PRHI Executive Summary

Second quarter data confirm

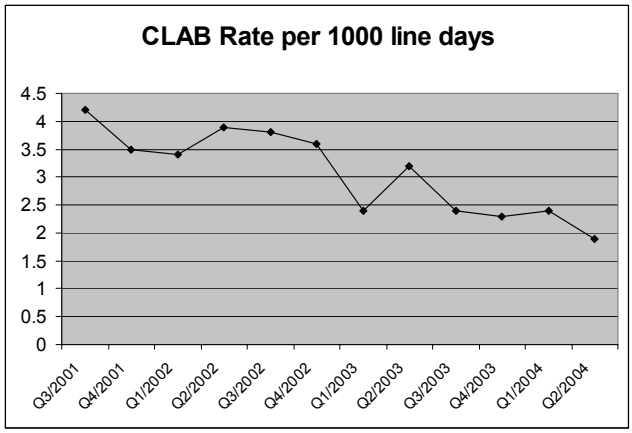
Central line infections continue to decline

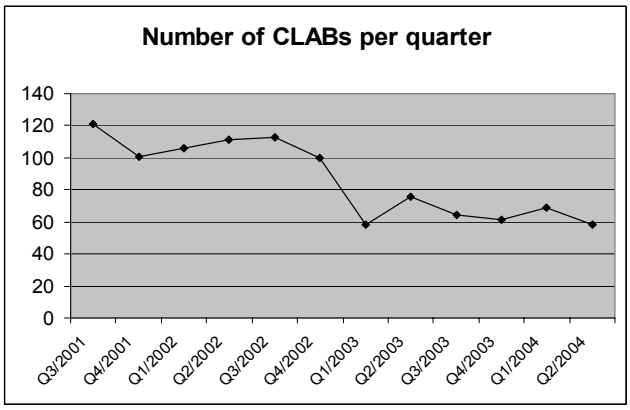
"The Pittsburgh consortium has posted a 55% region-wide reduction in the number of central line-associated bloodstream infections, a very significant regional decline," said John Jernigan, MD, Medical Epidemiologist, Centers for Disease Control and Prevention. "These data challenge us to consider what may be possible in the area of infection control."

Quarter/ Year	# CLABs	# of Hospitals Submitting	Rate per 1000 line days
Q3/2001	121	27	4.2
Q4/2001	101	28	3.5
Q1/2002	106	27	3.4
Q2/2002	111	27	3.9
Q3/2002	113	27	3.8
Q4/2002	100	25	3.6
Q1/2003	58	23	2.4
Q2/2003	76	24	3.2
Q3/2003	64	23	2.4
Q4/2003	61	26	2.3
Q1/2004	69	28	2.4
Q2/2004	58	29	1.9

Beginning two years ago, infection control practitioners and others met with PRHI as the convener and began sharing information about how to reduce central line-associated bloodstream infections, or CLABs. The group established regional guidelines and recommended that hospitals invest in kits that contain exactly what a practitioner needs to insert a line. While the guidelines and the kits were tailored to each institution, the goal remained consistent: unit by unit, hospital by hospital, to achieve zero CLABs.

Recently a group of healthcare leaders, convening as part of PRHI's leadership obligation group, shared their individual stories about their notable reductions in CLABs. The very fact that leaders from competing healthcare organizations would share this information the purposes of regional learning and improvement, strikes practitioners in other regions of the country as remarkable. On the following pages are a few of their stories.





October 2004

Inside:

From page one

Central line infections continue to decline

From LifeCare Hospitals of Pittsburgh, Clifton Orme, CEO; Sally Miller, RN, Nurse Manager (presenter)

LifeCare is a 155-bed, long-term acute care facility that manages medically complex patients. Their length of stay averages 25 days. These factors combine to make LifeCare's patients more susceptible to infection.

The fact that leaders from competing healthcare organizations would share this information for the purposes of regional learning and improvement, strikes practitioners in other regions of the country as remarkable.

What they did:

- Created core group of RNs to oversee all aspects of IV lines. They went to Allegheny General Hospital to learn about percutaneously inserted central catheters (PICC lines), thought to be less prone to become infected. They avoid femoral lines.
- Consistent use of chlorhexidine as disinfectant and transparent dressings changed frequently.
- Handwashing lapses are called out, not tolerated.
- Continual evaluation of whether the current catheter is the right one for that patient, or whether it could be changed to a line with a lower risk for infection. (Midline appears to have lowest rates: trying to eliminate femoral lines.)
- Every day the team asks the physician, "Can we remove this line?"
- With each new admission, they ask specifically when this line was was inserted, what type it is, etc. If there are questions, they change the line.
- Every infection diagnosis every day goes directly to the CEO. Every CLAB is immediately investigated in real time.

Results:

- In the past year, CLABs reduced 87% despite a 9.7% increase in the number of lines placed.
- Reduction gained momentum over time, going from 70 to 87% in the last 4 months.

Now working on:

- Studying better IV tubing.
- Observing and monitoring to ensure that current recommendations are understood and followed.
- They continue to look at the "little things," right size syringe, occluded or broken lines, etc. Little things represent big opportunities to stop a problem before it becomes a big problem.

From Monongahela Valley Hospital, Lou Panza, CEO; Kathy Liberatore, RN, Infection Control Practitioner (presenter)

The key to reducing infection lies in bringing in the nursing staff, because they have the day to day responsibility and get the job done. The importance of the nurses cannot be overstated. Monongahela Valley Hospital started out in 2002 with a rate less than NNIS, but thought they could do even better.

What they did:

- CLAB focus began in 1995. Infection control practitioners began observing each line placement. Full barriers and kits were required for practitioners. These practices are now well established in the hospital.
- The lab calls the moment a culture is positive; staff does immediate root cause analysis.
- They emphasize the consistent use of chlorhexidine, as well as impeccable catheter care. They avoid femoral lines.

Results:

- Since 2002, zero infections in MICU, one in CCU.
- Improved patient and employee safety, reduced cost

Now working on:

- Evaluating new coated catheters and new kits.

From UPMC Health System, Loren Roth,

MD, Sr. VP of Quality Care, Chief Medical Officer (presenting); Helen Chang, Vice President, Quality Care

UPMC has mounted a system wide effort. Helen Chang, Fran Solano and the UPMC Institute for Quality Improvement are approaching CLABs reduction across the whole system. The results are presented regularly to the Patient Care Quality Committee (QPCC) of the system Board. One example within the system is in the MICU at UPMC PUH, where Dr. Mike Donahoe has been in charge of an aggressive campaign that has led to several months with Zero CLABs .

What they did:

- ✧ Recently adopted a "zero tolerance" posture on hand washing compliance. Staff are permitted to query and stop other persons who do not wash their hands.
- ✧ Use of 5 barrier kits.
- ✧ Process measures of compliance are at about 90% system wide for FY 04.
- ✧ Under Dr. Donahoe medical residents may place lines only under supervision of a physician who has been trained in line placement at the WISER simulation center. Plans are under way during FY 05 to similarly train all residents who put in lines across the health care system.
- ✧ Publicizing CLABS as a system priority; creating a culture of expectation system wide.

Results:

- ✧ CLAB rate down to 1.2 system wide (FY 04).

From Allegheny General Hospital, Connie Cibrone, CEO; Frank DeLisi, Chief Operating Officer; Richard Shannon, MD, Chief of Medicine (presenting)

AGH's experience reinforces the need for nursing staff involvement every step of the way. Dr. Shannon shared information on the business case for elimination of CLABs, indicating that a large city hospital could save $10 million per year by preventing them.

What they did:

- ✧ Began in MICU and CCU last year (*chart below*).
- ✧ Implemented all guidelines from Infection Control Practitioners.
- ✧ Investigated each infection as soon as reported
- ✧ Implemented four specific measures:
  1. Preference for the subclavian site,
  2. Removal of all femoral lines within 24 hours,
  3. Prohibit rewiring of dysfunctional catheters,
  4. Remove all of catheters present on transfer from outlying facilities.
  5. (Being implemented.) Biopatch dressing for patients whose lines must be in for longer than 14 days.

Results:

- ✧ Zero CLABs within 90 days.
- ✧ Six CLABs reported within past year, a sustained 90% reduction with 95% reduction in mortality. Four of the CLABs were attributable to failure to follow a specific guideline.
- ✧ Past-year savings of $1.4 million just in direct costs.

Now working on:

- ✧ Business case for elimination of CLABs.

From VA Pittsburgh

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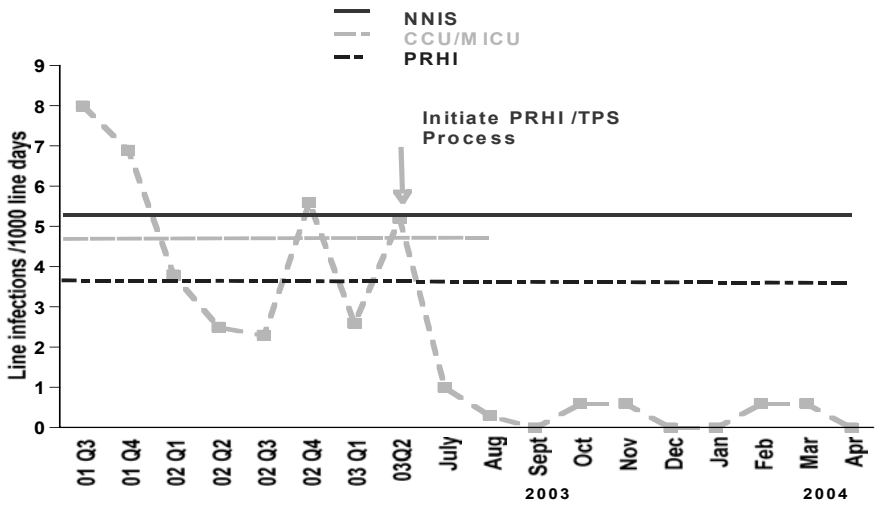

A hopeful example: Staff in two ICUs at Allegheny General watched as their efforts led them approach zero CLABs in 90 days. The near-zero rate has been sustained for a year. Midlines on the chart represent 'benchmarks' set by the CDC, the PRHI partnership, and the ICUs. Results like these and are challenging the region to reassess benchmarking and redefine 'what is possible.'

Preparing for the Cardiac Forum October 6

PRHI steps up regional focus on cardiac care

Clinton scare has US men rushing for heart checks

Middle-aged males respond to so-called celebrity effect

Sept 12, 2004, MILWAUKEE (Wisconsin) – Hospitals around the United States are seeing an epidemic of 'Clinton syndrome' as worried, middle-aged men take the former president's heart problems to heart and rush to get their own tickers checked . . .

When President Clinton checked in for coronary artery bypass graft (CABG) surgery last month, the prospect of heart disease "came home" for many Americans. CABG, one of medicine's most advanced and complicated procedures, has become almost commonplace. In Pennsylvania in 2002, it was performed about 16,500 times. CABG also accounts for the nation's largest expenditure in cardiovascular medicine.

Clinton's surgery prompted certain questions. Reporters seized upon public reports, which seemed to indicate that New York Presbyterian Hospital, where his surgery was performed, had slightly higher rates of complications and mortality following CABG surgery than other hospitals in the same cohort. But did this knowledge make Clinton safer—or less safe? What do such reports really tell consumers? Do they help other clinicians learn how to improve?

Reporting vs. learning

CABG outcomes (generally, mortality, length of hospital stay and costs) are publicly reported in several states including California, Texas, New York and Pennsylvania. The information collected has led to several important insights, for example, that centers performing more than 200 CABG surgeries and physicians performing more than 100 per year produce better patient outcomes.

But in Pittsburgh, the PRHI Cardiac Working Group has taken reporting a step further, turning it into a regional learning system through the Cardiac Registry. Modeled after a similar initiative, the Northern New England Cardiovascular Disease Study Group (NNE), the PRHI Cardiac Registry includes data from 12 of 13 area cardiac centers, plus one in an outlying region. This collaborative data pool examines processes and outcomes of care across a wide region, enabling surgical teams to learn from thousands of cases at numerous facilities, instead of only their own. At forums three times a year, participants have the chance to discuss what they are learning and share knowledge and experiences to improve care. Forum topics have included depression, anesthesia, perfusion, the use of anticoagulants, and glycemic control—all thought to have impact on patient outcomes.

For two years now, the PRHI Cardiac Registry has been tracking four specific areas affecting surgical outcomes (see box) with encouraging results. More recently, the registry has been used to examine outcomes with the pre-operative use of clipidrogel (Plavix) with aspirin, and the benefits of using specific techniques to prime the bypass pump (see *PRHI Executive Summary*, October/November 2003.)

What is being learned? One example involves pre-operative aspirin use. Just a few years ago, bolstered by medical guidelines, clinicians believed aspirin should be stopped 5 days before surgery to reduce the risk of bleeding. However, both NNE and PRHI registries have confirmed that continued aspirin use right up to the day of surgery actually results in better outcomes.

Learning vs. application

And yet that knowledge only becomes powerful when it is actually applied. Primary care physicians, cardiologists and hospital pre-admissions sheets must provide correct pre-operative instructions. Patients need to understand whether continuing on aspirin is right for them. In other words, to accommodate the new knowledge, systems must be redesigned to accept

it. Everyone must participate in the redesign.

Perfecting care is not possible with the registry and forums alone. Recognizing this, PRHI will be meeting with each facility individually to determine how we can best support each facility's improvement efforts. PRHI is prepared to help with facility-specific analyses of data, support with process improvements and use real-time problem solving and root cause analysis to improve care.

New learning opportunities

The Cardiac Working Group is also creating opportunities for "on the ground" shared learning. The group is encouraging facilities to host "go-and-see" sessions where Cardiac Working Group members can visit other facilities and observe processes and improvements.

Learning and improvement across the region will accelerate when systems are redesigned to accept and apply new knowledge. PRHI and the Cardiac Working Group are committed to this continuous cycle.

Just as the eyes of the nation are on a former President's recovery, the eyes of our region's cardiac clinicians are on the outcomes of every CABG patient in Southwestern Pennsylvania.

Carla L. Zema, PhD, PRHI's new Clinical Coordinator, may be reached at 412-535-0292, ext. 115 or czema@prhi.org.

Four processes of care that can lead to better outcomes following CABG

- Encourage pre-operative aspirin use.
- Maintain adequate control of heart rate at induction of anesthesia.
- Use internal mammary artery graft as a harvest site.
- Avoid excessive dilution of the blood during cardiac surgery.

CCMAG

Chronic care model in Pittsburgh

Chronic Care Model Action Group (CCMAG)
Mission Statement
To perfect healthcare for people with chronic conditions and to maximize their health through systems redesign in Southwestern Pennsylvania.

While the U.S. health system is highly responsive to many acute conditions, it struggles to adjust to the exponentially growing impact of chronic diseases on Americans. As an alternative to the default acute care model of our systems, Edward H. Wagner, MD, MPH, developed a "Chronic Care Model" that has inspired active change all around the country. The first experiments in implementing the Chronic Care Model confirmed that "effective chronic illness management requires comprehensive system change." The most common chronic illnesses to be targeted through this system change include diabetes, depression, coronary artery disease, asthma, addiction and cancer.

What is the Chronic Care Model?

The model calls for a context of six elements for providing excellent chronic care in a given region:

- **Community (Resources and Policies).** Community programming and links between agencies and care facilities to share access to important services; reduce redundancy of programs and improve referral systems between organizations, etc.
- **Health System (Organization of Healthcare).** Need for strong support from senior leadership in care institutions; need for rational incentives to provide good care; use of PDSA cycles for successful systems change (Plan, Do, Study, Act), etc.

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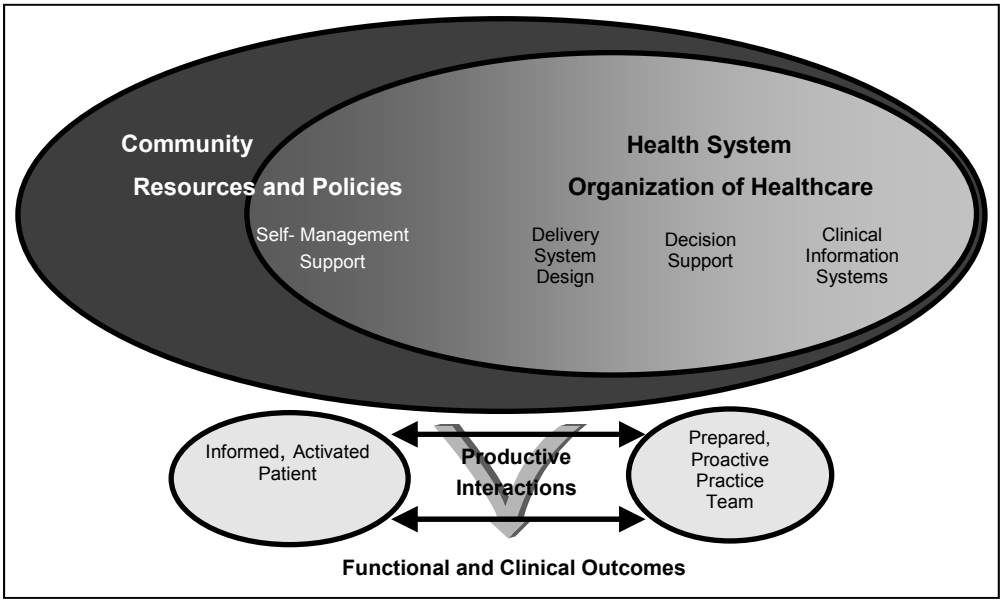
Chronic care model in Pittsburgh



The Chronic Care Model involves several components that work together. The model does not require a massive infusion of new resources, but rather describes ways of redesigning the current system to fit the pieces together.

For more about the Chronic Care Model, see Wagner, Edward, Brain Austin, Connie Davis, et al. "Improving Chronic Illness Care: Translating Evidence Into Action." *Health Affairs*. November/ December 2001. Vol. 20, No.6 p. 64-79.

- **Self-Management Support.** Patient-oriented education, empowerment and support; i.e. connection to community resources, ongoing disease education with emphasis on building patient skills to manage diseases, collaborative goal-setting, support groups, dietary counseling, etc.
- **Delivery System Design.** How the work of clinicians is organized to deliver care and how patients flow through the system; i.e. group visits vs. individual visits, scheduling and staffing policies, case management, workplace organization, etc.
- **Decision Support.** Interventions directed at improving the knowledge and skills of providers; i.e. treatment guidelines, system prompts for evidence-driven care; improved communication with other members of care-giving team, etc.
- **Clinical Information Systems.** Registry system; i.e. the ability to know which patients have which chronic diseases and what treatment each has received; ability to generate treatment plans, etc.

Within this context, the model calls for "productive interactions" between an "informed, activated patient" and a "prepared, proactive practice team." This emphasis on a healthcare *team* is critical and can include family members as well as healthcare professionals. Chronic illness will be better managed when a team of caregivers coordinate their efforts and are able to *act* on behalf of a patient to stay on top of a chronic condition instead of *reacting* to acute episodes.

Many elements of this Chronic Care Model already exist in the current delivery system, but they are fragmented and disconnected. The model does not require large infusions of new resources: major improvements in chronic care can be made by redesigning how existing resources fit together.

Taking Action in SWPA

In March, 2004, PRHI helped pull together a large group of individuals interested in advancing the Chronic Care Model and connecting the many chronic care improvement projects already under way in so many parts of our regional health care systems (neighborhood health clinics, disease management programs, individual physician practices, research centers, and so on).

In September, this Chronic Care Model Action Group (dubbed "the CCMAG") agreed on a mission statement and began to lay out goals and strategies to achieve measurable results in patient outcomes. These goals are guided by the question: "How can we deliver the best-known care to each chronically ill patient every time at the right time?" PRHI's previous work suggests that understanding a patient's journey through the healthcare system *from the patient's perspective* is one of the best ways to identify and then solve system-wide problems.

For more information or to join the CCMAG, please contact Tania Lyon, Chronic Care Coordinator, tlyon@prhi.org, (412)535-0292 x107.

From page three

Central line infections continue to decline

As a LifeCare Employee, I Commit to Following
Standard Precautions & Identified Contact Isolation Based Precautions.

A region builds knowledge: LifeCare's CEO, Clifton Orme, with Infection Control Practitioner Lynette Smith hold up the poster-sized pledge card. LifeCare employees are encouraged to sign the commitment to follow all standard and isolation precautions to protect patients from infection—especially from MRSA. LifeCare is building on the knowledge gained at the VA Pittsburgh, and also on the knowledge they gained in reducing CLABs by 87% last year.

Will the eradication of MRSA be the region's next major target?

Healthcare System, Michael Moreland, CEO (presenting), Robert Muder, MD, Epidemiologist

CDC recently called VA Pittsburgh the leading effort in eradicating MRSA* in the nation. It's a joint venture among VA, CDC, PRHI, beginning on one unit and focusing on all MRSA infections, not just those in central lines.

Before the effort began two years ago, the MRSA rates at the VA were at the community standard. Trying to go to zero infections seemed crazy at the time.

On the pilot unit we studied in detail, what happens? How? Very detailed observations helped us see patterns of things like hand hygiene compliance.

What they did:

- ✧ Aggressive education using visuals.
- ✧ Equipment cleaning and organizing.
- ✧ Supply system ensures that materials, such as gloves, are always accessible. (Paradoxically, making them more available actually lowered costs)
- ✧ Involved frontline staff and nurse managers

Results:

- ✧ Many months with zero MRSA infections on pilot unit.
- ✧ Positive staff outcomes, lower turnover, increased satisfaction.

Now working on:

- ✧ Moving out to several different units.

PRHI / Community Leadership Presentation

Lucian L. Leape, MD

Harvard School of Public Health

Talking About Unanticipated Outcomes and Medical Errors: The Patient, The Provider, The Organization

Following Dr. Leape's address a panel presentation will feature internal programs and court strategies designed to support effective communication and dispute resolution regarding medical errors and adverse outcomes.

Thursday, October 21, 2004

The Pittsburgh Athletic Association
4215 Fifth Avenue, Oakland
11:30 – 1:00 PM – Lucian Leape, MD presentation
1:00 – 3:00 PM – panel and audience discussion
$20 fee, payable at the door. Lunch provided.
RSVP REQUIRED to Leslie Smith,
lsmith@prhi.org or 412-535-0292 x 102

Calendar, November 2004

Tuesday, Nov. 2	PPC 101, Centre City Tower, 5th floor	8a-5p
	Centre City Tower, 5th floor	8—10 a
	Information Session, PRHI Offices	6-9p
Wednesday, Nov. 3	Go and See, Allegheny General Hospital	8a-noon
Tuesday, Nov. 9	Obstetrical Working Group, PRHI Offices	5:30—7p
Monday, Nov. 15	Chronic Care Model Action Group	5:30-7:30 pm
	(CCMAG)	
	Centre City Tower, 5th floor	
M-F, Nov 15-19	Perfecting Patient Care University	8am-5pm daily
	Centre City Tower, 5th floor	
	Pre-registration required*	

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**CEUs and/or CMEs offered. For further information or to enroll, call April Aubele, 412-535-0292, ext. 100, or aaubele@prhi.org*