It also makes variations visible. Learning why a standard procedure had to be modified leads to knowledge.

METHOD

Building on a two-year control cohort (2004-05) Dr. Harchelroad's team collected an additional 24 months of data (2006-07). In conjunction with the hospital's Infection Prevention team, the ED's Quality Management and Coding/Billing teams, through a 100% chart review, determined whether patients whose central venous lines were placed in the ED went on to develop central line associated bacteremias.

Dr. Harchelroad's team visited patients with lines on the fifth day of their hospitalization, and an infection control practitioner evaluated each chart one month after discharge. This retrospective provided valuable insight.

PROCESS CHANGE

All physicians and nurses in the ED and ICUs have been through central line training; but not all nurses on the regular nursing floors. So patients with central lines from the ED were transferred only to a critical care unit, not to a regular nursing unit.

Streamlining the process for efficiency—making sure equipment and supplies are always available, for example—makes the insertion process go faster, reducing the patient's potential for exposure to pathogens. Working together, the ED team reduced the time for a central line insertion from 41 minutes to just 12.

CHALLENGES

Dr. Harchelroad found maintaining the sense of urgency among competing priorities difficult for physicians, nurses and hospital administrators. The line between research and quality improvement can be thin, and Institutional Review Boards are becoming more vigilant about required permission.

RESULTS

During the control period, 709 central lines were placed, resulting in 7 (0.98%) CLABs, and 18 (2.5%) complications (12 pneumothoraces; 6 arterial punctures). During the study period, 638 lines were placed, resulting in zero CLABs, and 5 (0.78%) complications (2 pneumothoraces; 3 arterial punctures). Patients clearly benefited from hospital-wide spread of watchfulness and standardized procedures used to combat central line infections.

THE WORK CONTINUES

Dr. Harchelroad points out that this work has put AGH ahead of the curve when it comes to preventing infections, many of which will no longer be compensated by Medicare starting later this year.

Eileen Boyle, MD and her team at the federally qualified East Liberty Family Health Care Center (ELFHCC) used techniques borrowed from industry to tackle the primary indicator of good diabetic care: the hemoglobin A1c (HbA1C) test. With a Physician Champion grant from the Jewish Healthcare Foundation and training from PRHI, Dr. Boyle’s team used Toyota-based Perfecting Patient CareSM methods to untangle the components of excellent diabetes care, one by one, to make sure their patients got the best care every time.

ELFHCC has been part of the Health Disparities Collaborative (HDC) since 2005, and has been receiving quality of care data quarterly since then. The clinic is able to benchmark against others in the region and nationally, to measure progress.

Simultaneously, in an effort to improve quality, ELFHCC is implementing the Wagner Chronic Care Model. Dr. Boyle’s team discovered that Toyota-based methods are exceedingly useful in implementing the six areas of transformation of the Chronic Care Model: community; organization of health care; self-management goal setting; decision support; clinical information systems; and delivery system design.

HEMOGLOBIN A1C: THE CANARY IN THE DIABETES COAL MINE

One hallmark test that determines whether diabetic patients are receiving the proper care is a test known as hemoglobin A1c or HbA1c. It is the standard test to determine blood sugar control in diabetic patients, as it varies less than the “finger stick” blood glucose readings from day to day. This test examines red blood cells to determine the average amount of glucose that has been circulating in the blood over the preceding three months. In non-diabetic people, the range is 4% to 6%. In poorly controlled diabetics, it is 8% or more. In diabetic patients whose blood glucose is under control, it’s around 7%—the target reading in the Chronic Care Model.

Presented by the Pittsburgh Regional Healthcare Initiative | Concept by Eileen Boyle, MD.

You can be healthy with Diabetes

HBA1C	AVERAGE BLOOD SUGAR (GLUCOSE)	RISK OF COMPLICATIONS
6%	120	Healthy Living
7%	150	
8%	180	
9%	210	Increased Risk
10%	240	
11%	270	High Risk!
12%	300	
13%	330	
14%	360	

What is HbA1C?

The hemoglobin A1c test (also called H-b-A-one-c) is a simple lab test that shows the average amount of sugar (glucose) that has been in a person’s blood **over the last 3 months**. It is the best test for a health care provider to tell if a person’s blood sugar is under control. All people with diabetes should have an HbA1c test at least twice a year. If their blood sugar stays high, they should get the test every 3 months.

Potential Complications

- Blindness
- Amputation
- Sexual dysfunction
- Heart attack
- Kidney failure

This poster, created by Dr. Boyle with PRHI, offers a hopeful message to patients about self-management.

PERFECTING PATIENT CARESM BEGINS

First, Dr. Boyle’s team made sure every diabetic patient was included in their registry, which helps track progress and involves patients in their care – one of the major tenets of the Chronic Care Model. Once registry participation expanded from 94 diabetic patients to all 390, tracking of HbA1c results began.

The initial findings were disappointing: the average HbA1c reading for diabetic patients was 9% – nowhere near the target 7% range. Many times, clients of federally qualified health clinics are labeled “vulnerable” or worse, “noncompliant.” Rather than resorting to simplistic explanations or labels, Dr. Boyle’s team used a series of “why” questions, as taught in the Toyota-based method. They sought the root causes for the problem, and discovered that most patients did not know what HbA1c meant, could not afford a visit, could not afford medication, and could not get timely appointments.

Eileen Boyle, MD Improving diabetes care (con't.)

By breaking down the problem into its component parts and troubleshooting them one by one, an overwhelming problem became manageable. Here's what they did to address each root cause:

- To enhance health literacy, the team created a poster for every room describing, in simple terms, what HbA1c was and why it was important. To augment the impact of this “teachable moment,” they obtained A1c meters to use on site, so patients could see their results in real time. Patient understanding increased dramatically. The meters are less expensive to use, but just as reliable as traditional lab tests, and insurance covers the tests at the same rate. Thus, the patient-friendly move to real-time meters actually helped the clinic recapture \$9 per test, turning it into a modest money-maker.
- Most patients could pay for a visit or prescriptions, but not both. The pharmacist at the 340B pharmacy on site made sure patients always filled out patient assistance forms, providing help filling out the forms if necessary. This simple step qualified many people for free medications from pharmaceutical companies, resulting in \$89,000 in free medications for patients in FY 2007—a cost that the clinic would otherwise have written off.
- The clinic's schedule was a problem, with appointments always two or three weeks out, and costly no-shows hovering at around 40%. A careful redesign of the appointment system was based on only one thing: *what do patients need?* Clients motivated to call the doctor because of discomfort often lose that motivation if they have to wait two weeks for an appointment. The clinic carefully rolled out open access scheduling, correcting glitches together as they occurred. Within days, the system was working well, and no-shows plummeted to less than 15%. This created a highly unusual and somewhat welcome problem—what to do with all the open time. Staff proactively began contacting patients from the diabetes registry to fill unused slots!

In 2007, ELFHCC saw their patients' average HbA1c rates drop from 9% (considered out of control) to 7.6% (not perfect, but lower than the national average and closing in on the target). All

diabetic patients are included in the registry, receive education on the importance of regular checkups, and are proactively called for appointments if they haven't been in for awhile. Additionally, many clients now have access to free medications, and those who need them have access to same-day appointments.

SPREAD

Although this work was done to help improve care for diabetic patients, the methods have begun to spread to other care areas. One example involved the vaccine stored in the clinic's refrigerator. It was an easy enough mix-up: adult Tdap vs. pediatric DTap vaccines. Both protect against tetanus, diphtheria and pertussis, but the dosages vary. Keeping the vaccines in the same area of a disorganized refrigerator caused confusion and error. The entire staff organized everything in the refrigerator according to the Toyota-based discipline of 5S (sort; set in order; shine; standardize; sustain), taking special care to separate and label adult and pediatric vaccines. Within one month, vaccine errors decreased from 3 per month to zero.

Dr. Boyle's team is gratified to see diabetic patients receiving better care. But perhaps most important, she notes, is the fact that the clinic is becoming a learning organization, making improvements as part of everyday work. The payoff is improved quality and lowered cost—something that could benefit all aspects of American health care.

CORE MEASURES	HDC Goals	National	SE Cluster	WPA HDC	ELFHCC baseline 6/05	ELFHCC stats as of 12/07
HbA1C	<7%	7.8	7.8	7.5	9.0	7.6
2 A1C's in 12 months	>90%	35.4	38.6	52.5	50.0	46.4
Statin use	>60%	49	53.5	34.5	46.4	53.5
ACEI/ARB use	>75%	65.7	69.6	43.6	70.4	74.5
Aspirin use	>80%	56.3	62.4	59.9	78.9	75.9
LDL chol <100	>70%	51.4	50.5	51.6	38.5	46.0
BP< 130/80	>40%	37.2	36.4	40.0	27.8	34.7

Most measures of the quality of care for diabetics have improved since ELFHCC began using Perfecting Patient Caresm to implement the Chronic Care Model.

Harsha Rao, MD

Individualized team care for diabetics at VA Pittsburgh

“It was my dream of 23 years,” said Harsha Rao, MD, of his diabetes care model involving individualized team care. An endocrinologist at the VA Pittsburgh Healthcare System, Dr. Rao used Perfecting Patient Caresm to implement the model as part of his Physician Champion grant.

Efficient diabetes care remains an elusive goal because of the number of routine tests required (hemoglobin A1c and lipid levels, foot and eye exams and more) and because current reimbursement schemes pay for multiple appointments, not a single, efficient one. Physicians find it nearly impossible to do everything in a single visit and patients often can’t afford the time or money for multiple appointments. The set-up makes suboptimal care and outcomes almost inevitable—at a time when the American Diabetes Association is raising the stakes on what constitutes appropriate care.



A lighter moment: The VA diabetes care team debriefs. L-R Pharmacist Lisa Fisanich, Dr. Harsha Rao, Nutritionist Julie Heinzel, and Mary Stosic, CRNP. Team member not pictured, Diabetes Educator Jan Beattie, RN.

INCREASING THE BIG THREE: INTENSITY, VOLUME, AND PERSONALIZED CARE

Dr. Rao’s dream has been to refine and improve on the type of team approach he first saw in England over 20 years ago. The model he has developed blends the best of the U.S.-style “group” model, which provides a way to treat a large number of patients, but sacrifices depth, with the standard “individual” patient-doctor visit, which provides intensity but sacrifices volume.

“The traditional single provider-patient dyad is inefficient. Patients must make separate appointments to see a nutritionist or diabetes educator, or the providers won’t be

paid,” said Dr. Rao. “There are so many lost opportunities.”

The VA team consists of Dr. Rao, a nurse educator, pharmacist, nutritionist and nurse practitioner. The patient spends roughly 15 minutes at each of four “stations.”

Dr. Rao floats between the stations, consulting and troubleshooting as necessary. This approach delivers to each patient the best care from each specialized area, within a comprehensive, intense, and relatively brief visit. And as for volume, Dr. Rao credits Perfecting Patient Caresm methods for allowing the team to increase the flow of patients during its four-hour afternoon sessions from eight to 12 on just the third attempt.

“We went according to four principles: define the work content and sequence; the work flow and connections; the pathways; and then evaluate constantly to eliminate waste,” said Dr. Rao.

One key tool, notes Dr. Rao, is the computerized documentation, which has been tailored to be a “perfect fit” for the model. “Four people make four notes, and at the end of the visit, we tie it into a single note. We have excellent documentation, although we spend very little time on it.”

RESULTS

Providers now see 20% more patients per hour, and are logging 100% documentation with attention to blood pressure, foot and eye exams, A1c, LDL cholesterol, urinary microalbumin and creatinine.

In the year since the model was initiated, 57 patients have been seen at least three times, and have sustained a mean decline in these key areas: A1c levels from 8 to 7.4; LDL from 94 to 73 with 90% less than 100; and blood pressure from 137 to 127, with three out of five achieving the standard. Compliance with ADA care guidelines now stands at 100%. Nationally, aspirin use is at 30%; the VA Pittsburgh began with an impressive 80%, which is edging ever closer to 100%.

Dr. Rao now looks to moving this model beyond a circumscribed quality project and into the realm of research to learn how it might be more widely adopted, and paid for.

Closing in on 100%

- Documentation of care
- ADA care guidelines
- Aspirin use

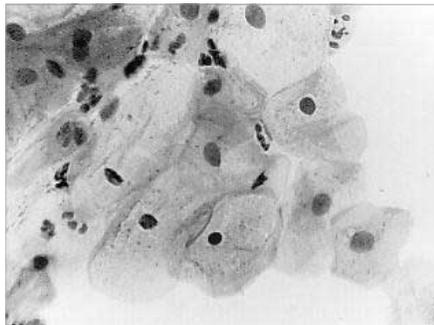
It's the most common laboratory test conducted in the United States: the Pap smear, (named for its creator, pathologist George Papanicolaou). Since its widespread adoption in the 1950s, the Pap smear, which tests cervical cells for early changes heralding the development of cancer, has saved the lives of countless women. Today, over 55 million of the tests are done on American women each year.

The problem: about one in five of these tests nationwide is inaccurate.

Guided by prior work of UPMC pathologists who used Toyota-based methods to improve collection techniques,* Dr. Dennis English used his Physician Champion grant to introduce the methods at Womancare Associates (WCA), a large physician practice affiliated with Magee-Womens Hospital of UPMC.

THE RIGHT CELLS

Dr. English recognized that 85% of the discrepancies had to do with faulty sampling in the doctor's office. Often, if cells are not collected from the right place on the cervix (the transformation or T-zone), a vague diagnosis can occur. This diagnosis, Atypical Cells of Undetermined Significance (ASCUS), can require that the patient return for duplicate, cumbersome and costly testing. In the worst case, a Pap test collected from an area outside the T-zone can register a false negative. Dr. English introduced Toyota principles to improve the quality of the samples and reduce inefficiencies.



Pap smear: most common laboratory test in the U.S. The problem: 1 in 5 is incorrect.

STUDY DESIGN

All practice members received their baseline data from 2005-07, showing how often their samples had been adequate for the lab to process accurately. The control group of 20 providers received only their baseline data. During the study period, March to November 2007, the study group of 26 providers also received:

- Training in Perfecting Patient CareSM, focusing on continuous process flow and processing the samples one at a time

- Additional training in Pap smear collection techniques, to ensure quality the first time
- A supplemental data form, or checklist, to serve as a visual reminder, and to enhance communication with the lab
- Their medical assistants were reeducated on proper handling of Pap smear samples and the importance of completion and submission of the data form

THE IMPORTANCE OF THE CHECKLIST

Using the checklist ensured that the same collection procedure was used each time, and quickly became a habit. With input from several providers, a checklist that takes just moments to complete was developed. One item asks the physician to rate the quality of the sample. Interestingly, the physician's assessment is usually correct.

Because the checklist now accompanies the sample to the lab, it serves as a means of communication between physician and the screening cytotechnologist. The doctor can, for example, flag any irregularities that occurred during collection, or impart other information the lab might find useful. The cytotechnologist can pick up the phone if there's a problem. Improving the feedback loop between physician and laboratory has helped improve sample quality.

RESULTS

During the study period, WCA providers conducted 18,868 Pap tests and filled out 13,127 checklists, for an overall participation rate of 70%. While the overall rate of samples lacking cells from the T-zone increased across the practice and the laboratory, the rate of increase for the study group was less than seen for the lab overall. The overall lab increase in cases with absent T-zone cells may have been related to changes in Pap smear processing within the lab.

The most striking findings occurred among pre-menopausal women where a physician from the study group had completed a checklist. Each of these findings is indicative of a higher

* "Improving Papanicolaou test quality and reducing medical errors by using Toyota production system methods." American Journal of Obstetrics and Gynecology, 2006. The group, led by UPMC Pathologist Stephen S. Raab, M.D., gynecologist Carey Andrew Ja-Ja, M.D., Jennifer Condel, SCT (ASCP) MT, and David J. Dabbs, M.D., looked at ways to improve the collection and analysis of the Pap test. The work was funded in part by grants from the Jewish Healthcare Foundation and the Agency for Healthcare Research and Quality.

quality Pap smear collection:

- The rate of specimens lacking cells from the T-zone decreased from 8.3% to 6.2%. In the control group, the rate actually increased from 8.9% to 10.4%.
- The vague ASCUS diagnosis decreased from 7.3% to 4.8% within the study group, but only 6.8% to 6.4% within the control group.

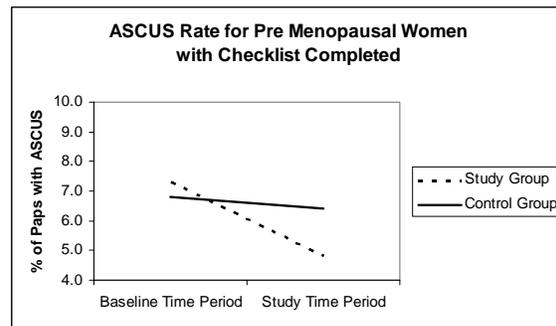
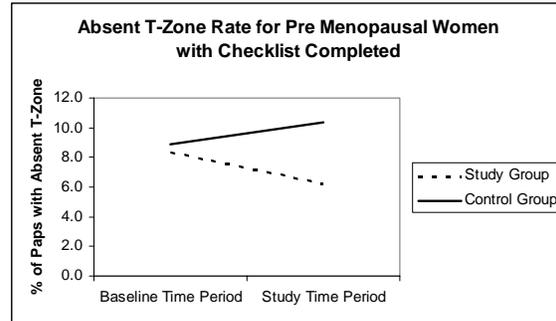
LESSONS LEARNED

During the project, Dr. English discovered wide variation even in the most “standard” of medical practices, the Pap smear collection. Engaging busy practitioners in voluntary quality improvement projects, including process standardization, is difficult. Improvements require constant reinforcement or the process tends to revert to its baseline. Still, Dr. English’s experience confirms that Toyota-based principles can successfully be applied to medical care with quality improvements the result.

LOOKING AHEAD

Dr. English will present these data to the Quality Committee, and believes they will recommend using the checklist for collecting Pap smears for all pre-menopausal women.

Greater improvements in the study group:



Two books mark PRHI’s 10th anniversary



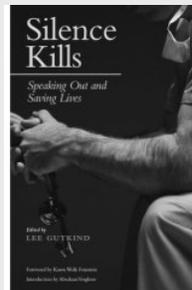
The Pittsburgh Way to Efficient Healthcare compiles 5 years of case studies from units in different hospitals around Southwestern Pennsylvania that successfully applied industrial principles to work, benefiting patients and employees alike. The book offers a history of the work of the **Pittsburgh Regional Health Initiative**. In the book, author Naida Grunden:

- Gives you a front-row seat to watch how Toyota-based methods and tools work in a healthcare environment.
- Describes simple, very specific steps that these facilities have taken to fix their systems – offering solutions to real problems confronting workers in everyday settings.
- Describes setbacks as well as successes, and shows how problems were resolved.

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"These essays illustrate how easily pride, misunderstanding, laziness, denial, poor data-gathering, avarice, expediency, selfishness and, above all, poor communication, can undo the best of technology, the best that medicine has to offer."—Abraham Verghese

The dozen personal essays in this collection, from patients and their caregivers, nurses, social workers, and physicians, address the devastating human results that can occur from a lack of communication and understanding among those in the health care profession. Medical error—much of it traceable to simple lack of communication—costs billions of dollars each year, in addition to the less quantifiable costs of the loss of trust in doctor-patient relationships and the decline in morale among health care professionals.

Essays edited by Lee Gutkind—Foreword by Karen Wolk Feinstein
Introduction by Abraham Verghese

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Texas A&M University Press #978-0-87074-518-8

Adele Towers, MD; Eric Rodriguez, MD

Improving transfer from hospital to nursing home

When an elderly patient is transferred from a hospital to a nursing home, all relevant information should travel with the patient. The problem: it doesn't always happen that way.

These transfers typically involve frail patients with multiple medical conditions. Their complex medical condition can complicate information transfer at a crucial time.

Creating a more efficient transition from a hospital to a nursing home was the focus of the Physician Champion program at UPMC Montefiore Hospital, led by Dr. Adele Towers and Dr. Eric Rodriguez. The two decided to look at patients in six units on the Internal Medicine Service who were completing acute hospital treatment and being transferred to nursing homes for extended care.

MAPPING A COMPLICATED PROCESS

"Patient transfer is not an event: it is a process that plays out over days, before and after the patient actually moves to the nursing home," said Dr. Towers. The process involves numerous, simultaneous channels of communication.

The team laid out their "current condition," mapping the process from the moment the transfer order was issued until the patient arrived at the nursing home. To better understand their "customers," staffers went to the nursing homes most frequently receiving transfers to learn what information was needed and how best to send it.

They looked at baseline data: 20 patients transferred to 18 facilities. They interviewed 67 staff members along the path—nurses, doctors, social workers, transportation workers, and nursing home personnel. Their investigation yielded 65 incidents of incomplete information, which led to 5 medication delays and 14 delayed transfers. In unmasking the true dimensions of the problem, the team learned that communication was often deficient because nurses did not have specific, structured ways to transfer information.

STANDARD WAYS TO COMMUNICATE

The team focused on the key data elements that nurses needed to communicate, and created a standardized form to make it easy and consistent to leave enough of the right information. It was a complex project—creating a form that would be easy for hospital nurses to complete at the bedside, yet would yield clear clinical information for any one of the hundred different nursing homes on the receiving end.

Simultaneously, the team created a comprehensive "checklist" of the myriad pieces of information needed for patient transfers.

PAPER OR ELECTRONIC?

Even as the team was creating paper forms, they learned that another hospital, UPMC St. Margaret, had created a transfer form based on information gleaned from electronic medical records, to which the entire hospital system had recently changed.

"In other words, the work flow changed while we were redesigning our work," said Dr. Rodriguez.



The team recognized that nurses did not like filling out paper forms, believing that it duplicated effort. Yet the receiving institutions preferred paper forms, as they are not linked to receive instructions electronically.

Currently, the report writers for the system's electronic medical records are working to create a pre-populated Nursing Transfer Report that will mimic the paper form, be easier for nurses to use, and which can still be faxed to each nursing home. The Report form will be tested and refined in pilot units at UPMC's Presbyterian, Shadyside and St. Margaret Hospitals and at the nursing homes receiving patients, before a system-wide rollout.

LEARNING TO LEARN

Perfecting Patient CareSM is often praised as a way to make lasting change. However, the Montefiore team benefited from a deeper aspect of the method—that is, the capacity to create a learning organization that responds to constantly changing conditions. The group never "arrived" at a single, unchanging form that met all needs at all times. Instead, they created a process by which continuous improvements can be made, taking into account the needs of patients, staff members and receiving nursing homes — and even new technologies.

"We could not have done it without them!"

—Adele Towers, MD

The project team included:

- Cathy Hammel, RN
- Diane Krueger, RN
- Social Worker, Mary Ellen Cowan

Michael H. Culig, MD

When a patient is admitted to a hospital for coronary artery bypass graft (CABG) surgery, he or she begins a multi-stop tour through the hospital system, traveling from the medical unit to the pre-surgery area to surgery to the intensive care unit (ICU) to the intermediate step-down unit and finally, home.

During any one of these hand-offs between units, confused information and inconsistent processes can place patients at increased risk of error. In his Physician Champion project, West Penn Forbes Regional Campus cardiothoracic surgeon Michael H. Culig, MD, applied Perfecting Patient CareSM methods to ensure smoother transfers to improve outcomes and reduce complications.

“In retrospect, the project was probably too big,” said Dr. Culig, echoing the experience of Dr. Fred Harchelroad. “Focusing on one area of one transition would have been a better way to start.”

SURGERY TO ICU

Observations of several patients’ trips from the surgical suite to ICU following surgery revealed nonstandard procedures. Patients arrived in the ICU with tangled IV lines which, in addition to posing a safety hazard for the patient, required 25 minutes of ICU nursing time to unravel.

After three iterations of work, keeping lines untangled became part of a surgical checklist. IV lines are organized and set up toward the end of the operation, reducing transfer time from 25 minutes to 5, reducing the “hassle factor” for the nurses, but more important, making patients safer.

“When things go wrong, confusion over the lines can be one of those things in a cascade of events that leads to catastrophe,” says Culig. “Having quick, easy access to the correct line — that single improvement — can keep a cascade of error from unfolding. When we systematically eliminate each part of a complex problem, we create a much safer environment for patients.”

HOSPITAL TO HOME

Dr. Culig believed that confusion at discharge led some patients to be readmitted or have less-than-perfect outcomes. He hired a nurse to call patients each day after discharge to reconcile medications with the patient, comparing what had been ordered in the hospital to what the patient was taking.

Improving transitions following cardiac surgery

“There was a lot of confusion,” said Dr. Culig. “In many cases, medications had not been ordered or were not being taken. Some patients didn’t realize that they were supposed to be taking coumadin (a powerful blood-thinning medication requiring regular blood checks.)”

Patients are now given office visits one week after discharge, instead of the usual 5-6 weeks. The patients see the same physician’s assistant who saw them in the hospital. These visits are helping to reconcile additional medication problems and confusion. Infections have been caught and treated early, preventing potential readmission. The incidence of problems decreased.

OBSTACLES

Dr. Culig discovered the difficulty of introducing sweeping changes in an organization that may not be fully prepared to embrace them. Dealing with a complex work pathway (medical unit, pre-surgery, surgery, ICU, step-down unit, discharge and post-discharge) requires “buy-in” from multiple leaders and work groups along the way. The challenge was compounded by marked turnover among the hospital’s anesthesiologists.

NEW START

Dr. Culig will soon start to design a program from the ground up, incorporating these principles at the new Dardanel Heart & Vascular Center at West Penn Hospital—Forbes Regional Campus. He will build the program using a Toyota-based model for continuous improvement.



Problem: patient arrives in ICU with tangled IV lines. RNs must spend 25 minutes to untangle them. The confusion poses risk for patients.



Creating a picture of the ideal situation involved use of a mannequin.



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CALENDAR

Date	Day	Time	Event	Place	Contact	CMES	Register
November 3 - 6	M - Thur	8:30 a.m. - 5:00 p.m.	PCC University	Courtyard Marriott - Monroeville	Barbe Jennion 412-586-6711 bjennion@prh.org	Yes	www.prh.org
September 15 - 18	M - Thur	8:30 a.m. - 5:00 p.m.	PCC University	Courtyard Marriott - Monroeville	Barbe Jennion 412-586-6711 bjennion@prh.org	Yes	www.prh.org
July 14 - 17	M - Thur	8:30 a.m. - 5:00 p.m.	PCC University	Courtyard Marriott - Monroeville	Barbe Jennion 412-586-6711 bjennion@prh.org	Yes	www.prh.org

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