PRHI Executive Summary

July/August 2006

PBS documentary features PRHI

Revisiting a bold community vision

By Karen Wolk Feinstein, PhD., President and Chief Executive Officer of the Jewish Healthcare Foundation and the Pittsburgh Regional Health Initiative. An edited version of this article appeared in the Pittsburgh Post-Gazette's "Private Sector" on July 25. Here is the essay in its entirety.

A documentary that has been airing since Spring on different Public Broadcasting System affiliates around the country is a good reminder of why the community rallied around the Pittsburgh Regional Health Initiative at its founding and also a good occasion to look at how far it has come since those early days.

Titled *Good News: How Hospitals Heal Themselves*, the film was made three years ago, but its message is as timely as it was then: the healthcare industry is filled with highly trained, well intentioned clinicians whose work is too often sabotaged by a delivery system in need of radical reform—or, better yet, reengineering.

The documentary's creator, Clare Crawford Mason, a former senior NBC producer, took her first look at the subject of quality engineering nearly 30 years ago in an NBC White Paper titled "If Japan Can, Why Can't We?" That film focused on the research of Dr. W. Edwards Deming whose theories guided Japan's post-war industrial revival.

Over the years, in other films and books, Clare has examined the application of these philosophies ever since, so it is no surprise that the bold experiment that is PRHI became part of this documentary.

It's a sign of the times in healthcare that PRHI's work also is featured in another documentary expected to air in October. These days, talk of quality engineering, which is at the heart of our mission, is the subject of many conferences in healthcare and regional healthcare coalitions akin to PRHI are sprouting across the country.

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Dr. Shannon spreads work to Penn

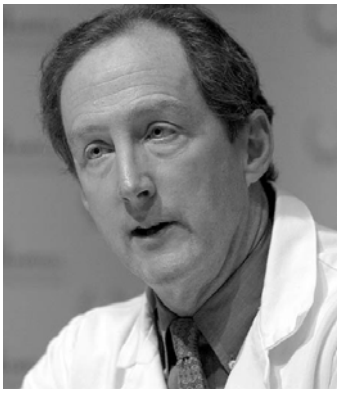

Photo by Pam Panchuk, Post-Gazette
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Dr. Richard Shannon, Chairman of the Department of Medicine at Allegheny General Hospital and PRHI Board Member, has announced his acceptance of the position of Vice Chairman of the Department of Medicine for Clinical Program Development at the University of Pennsylvania in Philadelphia. Dr. Shannon has come to national prominence for his work to eliminate hospital-acquired infections using Perfecting Patient Care™ (PPC). At Penn, Dr. Shannon will continue his work on infection control and patient safety.

"I owe this great opportunity at Penn in large measure to

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MRSA work lauded in Washington State

In a major presentation in Seattle in June, PRHI Director Peter Perreiah detailed the work being done in Pittsburgh hospitals to eliminate the spread of the antibiotic-resistant organism, MRSA*. The event, hosted by the Washington State Hospital Association (WSHA), was a "safe table," a frank, confidential discussion of problems and solutions among that state's clinicians. Mr. Perreiah gave his talk before some 60 participants, representing hospitals and health departments from across the state, and served as a panelist in the discussion that followed.

The VAPHS and CDC recently announced that its MRSA prevention program, pioneered with PRHI and the Perfecting Patient Care System™, will soon be adopted by the VA nationwide.

"It is very helpful to hear what strategies other communities are using to improve care," said Carol Wagner, Executive Director of Patient Safety Programs for WSHA. "We have a strong partnership within Washington State, and it's great to hear from outside the state as well."

MRSA work at the VA

Mr. Perreiah's presentation, "The Good Fight: Preventing Nosocomial Infections," centers on the reduction in MRSA at the VA Pittsburgh Healthcare System—a joint venture between the VA, CDC and PRHI that began in one unit and has since spread throughout the facility.

Mr. Perreiah described how, together with Team Leader Ellesha McCray, R.N., their team successfully introduced interventions based on PRHI's Perfecting Patient Care™ methodology that drove the MRSA rate on that unit from .94 infections per 1000 bed days of care in 2002 to just .27 by 2004. Innovations included:

Educating staff, visitors and patients about the general superiority of alcohol hand rub has been part of PRHI's MRSA reduction

- Notice on computerized patient record screen notifies clinicians of MRSA-positive patients, and prompts hygiene requirements.
- Large STOP sign outside each isolation room describes hygiene requirements for staff and visitors.
- Staff and visitors educated about the general efficacy of alcohol hand rub over soap and water in most instances. (The organism *c-difficile* still requires hand hygiene with soap and water).
- Stabilizing supply system ensured gloves, gowns and hand sanitizer are always available. Redesign of supply rooms freed up $20,000-worth of unused equipment.
- Improved staffing, increasing nurses with more than 1 year of experience and reducing reliance on registry nurses
- Improved shift change to impart more and better information very quickly.

Washington strategies

"In Washington, MRSA is evolving into an issue for communities as well as hospitals," says Ms. Wagner. She notes that the community-acquired variant of MRSA, which is distinctly different from the hospital-acquired strain, is found increasingly in public places, such as locker rooms.

It matters which strain of MRSA is encountered, because each requires a different antibiotic. However, the mechanism of transmission—usually the hands—is the same, no matter what the strain.

"We look at preventing transmission," says Ms. Wagner, "especially improved hand hygiene."

The state of Washington is the largest geographical area to undertake such a broad hand hygiene initiative. Among the program's features:

- Monitoring hand hygiene by measuring the amount of soap and hand sanitizer used in each hospital.
- Asking patients to ask their physicians if they have sanitized their hands.
- Asking visitors to sanitize their hands on entry and exit from patient rooms.

"The reception of providers has been excellent," says Ms. Wagner. "These steps not only protect patients, but providers as well."

*methicillin-resistant *Staphylococcus Aureus*

Health Technology Forum looks at infection

Pennsylvania mandates the collection of infection data. Private companies offer software to help count and manage infections. Soon the CDC will unveil the National Health Information Safety Network (NHSN) to collect and analyze infection data nationally.

The federal government's role in monitoring healthcare acquired infections became a subject of debate at a Technology Forum sponsored by the Pittsburgh Regional Health Initiative and several of the nation's leading information technology vendors.

The conference was intended to give clinicians and healthcare administrators a chance to make apples-to-apples comparisons of information technology designed to help them collect and analyze data in-house on infections, among other things. Vendors participating included MedMined, Inc., TheraDoc, Cereplex and Vecna.

Speaking at the forum, John A. Jernigan, M.D., Chief of Interventions and Evaluations in the CDC's Division of Healthcare Quality Promotion, estimated that nationally, 2 million hospital-acquired infections annually cause 90,000 deaths and cost $16,000 each. Estimated cost to the healthcare system is $27.7 billion.

CDC network debated

Dr. Jernigan said patient safety will be best addressed not just as hospitals collect and analyze data in-house, but as more of them go on to participate in National Health Information Safety Network (NHSN). He gave a progress report on the NHSN and an overview of its eventual capabilities.

The NHSN is a voluntary, confidential, electronic system for monitoring safety breaches associated with healthcare. It is the successor to the National Nosocomial Infections Surveillance System (NNIS) that the CDC has used since 1970 to monitor hospital-acquired infections.

Identifying infections

Not everyone shared Dr. Jernigan's view that the nationwide network was needed to improve the healthcare industry's ability to assess and reduce infections. Marc P. Volavka, Executive Director of the Pennsylvania Healthcare Cost Containment Council, said the network is being designed without addressing a significant obstacle to gathering reliable data: subjectivity.

Mr.Volavka maintained that the CDC would better serve the healthcare industry by helping bring order out of the chaos that has arisen as different clinicians apply different standards in judging whether an infection is hospital-acquired.

"The biggest problem is the ability to uniformly identify infections, not the collection of data itself," Mr. Volavka said in an interview following the conference.

When is it healthcare-associated?

Although the CDC has provided definitions for determining when an infection is healthcare-associated and has collected infection data for three decades, its definitions aren't precise enough, Volavka maintained.

That's why, despite increased reporting of healthcare-acquired infections, controversy continues – in Pennsylvania and elsewhere – about their frequency and whether the industry is making significant headway in combating them.

Mr. Volavka's independent state agency, which collects infection data, has drawn sharp criticism from many clinicians and hospitals for using billing information to estimate a much higher-than-reported incidence of hospital acquired infections.

However, he said he thinks there has been too much fighting over different judgments about when an infection is hospital-acquired and too little emphasis on understanding what is causing the infections and on attacking the problem.

> ***The biggest problem is the ability to uniformly identify infections, not the collection of data itself.***
>
> ***—Marc P. Volavka***
> ***Pennsylvania Health Care Cost Containment Council***

During his presentation, Dr. Jernigan maintained that the planned capabilities of NHSN could help shed light on the factors behind certain infection outbreaks.

Dr. Jernigan said the new system will eventually capture more kinds of data than NNIS. In addition to infections, the system will capture data on patient safety incidents associated with medical devices, procedures and medications. The system also is expected to capture data for research and on certain kinds of incidents affecting the safety of healthcare workers.

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Dr. Shannon spreads work to Penn

my colleagues at AGH and PRHI," said Dr. Shannon. "The leadership at AGH had the courage to see the value in transparency and have begun to see the value in 'safety first.' To my colleagues at PRHI, I owe a great debt for providing me with new eyes to see the enormous opportunity to eliminate error and waste in the healthcare system and the tools to make it happen."

> *I see the move to Penn as helping to redefine the term 'regional' in PRHI. The message and the methods should be heard across the state and throughout the nation.*
>
> *—Richard Shannon, MD*

Infection reduction in two ICUs: a summary

Under Dr. Shannon's guidance at AGH, PPC principles were applied in two intensive care units to reduce variation in practice and infection rates within the first 90 days. For FY 2004-05, the rate of central line-associated bloodstream infections dropped from 49 to 6, and ventilator-associated pneumonias dropped from 49 to 8. An article by Dr. Shannon in the September 2006 edition of Joint Commission Journal on Quality and Patient Safety will describe the efforts to eliminate central line-associated bloodstream infections. The work will also feature prominently in the upcoming four-part PBS documentary special, *Remaking American Medicine*, which will air in October (see announcement, page 7).

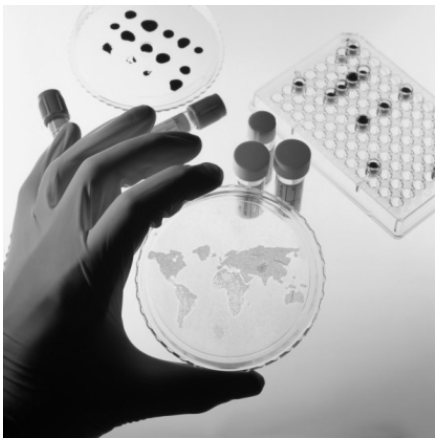
The business case for quality gains ground

Once the PPC principles were applied in two intensive care units, resulting in markedly reduced infection rates, a team under Dr. Shannon's direction then painstakingly went through complicated hospital documentation and billing for each patient who had contracted an infection. What they discovered turned conventional wisdom upside down: despite increased payments for the complication of a central line infection or ventilator-associated pneumonia, the hospital did better financially by preventing them.

"With a central-line infection, we lose money. If there is no infection, we make money. How much, depends on the DRG," said Dr. Shannon. "A hospital CFO looking at this sees that infections are making people worse, not better. Plus, the hospital is losing money. That's a compelling case for trying to prevent the infections."

Continuing the work

Work continues to eliminate variation in practice and educate staff on the principles of PPC; spread improvement to two other devastating infections, ventilator-associated pneumonia and the antibiotic-resistant MRSA; and document the cost savings.



Dr. Jerome Granato, recipient of a JHF Physician Champion award, will continue focus on educational issues (see his profile in January 2006 *PRHI Executive Summary*, available online at www.prhi.org/publications.) With his guidance, AGH created training in central line insertion and maintenance for doctors and nurses. In a lab with mannequins, physicians receive hands-on training in line insertion. The training is mandatory for all residents and new-hires, and recertification is required yearly.

"Dr. Granato's involvement as a Physician Champion has spawned new interest in other faculty about getting trained," said Dr. Shannon.

Spreading the work on healthcare-acquired infections will pass to Dr. Andrew Sahud, MD, a specialist in infectious disease, and Internist Scott Vargo, MD.

Staying in touch

Dr. Shannon sees this move as a new beginning, and as a way to spread the work of PRHI.

"I see the move to Penn as helping to redefine the term 'regional' in PRHI," he said. "The message and the methods should be heard across the state and throughout the nation. I look forward to continuing our partnership, sharing what I learn here with my colleagues at Penn and, in turn, learning from them how to carry the effort forward even more effectively."

From Page One

Revisiting a bold community vision

A little history

But few organizations—if any—were even thinking about the kind of vision we—as a community—set out to pursue when PRHI began.

For the benefit of those who may not know much about PRHI, let's look at how it started: PRHI was born as a community-wide coalition of healthcare stakeholders nearly a decade ago out of the belief that our region could and should set a standard for the nation in improving the safety and quality of healthcare.

At the time, few people realized that medical errors result in 100,000 hospital deaths each year and that infections contracted because of hospital stays are responsible for 100,000 more. Moreover, even a couple of years after PRHI began and the Institute of Medicine reported this appalling fact, almost no one in healthcare thought that these errors could be eliminated—no matter how hard we might try.

That made the very idea of our experiment extraordinary--in its foresight, its audacity and, to an extent, in its naiveté—because we said otherwise.

But, PRHI has been like "The Little Engine that Could."

After gaining support from all of the region's healthcare stakeholders to pursue this vision, we embarked on some ambitious undertakings. Notable among them, PRHI rallied infection control experts from Southwestern Pennsylvania into a demonstration that remains the largest of its kind in the nation; we helped more than 30 of the region's hospitals reduce the incidence of a lethal, hospital-acquired bloodstream infection by 68 percent. The results, audited by the Centers for Disease Control and Prevention, were reported in the *Journal of the American Medical Association* earlier this year.

Affirming basic truths

Our experiment may not have reached zero infections, but it did yield some essential truths—a couple of which are only now gaining acceptance nationally in healthcare.

First, we affirmed that striving for zero medical errors or zero hospital-acquired infections is the only tenable goal. Any outside benchmark or arbitrary target would not have pushed our experiment nearly as far as it went; nor would there likely have been any hospitals that actually achieved zero if we hadn't aimed for it. And, indeed we can point to at least one—Allegheny General Hospital—that got close to zero, sustained and spread its momentum to other clinical units and to other kinds of infection. This fulfills our whole reason for being, which is spreading quality.

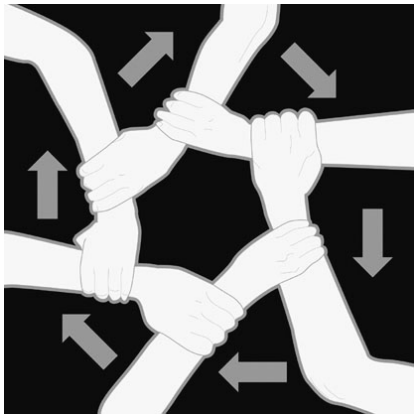
We also began affirming the premise that originally inspired us: that quality is the most enduring cost containment strategy for health care. PRHI continues to support work demonstrating that there is an incredibly strong "business case" for pursuing quality. Our work with Dr. Rick Shannon at Allegheny General, which has become almost legendary in healthcare and health policy circles, determined that the single hospital acquired bloodstream infection that was the subject of our first demonstration adds upwards of $14,000 to the cost of care for a single patient—nearly $1 million annually at AGH, where we helped analyze the financial impact.

And, finally, we learned that to achieve quality, there needs to be passionate clinical leadership and appropriate tools.

Engineering the tools

About six years ago, we introduced the tools. We developed a quality engineering curriculum based on the Toyota Production System.

Former U.S. Treasury Secretary Paul O'Neill, co-founder of PRHI, made ALCOA a world showcase for the power of these disciplines during his tenure as CEO of the world's largest aluminum maker; he transformed a century old manufacturing enterprise into the safest and one of the most



efficient companies in the world. No easy feat when you consider the nature of Alcoa's work.

PRHI's adaptation of the Toyota methods is known as Perfecting Patient Care™. We teach this methodology in a four-day program known as PPC University and in a shorter version known as PPC 101. In a nutshell, PPC teaches clinicians to identify and analyze errors in real time, at the point of care, and to rapidly adopt countermeasures to ensure that the same errors don't happen again. As error-free processes are adopted and standardized, care is perfected.

The concepts behind quality engineering and systems thinking were utterly alien to healthcare when PRHI launched Perfecting Patient Care™. Initially, our ideas about taking tools used in factories into

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Revisiting a bold community vision

hospital corridors seemed to many a fool's errand.

Progress enhances regional reputation

I'd be misleading you to suggest that these principles have been wholeheartedly embraced, much less widely employed in health care. But, I'd be shortchanging PRHI's influence and accomplishment if I didn't also point to real progress. Not only has PRHI been tapped to help a number of kindred coalitions find their footing in other regions, talk of safety, quality and the same systems principles that were used to reengineer manufacturing are now a large part of the national conversation in healthcare. Healthcare institutions are putting them to use in varying degrees.

One measure of the progress that might surprise many of you is that our PPC University now draws clinicians from across the country and we're even sometimes asked to take this show on the road for healthcare institutions that want to train more people than they are able to send here. In the calculus of our region's economy, this training has become a Pittsburgh export.

Just last week, the University fielded students from Michigan, Upstate New York and the West Coast and just last month, we sent our coaches to Fargo North Dakota to offer a University to the Merit Care Health System. We also have taken our team of coaches to Michigan's Henry Ford Health System and had an entire team of their clinicians come here.

All of this has served to sustain our region's reputation as a national leader in the field of patient safety and healthcare quality. It also is a testament to the value and utility of PRHI's methods.

Also in the news

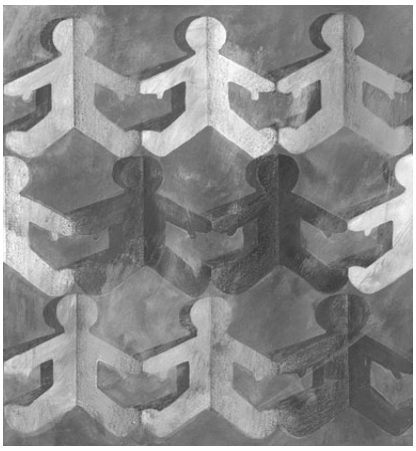
In addition to two national PBS documentaries, prominent mention is made of PRHI and the Toyota-based Perfecting Patient Care ™System in the following:

- *Mason, Clare Crawford et al. The Nun and the Bureaucrat: How They Found an Unlikely Cure for America's Sick Hospitals (companion book to "Good News" documentary. See box, opposite page.*
- *Landro, Laura, Hospitals Move to Cut Dangerous Lab Errors: Improved Specimen Collection And Efficiency Help Increase Accuracy of Medical Testing , "The Informed Patient," Wall Street Journal. June 14, 2006*
- *Shannon, Richard, et al. Eliminating Central Line Infections in Two Intensive Care Units: Results of Real-time Investigation of Individual Problems, Joint Commission Journal on Quality and Patient Safety, scheduled September 2006*

Recruiting reformers

In our current configuration, we also have begun identifying and supporting passionate clinical leaders who want to use these tools to repair a troubled system and dramatically improve care.

The PPC University and these clinical leaders are the backbone of



the work PRHI is doing today.

With grants from the Jewish Healthcare Foundation (JHF), eight physician leaders, who we call Physician Champions, are demonstrating the value of quality engineering not just in infection control, but in pathology, cardiac care, and care for chronic illnesses such as diabetes.

Making patients safer

Our Cardiac Registry has become one of the nation's largest regional repositories of information to help improve open heart surgery; it contains data from more than 10,000 cases that clinicians from 10 institutions across the region are benchmarking to improve care. And some of you may have seen a story in the *Wall Street Journal* last month about our work supporting a UPMC Health System project to reduce pathology errors. That project is part of a groundbreaking national collaboration among nine major medical centers, including Michigan's Henry Ford Health System.

To support these clinical Champions, PRHI last year restructured its operations to include a Learning Center, which continues developing our Perfecting Patient Care™ Curriculum, running our University and offering customized classes.

We also created an Applications Center, which provides our clinical partners with help designing PPC demonstrations and with on-site support in executing them. In addition, we established an Analytics Center, which helps evaluate their results and is currently supporting nine hospitals across the state in analyzing the financial impact of 11 infection control projects.

JHF also has funded a Nurse Navigators program and a program for Nurse Managers and other clinical leaders to implement PRHI's PPC tools. And, importantly, JHF funds Patient Safety Fellowships so that we can help tomorrow's clinical leaders understand the principles of Perfecting Patient Care™ before they embark on health-related careers.

For the first time, we also have expanded into long-term care, a part of the continuum of care that cries out for tools, not just to improve quality, but also to address one of the most serious problems nursing homes confront: employee turnover.

Stopping worker exodus

We've found that quality engineering helps clinicians break out of the functional silos that make healthcare chaotic, inefficient and prone to errors.

By doing so, it attacks systemic problems and changes the work culture and the working environment in ways that contribute to employee satisfaction and retention.

Turnover is not only a huge problem in long-term care but a growing one in the rest of healthcare, which is facing an exodus of employees as the baby boom generation retires.

While I'm on the subject of long-term care, I should tell you that our current engagement in that area is another truly novel experiment: our own coaching staff is using a nearby nursing home, the Charles Morris Nursing and Rehabilitation Center, as a learning lab. The director of our Applications Center, Peter Perreiah – who helped implement Toyota principles at Alcoa—coaches our own coaching staff in hands-on projects aimed at improving the quality of care for residents there.

As it has been from the start, our aspiration in long-term care is to create replicable models for improvement.

Good News: How Hospitals Heal Themselves, which aired on July 27, 2006 didn't capture that work or any of PRHI's newer projects. But it did capture the essence of a mission that remains the same as when the film was made. As it was then, PRHI still is all about spreading quality.

Note: *These remarks were prepared for a pre-screening of the documentary, "**Good News: How Hospitals Heal Themselves**," which aired on WQED, Pittsburgh's PBS affiliate July 27th and July 29th.*

*A second documentary, also prominently featuring the work of PRHI, will air on PBS nationally in October. That four-part series is entitled "**Remaking American Medicine**™." See announcement, above.*

Over four nights in October, PBS stations nationally will air a four-part series, *Remaking American Medicine™…Health Care for the 21st Century*. Each of these one-hour programs describes how communities across the country are grappling with the dilemmas inherent to America's health care system. Not surprisingly, Pittsburgh is the setting for one of the programs.

In "First Do No Harm," the second program in the series, viewers will see how health care providers are determined to overcome a major health care challenge – hospital-acquired infections, which exact a terrible toll on patients. Featured in the documentary are Dr. Robert Muder of the VA Pittsburgh Healthcare System, and Dr. Richard Shannon of Allegheny General Hospital. The film highlights PRHI's role as community resource in the fight against these devastating infections.

"First Do No Harm" is scheduled to air on PBS at 10 p.m. on Thursday, October 12th. Check local listings. More information at **http://www.ramcampaign.org.**

To order a copy of ***"Good News: How Hospitals Heal Themselves,"*** go to:

www. managementwisdom.com

Additional resources include:

- Companion book, "The Nun and the Bureaucrat"
- Free discussion guide

Pittsburgh Regional Healthcare Initiative
650 Smithfield Street, Suite 2400
Pittsburgh, PA 15222
Phone: 412-586-6700
Fax: 412-586-6701
www.prhi.org
Email: info@prhi.org

Calendar, Fall 2006

Day	Date	Time	Event	Place	Contact	CMEs offered?	Register?
Thurs	Aug 17	2:30-5:30p	Regional Forum: *What is our Region's Healthcare IT Strategy?*	Duquesne Room Duquesne University	Tania Lyon, 412 586-6710 tlyon@prhi.org	No	Yes
Mon-Thurs	Sept 11-12/25-26 Nov 13-16	8a-5p	Perfecting Patient Care™ University	Sept 11-12 Hospital Council of Western PA Sept 25-26 UPMC Shadyside TBD	Barbe Jennion, 412-586-6711 *bjennion@prhi.org*	Yes	Yes
Tues	Sept 19	5-8p	Chronic Care Forum "Creating a Community Model For Diabetes Care"	Rodef Shalom Congregation	Tania Lyon, 412 586-6710 tlyon@prhi.org	Yes	Yes
Sat	Sept 30	9:00-noon	Cardiac Care Forum with Special Guest, Nancy Nussemeier, MD	Rivers Club 301 Grant St. Pittsburgh, PA 15219	Karyl Troup-Leasure 412-586-6716 ktroup@prhi.org	Yes	Online at prhi.org

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Please direct newsletter inquiries to: Pamela Gaynor, Director of Communications and External Relations
412-594-2581, pgaynor@prhi.org
Contributing writer/editor, Naida Grunden