November/December 2005

PRHI Executive Summary

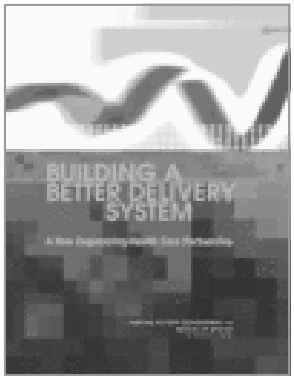
Pittsburgh Regional Healthcare Initiative

New report, regulations feature familiar approaches to patient safety

New state regulations and an IOM report highlight approaches to patient safety advocated by PRHI and others. Pennsylvania regulations emphasize reporting and remedying patient safety exceptions. And a new report by the Institute of Medicine (IOM) highlights the connection between engineering techniques and healthcare improvement—along the lines of the Toyota Production System and its healthcare adaptation, Perfecting Patient Care.

New IOM Report

The IOM has released a joint report with the National Academy of Engineering entitled, "Building a Better Delivery System: A New Engineering/Health Care Partnership." Earlier IOM Reports, "To Err is Human" and "Crossing the Quality Chasm" sparked national debate about medical errors and the gap between what we know to be good care and what we deliver.



This report represents a growing awareness of how systems thinking and engineering processes can help manage the complexities of health care delivery. It "describes opportunities and challenges to using system engineering, information technologies, and other tools to advance a 21st century system capable of delivering safe, effective, timely, patient-centered, efficient, equitable health care."

The report highlights three promising national process improvement resources available to health care:

- **The Institute for Health Improvement** (IHI) initiative called Idealized Design of Clinical Office Practices (IDCOP). This work focuses on four aspects of care delivery: access, interactions, reliability and vitality. Ideal patient encounters are the goal
- **Baldrige National Quality Award**, designed to promote excellence in American organizations to keep them competitive. The Baldrige criteria, usually applied to manufacturing and technical ventures, have recently been applied to healthcare institutions with promising results. Because the process of applying for the award requires total commitment from all levels of staff, major improvements often result whether or not award status is achieved.
- **The Toyota Production System** is viewed as a logical way to implement system improvements. Examples from Southwestern Pennsylvania abound in the text. PRHI partners have used and disseminated this information throughout the region and the country.

W. Dale Compton, first author of the new report and Co-Chair, IOM Committee on Engineering and the Healthcare System and Distinguished Professor Emeritus of Industrial Engineering, Purdue University, will hold a conversation with members of PRHI's Leadership Obligation Group in December.

New PA regulations

In October, the Pennsylvania Department of Health (DOH) released a set of

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Inside

Crowded Emergency Rooms

"Extreme Team" eliminates Code Red at Forbes

Have you ever faced a situation so complex and tangled that it seems like it can never be solved? Hospitals, by nature large and complex organizations, all face complicated, inter-connected problems that seem to defy efforts to improve them. And yet, as the staff at West Penn Allegheny Hospital's Forbes Campus has shown how one such situation can be brought under control, and rather quickly.

The first step is to map out the so-called "current condition," making an unvarnished assessment of a situation that currently exists. In July 2005, the current condition at the Emergency Room (ER) at West Penn Allegheny Hospital's Forbes Campus was typical of many American hospitals—that is, less than ideal.

Removing Silos

Quick, daily bed meetings build cross-functional teams. The reaction moves from "It's not my problem," to "How can I help?" These are "our" patients, not "ER" patients.

- Ambulances were being diverted from the ER about 60 hours a month, meaning that up to 200 patients were being taken to other hospitals because of a lack of available beds. The diversion status, called Code Red, means longer ambulance rides for patients, and up to $3 million in lost revenue for the hospital.
- Once in the ER, patients might have to wait hours for to be seen, or hours to be formally admitted and transferred to a room in an appropriate unit. While "boarding" in the ER, these patients may not have received optimal care for their conditions, since emergency medicine is a separate clinical discipline from inpatient care.
- Patient satisfaction scores for the ER experience were disappointing, although staff members perceived that they were working harder than ever.

Forbes was not alone. Hospitals across the country report that crowded emergency rooms are necessitating more diversions. The reasons include both supply—fewer available, staffed beds—and demand—more people seeking treatment in the nation's ERs*. Some hospitals are adding ER beds, but others are looking at the bigger picture for answers. Larger gains, they believe, can be made by looking at the way patients flow through the entire hospital—finding and using all beds, for example, and streamlining appropriate discharges.

At Forbes, all of these approaches are going on simultaneously: as the ER is remodeled and expanded, from the current 16 beds to 25, the entire hospital staff is looking for ever more creative ways to use every bed they have.

Extreme Team

"The first thing we came to understand was that this was not an ED problem, but a hospital problem" says Darlette Tice, [title] who has studied Toyota-based system improvements. "These aren't ED patients, they're everyone's patients. It's a very complex problem, and we need everyone's brain to help untangle it and make it better for patients."

The untangling began in June when staff members across the hospital were invited to become self-appointed members of the "Extreme Team," designing an extreme makeover for the ER. For one week, a room paneled with white poster boards became the brainstorming zone. Any person on the hospital staff who had an idea and wrote it on a poster board received a free piece of pizza. Hundreds of ideas began to accumulate—varied, innovative, unusual but most of all, feasible.

Even more important, staff members who actually tried a new idea received an Extreme Team t-shirt.

"We still have some ideas from those poster boards to try," said Tice, "but try them we will. It's inspired us to make a lot of rapid-cycle improvements."

Team members began to observe work in various areas of the hospital to develop a frank understanding of the current condition. They observed for 12 hours on each floor, with an eye toward streamlining communications (bed locations and status, movement of patients from unit to unit) and processes (quicker admissions and discharges). They looked respectfully at processes as a way to learn—the observations involved no blame.

They began to uncover system

* Linda R. Brewster, Liza Rudell, Cara S. Lesser, Emergency Room Diversions: A Symptom of Hospitals Under Stress. Issue Brief No. 38, Center for Studying Health System Change, May 2001

problems and ask:

- Where are the beds? How can we communicate quickly that a discharge has occurred?
- How can we make the discharge faster while giving more complete information to each patient?
- Processing a new patient on the floor takes a nurse an hour. Is there any way to make this process more efficient?

Rapid-cycle improvements

The observations and posted ideas formed the basis for rapid-cycle improvements. Said Angela Henzler, RN, Director, Emergency Services and Team Leader, "We became one big team. If a patient was on a gurney in the ER hallway, we immediately formed a huddle, redesigned the process, perhaps tried one of the new ideas, but solved the problem on the spot. The benefits were great for patients, but also for staff. We developed trust and now we work so well together—all in the interests of the patient."

Twice a day, for 10 or 15 minutes, Extreme Team members—staffing specialists, a representative from each unit, bed allocators, housekeepers and others—convene for a "bed meeting." Together they quickly discuss how many beds are available on each unit, how many of those beds are staffed, whether a charge nurse is on duty, how many patients are currently on the unit, how many beds are open, how many discharge orders are pending, and how many additional discharges are possible. Other considerations include how many new patients have just been moved to the unit, and how many are due to transfer. By offering everyone a snapshot of the entire hospital, along with an idea of where the bottlenecks are likely to develop, the bed meetings replace suspicion and competition among units with camaraderie. By eliminating silos, reaction moves from, "It's not my problem," to, "How can I help?"

The meetings also uncover other problems. For example, one unit was out of orange armbands for patients at risk for falling. They devised an experiment to first get armbands immediately where needed, and then figure out how to redesign the system to keep from running out again.

Moving patients from one unit to another, and bringing a new patient up from the ED are time-consuming processes for unit nurses. The patients must be assessed and information gathered and put into the computer. The bed meeting is one way to try to coordinate these movements so that no single unit is overwhelmed.

Staff experimented with other ways to avoid overwhelming units with new admissions. They standardized a checklist to produce a defect-free admission. Then, by reallocating time, one nurse was freed up to become the "Admissions Nurse," using the checklist to perform the initial assessment and computer entry while the patient is still in the ED. The Admissions Nurse reduces the initial work load for the unit nurse and improves the quality of information and efficiency of the hand-off. With a checklist accompanying each patient, each step is sure to be completed.

Just in case: contingency plans

Should there be a surge in ER admissions in the next several hours, what is the contingency plan? This question is among those routinely considered at the bed meetings. Staffing specialists have a chance to discuss who is on call and how such an eventuality could be handled. Before these meetings, plans were too often made under duress during a crisis. Continually anticipating surges in the work load gives the teams an opportunity for buffer options—just in case.

"Every day has its own dynamics," says Henzler. "We are finding new ways every day to share intelligence and improve teamwork."

The results

Since July, no Code Reds have been declared at Forbes. In fact, the number of ER visits increased by over 1000 between July and October as compared to budgeted visits. With its Extreme Team "makeover," Forbes' 16-bed ER has provided over 40,000 visits in the past year—a number more typical of a big-city hospital with many more ER beds.

Results

- *No Code Reds*
- *1000 more visits between July-October*
- *40,000 ER visits in 16-bed unit in 2005—comparable to a big-city hospital*

Press-Ganey scores of patient satisfaction have also improved on every shift, for every employee group. The chart below shows the gains for physicians—a gain that still does not satisfy Adrian D'Amico, MD, who heads the ER.

"We won't be satisfied until our scores exceed 95%," said Dr. D'Amico, "and then we'll keep improving."

Three years in: reducing healthcare-acquired infections

AGH units sustain major infection reduction

In a now-venerable tradition, all staff members from Allegheny General Hospital's Medical Intensive Care Unit (MICU) and Cardiac Care Unit (CCU) staffers invited to a take-out luncheon hosted by Dr. Rick Shannon, Chairman of the Department of Medicine. These lunches are held from time to time to share news of improvements and new challenges in the quest to lower healthcare-acquired infection rates in the MICU and CCU.

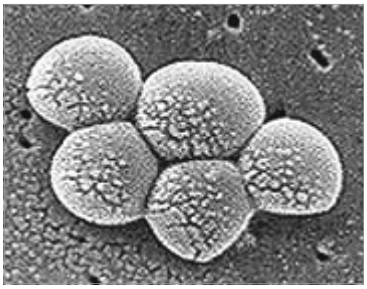
Dr. Shannon described progress and problems the units are encountering as they move toward eliminating (1) central line-associated bloodstream infections (CLABs); (2) ventilator-associated pneumonia (VAP); and (3) methicillin-resistant *Staphylococcus aureus* (MRSA].

Dollars and Sense

Reducing three types of infections in two intensive care units saved lives. It has also saved AGH about $2.2 million since 2003. Some of that is being reinvested to further accelerate the work.

Downward trend continues in CLABs

Dr. Shannon congratulated workers in both units on the significant, sustained drop in the number of CLABs. With three years of data now, the risk of contracting this type of infection has gone from approximately 1 in 20 to 1 in 200. Furthermore, the type of infection is less virulent than in prior years, leading to a greater than 90% reduction in fatalities. The fact that the rate rose slightly in 2005 afforded an opportunity to find out why. The team of healthcare professionals—scientists all—discovered a crucial fact behind the number. The number of percutaneously inserted central catheters (PICC lines) had more than doubled. A further examination revealed that staff did not always have the equipment they needed to insert PICC lines perfectly on every patient every time. New machinery is on order that will greatly ease the insertion of these lines, reducing the potential for infection.



MRSA transmission: ***a closer look at process improvement.***

Another enhancement this year has been a simulator and the development of a training module for the insertion and care of central lines. This training, insists Dr. Shannon, will soon be as routine for healthcare workers as CPR training.

VAP makes the radar screen

The MICU and CCU staffs do not accept VAP—or any other hospital-acquired infection—as an inevitable part of complicated care. Simple procedures like elevating the patient's head by 30 degrees, maintaining excellent oral hygiene, and placing bags and tubes in a standardized way really cut down the incidence. Over the past year, staff members have worked to standardize care without creating extra work, and to look at ways to efficiently wean patients off ventilators. The number of VAPs has plummeted 80% in the past year. In the coming year, the addition of respiratory therapists to staff will help wean more people from ventilators, further reducing their risk of infection.

MRSA: Where patient safety and worker safety intersect

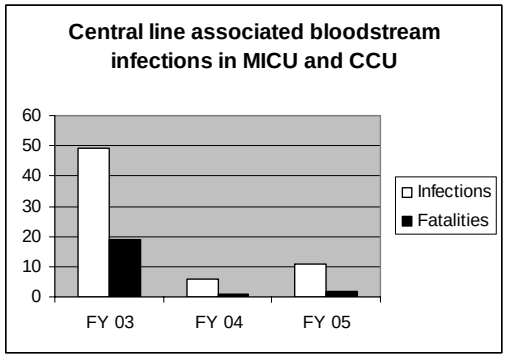
While the healthcare worker is not likely to contract a CLAB or a VAP, the story is different with MRSA. The most common way for MRSA to spread is on the hands of healthcare workers, who themselves are at risk of becoming "colonized," or carrying the organism in their bodies.

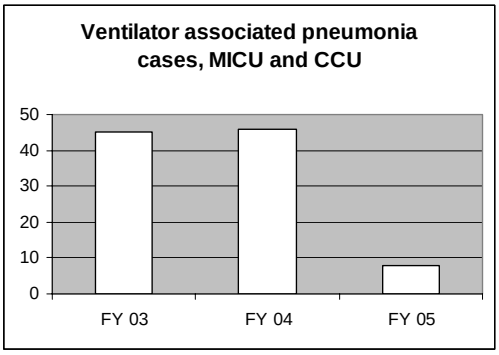
Since February 2005, the goal on the MICU and CCU has been to screen 100% of patients on admission and discharge: on admission, to see whether they unsuspectingly harbor MRSA and need to be isolated; and on discharge, to see if they have been colonized with MRSA during their hospital stay. Currently over 95% of the patients admitted to the MICU and CCU have been screened on admission, and the lab results have revealed that 8% to 10% of incoming patients are colonized and do not know it. Screenings have now also begun in the Trauma ICU, and already nearly 90% of incoming patients are being screened.

MRSA is resistant to all but one kind of antibiotic. Among inpatients, MRSA has a high mortality rate and is very expensive to treat. Caregivers need to know which patients are colonized or infected with MRSA, so that they can use appropriate level of barrier precautions in treating them, to prevent spreading it. As many as a quarter of colonized patients will go on to sustain an infection. For people heading in for surgery, knowing their MRSA status allows them to be treated first, reducing the chance of a virulent post-surgical infection.

Over 80% of patients have been screened on discharge, and those results are encouraging. Patients currently have a less than 1% chance of being colonized during their hospital stay. Still the staff strives toward zero colonizations.

Taking a cue from the VA, which has all but shut down MRSA transmission where it is using the Toyota-based Perfecting Patient Care System, all three ICUs at Allegheny General are now aiming to eliminate MRSA. The first step is 100% admission and discharge screening.





Healthcare-acquired infections show precipitous decline following the introduction of Toyota-based process improvements. Staff learned lessons from a slight upswing in central line infections in early FY05: rates declined even further during the last half of the year.

Other steps include making sure that people have the information and supplies they need to use appropriate precautions with every patient encounter.

"It's different than a central line infection, where you can run to the bedside the moment a positive culture comes back, and try to figure out what happened," says Dr. Shannon. "MRSA is a systems issue. It passes from institution to institution and person to person. Once we identify who has it, we can take steps to stop the transmission."

The bottom line

New machinery to make PICC line insertion safer; more respiratory therapists; lab tests for every patient on the units... making the case for these kinds of investments in an era of scarce hospital resources may seem daunting. However, Dr. Shannon and his crew have been counting the dollars saved by preventing CLABs, VAPs and MRSA infections. They now know that reducing those infections in the MICU and CCU have resulted in approximately $2.2 million in savings over two years. Reinvesting part of those savings to promote further infection reduction makes sense from both medical and business points of view.

In fact, says Dr. Shannon, "The elimination of hospital-acquired infections is multi-million dollar proposition for the healthcare industry. It's just one more example that doing the right thing for patients equals doing the right thing."

What are patients hearing about safety?

It can be informative to examine what the general public—patients—are seeing in the media about patient safety. Here is a transcript of a recent report on the program, "ABC 20/20."

Oct. 14, 2005 — There's a deadly threat hiding inside America's hospitals. What's even scarier, your hospital is probably keeping it a secret.

Maureen Daly's mother was a healthy 63-year-old woman when she had surgery to fix a broken shoulder. However, after being admitted to the hospital, Daly's mother got an infection that left her immobilized on a respirator. Daly was told that life-threatening germs are an inevitable fact of hospital life.

Daly was shocked. "I cannot accept that it would be a fact of life that you can walk into a hospital with a broken shoulder and leave practically dead," she said.

Her mother died four months later. It turns out hospital infections are the fourth-leading cause of death in the United States.

Betsy McCaughey, former lieutenant governor of New York and founder of the Committee to Reduce Infection Deaths, said, "These infections kill as many people each year in our country as AIDS, breast cancer and auto accidents combined."

McCaughey said it's secrecy that's allowed the problem to grow. "Most states have not required hospitals to report their infections, or provide that information to the public," she said.

Pennsylvania is one of only six states that has passed a law requiring the reporting of infections. Experts say public disclosure forces hospitals to reduce infection rates. Dr. Rick Shannon, chief of medicine at Allegheny General Hospital in Pittsburgh, looked at the data on patients in the hospital's intensive care units. He was stunned.

"Fifty-one percent of everyone who got these infections died. Half the people who got one died," he said. Dr. Shannon wasted no time. He gave an order to the ICU staff: reduce hospital infections to zero — in just 90 days.

Staff nurses didn't think it could be done.

But after just one week, the ICU staff identified the culprit. It wasn't a superbug — it was the staff. And the fact they each had their own way of washing hands, changing dressings, and putting in catheters. "No one actually knew what the right way to do it was. And not knowing what the right way to do it was that all these little errors could creep in that would lead to infection," Dr. Shannon said.


Photo: ABC News

Dr. Shannon and his team quickly found solutions, like putting in more hand-sanitizers and raising the head of the bed 30 degrees to prevent pneumonia. The results were unbelievable.

"Ninety days later, we went from 49 infections to zero," he said.

And the results a year later are equally impressive. Only one patient in the ICU has died from an infection.

McCaughey says it's important for the public to know about infection rates at hospitals. "The public has a right to this information. If you are going into the hospital, you should be able to find out which hospital in your area has a serious infection problem, so you can stay away from that hospital," she said. Her advocacy group is working to pass more state laws — like Pennsylvania's — requiring hospitals to release this data.

And McCaughey says there's a simple thing you can do to keep yourself safe from dangerous germs in any hospital.

"Ask doctors and nurses to clean their hands before touching you. If you are worried about being too aggressive, just remember, your life is at stake," she said.

Operational Excellence and Diabetes Care

Excellence in Chronic Care Regional Forums

If PRHI's first regional forum at UPMC St. Margaret was any barometer, local clinicians are eager to improve the way chronic care is delivered in Southwestern Pennsylvania. The forum focused on operational excellence and diabetes care. More than 60 registrants exceeded attendance forecasts and available space. In the audience were primary care physicians, practice managers, nurses, physician assistants, and staff members from ambulatory care organizations. The positive reviews tell us that the March 2006 Chronic Care Forum on "Navigating the Electronic Medical Record" will require a larger space.

The objectives of these Chronic Care Forums are:

- To identify and showcase regional success stories in the delivery of care to chronically ill patients;
- To operate as a learning platform for spreading the methods of achieving these successes;
- To increase the delivery of consistent and reliable care for chronically ill patients by giving primary care providers proven tools for changing work processes, work organization, and work culture to align with the Chronic Care Model and evidence-based care.

September Forum

Keynote speaker for the September Forum, Joel Ettinger, is a healthcare examiner for the Malcolm Baldrige National Quality Award. Ettinger discussed how the criteria can assist physician practices in improving the way they run their offices and provide care. He outlined the challenge: *to understand the delivery of care as well as we understand the biology of care.* The Baldrige National Quality Award, originally aimed at manufacturing and service industries, has begun honoring health care institutions—and not just large ones. One Baldrige awardee had only 17 employees. Many organizations use the award criteria as an internal guide to quality improvement without ever applying for official recognition. The criteria are available at http://www.quality.nist.gov/HealthCare_Criteria.htm.

Breakout sessions featured local success stories in diabetes care. Topics included working in chronic care collaboratives; funding diabetes educators; using Perfecting Patient Care techniques in a family health center; and shifting care from a doctor-centered to a team-centered approach.

March Forum

The next Excellence in Chronic Care Forum will discuss the hope and complexity inherent in the Electronic Medical Record (EMR). The March Forum will present the growing resources available to practices considering acquiring an EMR. We'll look at the giveaway VistA software from the Veteran's Administration, DOQ-IT from CMS, state legislation to provide matching grants to those trying to convert to electronic systems, PA eHealth and more.

For further information contact:

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From Page One

Regulations: familiar approach to patient safety

proposed revisions for consideration and discussion—the first major revisions since 1982. The changes include special emphasis on patient safety.

The proposed regulations call for each facility to submit an annual patient safety report that tallies and categorizes the year's incidents. The report would also include total medication errors, readmissions, complications, falls and healthcare-acquired infections, with comparisons in each category against the prior three years.

In an interview with *Physicians News Digest*, Barbara Holland, deputy general counsel for the Governor's Office of Health Care Reform said, "We are looking to make a paradigm shift in these regulations: creating a structure to help facilities identify and correct systemic problems, rather than DOH being the stick beating them over their head."*

DOH's new regulations explicitly include what PRHI has long called the "zero goal," that is, the goal of zero errors instead of incremental improvement. They also require hospitals to develop a way to approach that goal, identifying at least six safe practices for implementation, and supporting them with at least six hours of patient safety training for each clinician, officer and director. PRHI offers an array of Perfecting Patient Care classes and coaching opportunities that could help institutions answer these training needs.

Said Karen Wolk Feinstein, President of the Jewish Healthcare Foundation and Chair of the PRHI Board, "These regulations are an awakening that cost and quality begin at the point of care."

Pittsburgh Regional Healthcare Initiative

Cardiac Working Group presents

PRHI Cardiac Forum

Winter 2006

Keynote speaker:

Blase A. Carabello, MD

Valve Surgery:

Patient Selection and Long-term Outcomes

Dr. Carabello is Professor and Vice Chairman of Medicine, Baylor College of Medicine; Medical Care Line Executive, Michael E. DeBakey Veterans Affairs Medical Center, Houston, TX.

Program highlights:

- *Regional Cardiac Registry Report: what the data are telling us now*
  Karyl Troup-Leasure, PhD, PRHI Manager of Analytics
- *Collecting and using data to improve CABG patient outcomes: The Role of the Perfusionist*
  Wendy James, Certified Clinical Perfusionist
- *Using Data to Improve Clinical Practice and Care Processes*
  Peter Perreiah, MBA, PRHI Managing Director

When:	Saturday, January 7 Registration and continental breakfast, 8:30 am; Forum, 9-11 am
Where:	UPMC Shadyside, West Wing Auditorium 5230 Centre Avenue, Pittsburgh, PA 15232
Who:	Cardiothoracic surgeons, cardiologists, anesthesiologists, nurses, perfusionists, data analysts, and cardiac program administrators.
Cost:	No charge

Register online: www.prhi.org/cardiac2005_forum.cfm

This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint sponsorship of the Pennsylvania Medical Society and the Pittsburgh Regional Healthcare Initiative. The Pennsylvania Medical Society is accredited by the ACCME to sponsor continuing medical education for physicians.

The Pennsylvania Medical Society designates this continuing medical education activity for a maximum of 2.25 credits in Category I of the AMA Physicians Recognition Award, and the Pennsylvania Medical Society Member CME Certification. Each physician should claim only those hours of credit that he/she actually spent in the educational activity.

All faculty participating in continuing medical education programs sponsored by Pennsylvania Medical Society are expected to disclose to the audience whether they do or do not have any real or apparent conflict(s) of interest or other relationships related to the content of their presentation(s).

Pittsburgh Regional Healthcare Initiative

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Calendar, Winter 2006

Day	Date	Time	Event	Place	Contact	CMEs offered?	Register?
Thurs	Feb 9 April 6 June 15	8a-5p	PPC 101	PRHI Learning Center PRHI Offices Centre City Tower 24th floor 650 Smithfield Street	Barbe Jennion, 412-586-6711 *bjennion@prhi.org*	Yes	Yes
Mon-Tue,	Jan 9 -10; 23-24 (2 sessions)	8a-5p	Perfecting Patient Care™ University	Jewish Association for Aging; Squirrel Hill			
Sat	Jan 7	8:30-11am	Winter Cardiac Forum, featuring Blase Carabello, MD	UPMC Shadyside 5230 Centre Avenue	Karyl Troup-Leasure, Ph.D., 412-586-6716 *ktroup@prhi.org*	Yes	Yes