



May 2005

# PRHI Executive Summary

Pittsburgh Regional Healthcare Initiative



## Community Calendar

PRHI invites you to announce your lectures and other events related to regional healthcare improvement in our newsletter and on our website!

Please send event notifications to:

**Naida Grunden**  
[ngrunden@prhi.org](mailto:ngrunden@prhi.org)

Send notice 8 weeks in advance to appear in the newsletter; at any time for inclusion on the website.

## Saving 100,000 lives—how many in Pittsburgh?

*The Institute for Healthcare Improvement (IHI) has begun a campaign to enlist thousands of hospitals across the country in a commitment to implement changes in care that have been proven to prevent avoidable deaths. The resulting 100,000 Lives Campaign covers six areas:*

- *Deploy Rapid Response Teams...at the first sign of patient decline*
- *Deliver Reliable, Evidence-Based Care for Acute Myocardial Infarction...to prevent deaths from heart attack*
- *Prevent Adverse Drug Events...by implementing medication reconciliation*
- *Prevent Central Line Infections...by implementing a series of interdependent, scientifically grounded steps*
- *Prevent Surgical Site Infections...by reliably delivering the correct perioperative antibiotics at the proper time*
- *Prevent Ventilator-Associated Pneumonia...by implementing a series of interdependent, scientifically grounded steps*

IHI was inspired by the same set of problems that has launched initiatives across the country, including PRHI: the estimated needless loss of 98,000 lives in American hospitals each year<sup>1</sup>; the world's most expensive healthcare system; and some of the worst measures of healthcare

quality in the industrialized world<sup>2</sup>. Now IHI has presented a national challenge that has been taken up by over a thousand hospitals so far, some in our own region.

PRHI supports the **100,000 Lives Campaign**, which aligns with our region's

stated goals. Southwestern Pennsylvania has a chance to respond to the campaign as a region, showcasing our progress nationally. Consider:

- Three of the six focus areas deal with **hospital-acquired infection**—an area where the work

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## New PRHI staff increases support for partners

PRHI has begun adding staff members in response to requests from the community for more support in certain areas of the region's healthcare improvement work. Those who are familiar with the Perfecting Patient Care System™ taught by PRHI (and based on the Toyota Production System) will recognize the associated concept of "pull." When the customer (PRHI partners)

express a need, the supplier (in this case, PRHI) responds to that need.

Three outstanding new staff members represent PRHI's response: *increased support for its partners.*

**Peter E. Carlson** is PRHI's consulting Perfecting Patient Care™ Implementation Manager. He is working on implementation of work improvements at the

Jewish Association for Aging, a long-term care facility.

Based in Washington, D.C., Pete consults on building healthy, high-performing organizations. For 12 years, he worked with management and union leadership to resolve complex strategic issues, improve performance and fully engage employees in the process. He also managed collaborative

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# 100k lives Campaign

SOME IS NOT A NUMBER. SOON IS NOT A TIME.

of PRHI partners has informed this part of the IHI program. For example, the VA Pittsburgh's pilot unit has lowered rates of methicillin-resistant *Staphylococcus aureus* infections by 85%, and the entire region is poised to move ahead to eliminate it. Central line-associated bloodstream infections (CLABs) have declined by 55% across the region, and work has intensified in virtually every intensive care unit in the region. Other units are concentrating on eliminating ventilator-associated pneumonias (VAPs). New opportunities to work on CLABs and other infections are arising through **PRHI's Critical Care and Emergency Medicine Working Group**. Contact Carla Zema if you would like to learn more ([czema@prhi.org](mailto:czema@prhi.org)).

• **Surgical site infections** are specifically addressed in **PRHI's Cardiac Working Group**.

This group is addressing a number of factors that affect the outcomes of patients undergoing coronary artery bypass graft (CABG) surgery. Contact Carla Zema if you would like to learn more ([czema@prhi.org](mailto:czema@prhi.org)).

• **See page 7** of this newsletter for the latest learning opportunity in the area of **Medical Emergency Teams (METs)**. Usually identical to hospital "code" teams, METs respond before the patient develops cardiac arrest. Rapid response has decreased unexpected hospital mortality by 30% in hospitals in the U.S., Australia and Great Britain. Can our region attain similar results?

## Let PRHI follow your progress

Can Pittsburgh emerge with the best results of the IHI campaign? Perhaps your hospital has taken on the challenge of **100,000 Lives**. If so, won't you please tell us what you're doing?

Every month or two, the *PRHI Executive Summary* will highlight the work going on in the community on this campaign. By sharing information, we can work together as a region to prevent thousands of deaths.

Please e-mail your inquiries and observations to Naida Grunden at [ngrunden@prhi.org](mailto:ngrunden@prhi.org), and put "**100,000 Lives**" in the subject line.

[1] Reinhardt UE, Hussey PS, Anderson GF. US health care spending in an international context. *Health Affairs*. 2004;23(3):10-25.

[2] Blendon RJ, Schoen C, DesRoches CM, Osborn R, Zapert K, Raleigh E. Confronting competing demands to improve quality: A five-county hospital survey. *Health Affairs*. 2004;23(3):119-135.

## Patient Safety Authority advisories are online!

# "Did you get the memo?"



Figure 1. Tuberculin and Insulin Syringes from One Manufacturer. The TB syringe appears at the top of the photo, the insulin syringe at the bottom. The vertical orange stripes on both products contribute to the confusion.

The Pennsylvania Patient Safety Authority (PSA) makes available on its website regular Patient Safety Advisories, warning clinicians and healthcare workers about problems that have been reported to its Patient Safety Reporting System (PSRS). Pennsylvania is a pioneer in this non-punitive reporting system that yields information for learning.

Recently, for example, PSRS sent out an advisory warning of look-alike orange syringes (tuberculin and insulin), which had been associated with overdoses.

*Do you want to be alerted electronically when the PSRS issues a new advisory? Send an e-mail to them at:*

**[patientsafetyauthority@state.pa.us](mailto:patientsafetyauthority@state.pa.us)**

Type "Advisory Mailing List" in the subject line and provide your name, job title and organization/address. Non-Pennsylvanians welcome.

## New PRHI staff increases support for partners

networks of companies to explore new strategies for managing and measuring the contributions of people to organizational success. Using action research as a tool for inquiry into what works, what doesn't, and why, the networks generated new insights into what makes the difference in performance improvement.

Pete served as an advisor to U.S. Secretaries of Labor Elizabeth Dole and Lynn Martin on strategies to promote high-performance work organizations. As the director of a national advisory commission of business and labor leaders, he organized forums of leading experts and practitioners to identify what was working and what was getting in the way of spreading the adoption of total quality management.

Pete also served as the chief economist for the National Alliance of Business, where he staffed the Board of Directors (composed primarily of top corporate officers), and the Business Advisory Council (composed of senior corporate human resource executives). During that time, Pete conducted case studies of the competitive strategies and changing human resource requirements of companies in the United States and six foreign countries, on loan to a national commission co-chaired by former Secretaries of Labor Ray Marshall and Bill Brock.

Pete holds a BA from Georgia State University and an MA from George Washington University in Economics.  
Contact: [pete.carlson@verizon.net](mailto:pete.carlson@verizon.net).

**Robert H. Graham** is PRHI's Perfecting Patient Care™ Implementation Manager, working to help clinicians in cardiac, critical care, and emergency medicine to apply the PPC principles to work redesign.

Bob came to PRHI from a long career in industry focusing primarily on the development, manufacture and supply of advanced materials. While at ALCOA Bob held a variety of positions relating to engineered products in a wide range of industrial markets including aerospace, defense, transportation and commercial products.

His positions ranged from first line manufacturing roles with positions in Quality Assurance and Management followed by new product development and venture

management assignments. He managed process and product development teams that created high-tech materials in support of NASA's Space Shuttle, advanced commercial and military aircraft, and high performance automobiles.

More recently, as Vice President for Manufacturing of the Pittsburgh high-tech company Magnetics, Bob led the implementation of Toyota Production System principles to dramatically reduce costs, lead times, inventory and scrap. Also, with focus on the overall health and safety of the employee, new initiatives led to a significant reduction in the all-injury frequency rates.

Bob holds both a BS and MS in Metallurgical Engineering from the Missouri School of Mines & Metallurgy, University of Missouri, Rolla.

Contact: [rgraham@prhi.org](mailto:rgraham@prhi.org)

Bringing 35 years of experience in health care—23 of them in management—**Margaret "Mimi" Priselac** will serve as PRHI's Director of Chronic Care Initiatives. Mimi has served most of her career at UPMC Braddock/Braddock Medical Center/Braddock General Hospital, most recently as President and CEO. She also served as Executive Vice President, Vice President of Nursing, Director of Psychiatric Services, and Psychiatric Head Nurse.

Along with her vast knowledge of hospital operations, Mimi brings particular strength in developing a low cost, high quality, community integrated health care dedicated to improving the health status of all served. She has demonstrated the ability to engage partners and develop creative solutions to identified community needs, winning recognition for her work in community outreach, mental health and children's programs.

In addition to serving on numerous healthcare-related boards, Mimi was recently honored with the 2003 Susan B. Anthony Women of Vision Award.

Mimi is a Registered Nurse with diploma from Westmoreland School of Nursing, BSN from the University of Pittsburgh School of Nursing, and MSN from the University of Pittsburgh Graduate School of Nursing.

Contact: [mpriselac@prhi.org](mailto:mpriselac@prhi.org).



**Pete Carlson, Consulting  
PPC Implementation Manager**



**Bob Graham  
PPC Implementation Manager**



**Mimi Priselac  
Director, Chronic Care Initiatives**

## Ohio Valley General pioneers automated IV pump technology

Some of the most lethal medication errors come through intravenous (IV) infusion. When it comes to the safety of patients receiving IV drugs, the facts are sobering:

- 56% of all medication errors are associated with IV medications.
- 61% of serious and life-threatening medical errors are associated with IVs.
- The most common errors associated with infusion devices are:
  1. Manually programming incorrect infusion parameters (e.g., rate, drug, dose);
  2. Failure to ensure that the right patient receives the right medication; and
  3. Tampering of infusion parameters by unauthorized users.

Can technology help stem the tide of IV medication errors? In one study, the University of Wisconsin Hospitals and Clinics

showed that implementing barcode scanning technology at the patient's bedside reduced medication errors by 87%.

### Automated barcode and "smart" infusion system tested at point of care

Ohio Valley General Hospital has become the first hospital in the United States to implement an automated system that uses barcode scanning and "smart" infusion system technology to help to ensure that patients receive the right IV medication in the right dose at the right rate. The system also gives nurses, physicians and hospital pharmacists real-time access to vital patient information from anywhere in the hospital where the system is installed.

Ohio Valley's IV Safety System, which replaces paper records, was developed jointly by McKesson Automation Inc., a Pittsburgh-based provider of pharmacy and health care supply automation solutions, and by San Diego-based ALARIS Medical

Systems, which develops and markets products for the safe delivery of IV medications.

### No more "death by decimals"

"It is well known that the administration of IV medications poses the greatest risk for harm to patients," says Peg Spisak, a registered nurse who serves as Ohio Valley's director of quality and risk management. "Those of us in health care are all too familiar with 'death by decimal' stories. For instance, an infusion pump rate was entered as 90 versus 9.0, or a weight-based drug calculation resulted in a person receiving 60 times the intended dose. Clearly, this system goes a long way toward protecting the safety of our patients."

Recently the Food and Drug Administration (FDA) ruled that barcodes must appear on most prescription drugs and on certain over-the-counter medications. However, FDA did not order health care providers to implement barcode scanning systems. With this system, Ohio Valley has implemented both barcode scanning and infusion technology to improve patient safety. The hospital also uses barcode scanning to ensure the accurate administration of oral medication, too.

### How Ohio Valley's IV safety system works

The IV Safety System operates in a three-step process:

1. Using a hand-held (HH) device with a built-in scanner, the nurse conducts a three-way scan of barcodes: a) his or her identification badge; b) the patient's wristband; c) the IV bag. This confirms that an authorized caregiver is giving the right medication in the right dosage to the right patient.

### A Summit for Achieving Magnet Research Status

## Nurse-Led Discovery: Advancing Patient Care in Daily Practice

This summit will help to demystify Magnet Research standards. Learn why research is important, see how it can be incorporated into your daily practice, and learn how it can improve your life and your patients' health.

**Wednesday, June 1, 2005, 7:30a-4:30p**

Oncology Nursing Society National Headquarters  
RIDC Park West  
Pittsburgh, PA

Inviting the participation of Chief Nurse Officers, Nurse Managers, Nurse Educators, Clinical Nurse Specialists, Data Nurses, Quality Improvement Coordinators, Patient Safety Officers, Utilization Reviewers, Nursing Students, and others interested in advancing patient care in daily practice...

**Contact: Karen Iobst**

**412.594.2563 - iobst@jhf.org**

Sponsored by: Health Careers Futures, Jewish Healthcare Foundation, Oncology Nursing Society

## “Smart” pump: a Pittsburgh first



1. Nurse scans his/her ID badge.

2. The nurse uses the same HH device to scan barcodes on the IV system before starting the IV. Patient information is then transferred electronically from the pharmacy to the IV pump.



2. Nurse scans patient wrist band.

3. The nurse presses a few buttons on the pump to start the IV medication. If an error occurs in matching any of the information, the IV system will not activate, and instead will signal the caregiver to review the data.

The IV Safety System is designed to help verify the “5 Rights” in administering medication to make certain that the right patient receives the right medication in the right prescribed dosage through the right route at the right time.

Ohio Valley uses barcode scanning of IV bags and other doctor-ordered medications to electronically record real-time information in the patient’s medical administration record (MAR).

McKesson Automation and ALARIS Medical Systems market their applications as Connect-IV™ and IV-RIGHT™, respectively. These applications are available to hospitals using the McKesson Admin-Rx™ barcode medication administration solution with the ALARIS™ Medication Safety system and its Guardrails™ Safety Software.

“This initiative is an integral part of our Quality Assurance and Risk Management Programs,” says William F. Provenzano, FACHE, Ohio Valley’s president. “We take pride in our accomplishments on this front, and we are always looking for ways to strengthen our leadership position in the realm of patient safety.”

### PPC Principle in play

The Toyota Production System, on which PRHI’s Perfecting Patient Care System™ is based, uses certain principles to understand and improve work. The principle of ‘fool-proofing’ is defined as follows\*:

*To produce quality products 100 percent of the time, innovations must be made to tools and equipment in order to install devices for the prevention of defects. This is called ‘fool-proofing’ and the following are examples of [devices that incorporate it]:*

1. *When there is a working mistake, the material will not fit the tool.*
2. *If there is irregularity in the material, the machine will not start*
3. *If there is a working mistake, the machine will not start.*
4. *When there are working mistakes or a step left out, corrections are made automatically and machining continues.*
5. *Irregularities in the earlier process are checked in the later process to stop the defective products.*
6. *When some step is forgotten, the next process will not start.*

(\*From Toyota Production System: Beyond Large-Scale Production, by Taiichi Ohno)

### Invitation to PRHI partners

At Ohio Valley’s invitation, PRHI is coordinating a site visit to the hospital to view the new technology. Those interested in such a visit, please contact PRHI Communications Director, Naida Grunden, [ngrunden@prhi.org](mailto:ngrunden@prhi.org), to set a date and time.



3. Nurse scans IV bag, prompting the transfer of information from the pharmacy directly to the pump.



4. Nurse programs pump. If the input is not perfect, the pump won’t activate, and it signals the caregiver.

## Confessions of a doctor with bad handwriting

*“It would be a good thing for the world at large, how ever unprofessional it might be, if medical men were required by law to write out in full the ingredients named in their prescriptions. Let them adhere to the Latin, or Feejee, if they choose, but discard abbreviations, and form their letters as if they had been to school one day in their lives, so as to avoid the possibility of mistakes on that account.”*

-- **Mark Twain**  
*San Francisco Morning Call*  
*October 1, 1864*

What happens in a community hospital that’s unlikely to have the latest high-tech physician order entry tool any time soon? Is there some other way to help make patients safer? And when is patience not a virtue?

### Survey as epiphany

A simple hospital survey became the source of an epiphany for one physician at Monongahela Valley Hospital (MVH). The results led Dr. William Kilpatrick to act on his long-held belief in patient safety.

Diane Cooper, Director of Quality Improvement at the hospital, sent MVH staff a questionnaire asking them to rank the best and worst hand-writers among the staff’s 120 physicians. When the results were published, Dr. Kilpatrick was chagrined to find himself

among the top five least legible writers in the hospital. Being a member of the Patient Safety Committee deepened his embarrassment, but also added to his

understanding that perhaps this pointed more to a system problem than a personal failing.

### Right tool for the job

A college-era shoulder injury makes writing painful for Dr. Kilpatrick, although he freely admits, “I’m also just a bad writer. But after 25 years of trying to block print, trying to go slowly, trying to be neat—to find myself on that list was sobering. It wasn’t malice or arrogance. I just didn’t have what I needed to submit perfect orders.”

Dr. Kilpatrick decided immediately to do something about it. When he saw a dietitian typing on a computer using wireless printing, the light went off. A three-year-old laptop with a wireless card sat unused at his house, a dinosaur by computer standards. He brought it to MVH where IT technicians quickly configured it to work within the hospital. They created a perfect MVH order template in MS Word—“It took 30 minutes to do the whole thing”—and Dr. Kilpatrick was armed with a new tool.

### “Unconditional love”

The first day, Dr. Kilpatrick began carrying the laptop everywhere, typing complete and perfect orders and printing them at locations convenient for the nurses. The response from the staff, according to Dr. Kilpatrick, was “unconditional love.” Could he really have gone from worst to first in one day? The short answer was yes.

But it wasn’t only the nurses and pharmacists who noticed.

Something changed for Dr. Kilpatrick, too, a shift in thinking.

“You can’t imagine how great it is, with the interruptions that *don’t happen*. No more nurses or pharmacists calling five times a day to clarify an order (and maybe guessing on others). My patients get better care, get their meds on time. And that’s a huge payoff for the tiny amount of time it takes to type the order.”

Dr. Kilpatrick noted that the nurses’ expectations began to rise once they knew that it was possible to create perfect orders every time. They began to ask when the other physicians in his group would buy laptops and start typing. What about discharge instruction sheets? How about progress notes?

### Pens kill

Yet several things conspire to make this prototype unlikely to spread. Three main barriers exist: laptops cost \$1,000 apiece; they must be dedicated solely to hospital orders—no Internet or e-mail for fear of virus contamination of the hospital’s computer system. The third barrier is more subtle. Many physicians would rather wait for the solution to come to them in the form of an expensive computerized physician order entry (CPOE) system purchased by the hospital.

With his new outlook on the problem of illegibility, Dr.



One physician decided not to wait until technology came to him. Armed with an old laptop, he has foresworn hand writing and now submits only perfectly typed orders.

*American Journal of Nursing special publication now available*  
**State of the Science on Safe Medication Administration**  
 March 2005  
*This report challenges nurses to help lead the way in reducing medication administration errors.*  
 To order a copy, call Jim Rosenbaum (267) 757-3554  
[www.nursingcenter.com/ajnmedsafety](http://www.nursingcenter.com/ajnmedsafety)

Kilpatrick bristles at the latter. Why wait?

“You can kill people with a pen,” he says.

He recalls one day since his epiphany when he heard a snippet of conversation he might not have noticed before. One nurse, trying to decipher a physician’s order, asked the nurse sitting next to her, “What do you think *this* is?” Dr. Kilpatrick believes “*this*” is a matter of life and death.

**Office EMR? Just say yes.**

The zeal for improvement expresses itself in his practice as well. Dr. Kilpatrick invested in an electronic medical record (EMR) system and had all his patient records scanned into it. Noting that he’s a slow typist, he installed voice recognition software to add speed and accuracy to things like progress notes and prescriptions.

He sees irony in the fact that most physician practices have computerized billing, but not computerized patient records.\* His system interfaces between the two functions, and he says that now he is able to do more for patients during their appointments.

Again, there are more reasons to wait than to go ahead with office EMR. Absent national standards, he may find that his system one day doesn’t “talk” to other systems, or is in some other way insufficient. But again, it’s an area where Dr. Kilpatrick becomes impatient. The immediate benefits, he believes, far outweigh the cost.

**“I don’t do that any more”**

“I used to take Rubbermaid bins full of charts home every night to review. I don’t do that any more.

And running around looking for pro-times? I don’t do that any more, either.”

Dr. Kilpatrick summarizes what he’s learned this way: “CPOE and electronic medical records are on the way. But we don’t have to wait! There are steps we can take right now to make sure our patients get better, safer care—while we and our staffs save time and money. Once you see it, you can never be satisfied with the status quo.”

*\* (Reported in the Post-Gazette March 22, 2005: a CDC report indicates that while 73 percent of doctors’ offices use computer technology for billing, just 17 percent use it to maintain medical records, and only 8 percent to order prescriptions electronically.)*



**No more pencils, no more charts.**  
 It’s a big expense, amortized over several years. Is office EMR worth it? Unequivocally yes, says MVH’s Dr. William Kilpatrick.

First International Conference on

## Medical Emergency Team Responses

Preventing Patient Crises...Protecting Patients in Crisis

Medical Emergency Teams (METs) are a preplanned group of health care practitioners who respond to acute patient deteriorations in hospitalized patients. They are usually identical to hospital “code” teams, except that they respond before the patient develops cardiac arrest. This recovery response has decreased unexpected hospital mortality by 30% in hospitals in the U.S., Australia and Great Britain. Come examine the impact on patient safety of METs.

Consider attending if you are a health care professional, especially patient safety officers, hospitalists, hospital-based physicians, critical care medicine physicians, hospital administrators, nursing directors, respiratory care director,s or resuscitation and clinical outcomes researchers.

**June 24-25, 2005**  
 David L. Lawrence Convention Center  
 University of Pittsburgh School of Medicine  
 Center for Continuing Education in the Health Sciences

**Register at <https://ccehs.upmc.edu/formalCourses.jsp>**

## Calendar, Spring/Summer 2005



Pittsburgh Regional Healthcare Initiative

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Day	Date	Time	Event	Place	Contact
Tues	May 3	4-7 p	Perfecting Patient Care Introductory Session	PRHI Learning Center PRHI Offices Centre City Tower, 24th floor Pittsburgh	<b>CME credits offered Registration required</b> Leslie Smith 412-586-6711 <a href="mailto:lsmith@prhi.org">lsmith@prhi.org</a>
Thurs	June 2				
Weds	May 7	8a-5p	PPC 101		
Friday	June 3				
Mon-Fri	May 16-20	8a-5p	Perfecting Patient Care™ University		
Weds	June 1	Registr'n: 7:00a Conf: 8a-5:30p	Nurse-Led Discovery: Advancing Patient Care in Daily Practice	Oncology Nursing Society National Headquarters RIDC Park West Pittsburgh	Karen Jobst 412.594.2563 <a href="mailto:jobst@jhf.org">jobst@jhf.org</a>
Fri-Sat	June 24-25	All day	Medical Emergency Team Responses Preventing Patient Crises...Protecting Patients in Crisis	David Lawrence Convention Center	Register at <a href="https://cehs.upmc.edu/formalcourses.jsp">https://cehs.upmc.edu/formalcourses.jsp</a>

*PRHI Executive Summary* is also posted monthly at [www.prhi.org](http://www.prhi.org)

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