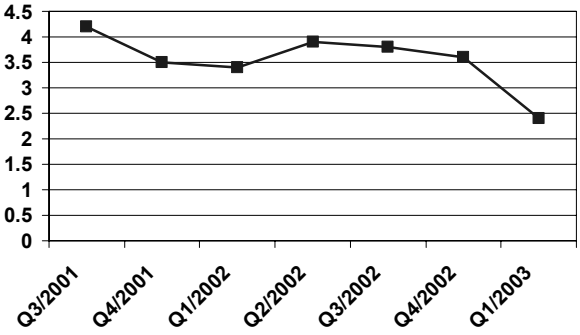
PRHI Executive Summary

Central line associated bloodstream infections

Latest CLAB report: *is this a trend?*

In past issues of the PRHI Executive Summary *we have noted relatively slow progress of safety measures and asked: Why? Now first quarter 2003 data on central line-associated bloodstream infections (CLABs) in intensive care units (ICUs) show something which, if true, represents a dramatic improvement across the whole region.*

Just one question: Is this for real?



Regional CLAB rates in ICUs (per 1000 line days)

The information seems encouraging, showing the regional CLAB rate dropping from 3.6 to 2.4 infections per 1000 line days in one quarter. But one quarter's data does not a trend make.

The new data, when added to data collected since the third quarter of 2001, show that overall, however haltingly, the CLAB rate in the region has dropped from 4.2% to 2.4%–a 43% decrease.

"The information provides a starting point for the right conversation about how a community can work together to make care better for patients in ICUs," says PRHI Director Ken Segel. "And it opens up some compelling questions."

Calling the questions

Are these data meaningful? The PRHI Infection Control Advisory Committee (ICAC), a collaboration of infection control practitioners and others from hospitals across the region, has been addressing CLAB infections for over three years. Why the more significant decrease this quarter? Are infections being identified and reported consistently throughout the region? If this reduction is real, can it be sustained? Improved further? How close can

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JULY 2003

Inside:

Real-time safety

LifeCare reports and solves problems, real-time

What does it take for a hospital to become entirely safety-centered? In its 2003 goals, LifeCare Hospital of Pittsburgh stated twin goals about medication errors:

- ✧ No patient should sustain one,
- ✧ No worker should go through the agony of being part of one.

LifeCare CEO, Clifton Orme, and senior leadership have made it clear that they will do whatever it takes to create an open and blame-free environment where problems can surface.

Every error, every day

Perhaps the most revolutionary part of LifeCare's transformation involves the implementation of real-time reporting of every medication error. Here's how it works. When a nurse or pharmacist notes an incipient error—the medication isn't on the cart, or the pharmacist can't read the order—that person first takes care of the immediate problem with a quick fix. But then, the staffer fills out a color-coded card and gives it to the Team Coordinator who enters it into the computerized MedMARx system. Most important, the Team Coordinator then begins to investigate the problem and find and fix its root cause, ideally (and often) within 24 hours.

While reporting the problem raises awareness, the greatest learning comes from discovering how to fix it, then telling others about it. On a daily, LifeCare's Risk Manager and Pharmacy Manager jointly review the prior day's MedMARx reports, ensuring that every data field on every

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we get to zero in one, finite area of hospital-acquired infection?

The answers may lie in whether we succeed in creating a ***learning system*** that is valuable for professionals. We must work to make sure these reports are useful tools in keeping patients safe, not creating blame. When the reports are integral to the work, data collection and submission will not be a burden, but will be accomplished in the course of work, giving us a clear way to learn whether what we are doing works.

The horse race, page 7, shows regional participation levels.

PRHI Scorecard

Further raising awareness of CLAB infections is the *PRHI Scorecard*, developed by the PRHI Board and endorsed by leaders of healthcare organizations in our region. The *Scorecard* challenges hospital partners to eliminate CLABs in ICUs this year. The goal of *outright elimination* raises eyebrows. But experience in serious improvement models shows that once the ideas take hold, advancements never thought possible can be achieved.

Stock photo

PRHI's coalition of infection control practitioners created a standardized "checklist" for central line insertion. Available since November 2002, is the checklist responsible in part for a seeming drop in infections?

This quarter's decline

The ICAC has proposed a number of interventions around insertion, maintenance and removal of central lines to reduce variation in practice and the possibility of nosocomial bloodstream infection. A "checklist" or procedure note for insertion of central lines was implemented in several area hospitals last fall. An "insertion kit," containing all of the recommended items needed for insertion of a line, has also been implemented in some area facilities. The results from both interventions indicate they may make it easier for healthcare workers to adhere to recommended asceptic technique. While the drop in CLAB rates may correspond with the introduction of the procedure note and insertion "kit", it's too early to tell whether the correlation is coincidental and short-term, or represents a more fundamental, lasting change.

Quarter/ year	# Persons contracting CLABs	# Hospitals submitting	Rate per 1000 line days
Q3/2001	121	28	4.2
Q4/2001	101	28	3.5
Q1/2002	106	28	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

Data vs. process-outcome links

The work of reporting is not the work of improvement. Perhaps some hospitals have fallen behind in reporting because they view "data" as the product (or worry that PRHI does), rather than the learning system it is intended to advance.

CLAB infection data, as currently collected, measures retrospectively across the region. Studying what already happened may be instructive, but it is incomplete. Unless we share information about the process used during placement, care and removal of a central line we will never be able to answer the question: W*hy?* Why is what we're doing working? Or why didn't it work? Why was there a break in recommended practice? By asking—and answering—these additional questions we can begin to learn and use problem solving techniques to adapt and change.

FOR FURTHER INFORMATION

If you would like further information regarding PRHI's Infection Control Advisory Committee, please contact Patricia Zurawski, PRHI Infection Control Specialist: 412-535-0292 x103; pzurawski@prhi.org.

More, next page

Sustain the gain?

If this quarter's gains hold, can they be sustained, let alone accelerated? Successful improvement efforts show that where ambitious goals are set, where problems are quickly investigated to root cause, where processes and outcomes are linked, and where information is shared as part of a learning system, culture change is possible. Gains can be sustained in such an environment, and unimagined improvements can happen.

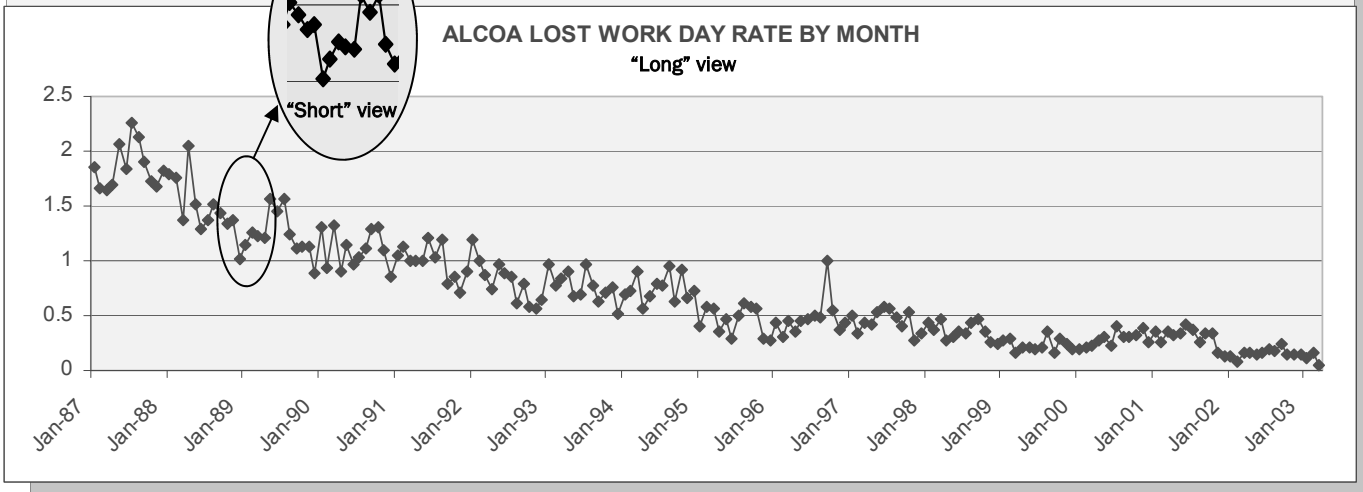
Each quarter's report will add to the story of the hospitals across Southwestern Pennsylvania as they strive to eliminate CLAB infections. Over time, the story will be made richer, more questions will be raised, and more information will be shared.

What does improvement look like?

Experience with Alcoa and Toyota, and other significant improvement efforts, confirm that the road to progress is not a straight line. Improvement may be noted for a quarter or two or three . . .often followed by a blip, or rise in the number of problems.

"It'll drive you crazy to see the numbers go up," says Paul O'Neill, former Alcoa CEO and Treasury Secretary, and current Chair of PRHI's Leadership Obligation Group. "But over time, if the values and ideas of real improvement are in place, you will see an overall decline."

The illustration below demonstrates the "short" and "long" views of improvement, using actual lost work day rate from Alcoa. The snapshot of data in the oval appears to show recent decline and little overall improvement. Viewed over time, however, the overall downward trend appears.



Save the date!

MRSA Conference

Strategies for Preventing Nosocomial Transmission of Methicillin-resistant Staphylococcus *aureus*

Thursday, October 2, 2003

4:00 pm to 7:00 pm

For more information please contact Patricia Zurawski

pzurawski@prhi.org ***412-535-0292 Ext.119***

LifeCare reports and solves problems, real-time—

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report is complete—right down to "Action taken." Those daily reports are sent to all senior management, Team Coordinators and Nurse Managers. In this way, lessons learned become lessons shared.

Once a week, a cross-functional group of Team Coordinators and senior leaders hold a "MedMARx Flash" session to review the most recent reports and action plans. Because the errors are reported and reviewed so quickly, the Flash reviewers are never far in time and place from the occurrence. Decisions can be based on new data with fresh details.

1.

PER HEPARIN PROTOCOL

Date:_____ Time: _____
RN:_____
PTT: _____ seconds at (date/time) : _____ / _____.

The current rate is _____ units / hr
____Bolus given of: _____ units
____ Increase by _____ units / hr
____ Decrease by _____ units / hr
____ No change in rate.
____ Hold for one hour

The new rate is _____ units / hr

____ Recheck PTT in 6 hours. Time_____
____ Recheck PTT in AM.

2.

Pharmacy Today's Date _____ Patient Name _____

Hospital # _____ Date/Time of error _____

Did error reach patient? Yes No **ERROR CATEGORY:** _____

Description of Error: _____

_____

Type of Error: Prescribing Transcription Faxing Pharmacy order entry Pharmacy dispensing
Administration involving the patient the drug the dose the time the route
Omission (medication treatment) Monitoring Other

Meds involved: _____

Cause of error:

Communication Computer related Fax Inadequate training
Drug look or sound alike Illegible writing Documentation Human mistake
Use of dangerous abbreviation/symbol Other _____

Action(s) Taken: _____

_____

You are a:

RN LPN RT RPh Pharm Tech M.D. Unit Secretary PA CRNP

MedMARx # _____ Ready for Release Not Ready for Release (date)

Two low-cost, low-tech, high-impact ideas

1. A sticker on the front of the chart of every patient receiving heparin: a that helps coordinate the efforts of lab, pharmacy and nursing.
2. A pocket card carried by pharmacists to flag every error immediately. The cards are quickly entered into the MedMARx system, and root cause analysis begins.

The KCL problem

Recently the Flash group discussed an error that had occurred just hours earlier, during the prior night. An experienced agency nurse as well as the supervisor, working the night shift while the pharmacy was closed, misunderstood an order for a medication to be added to an intravenous solution that was not readily available.

The nurse withdrew KCL from a premixed mini bag with a syringe and added the medication to a 1000 ml bag. This is not an acceptable practice because nurses are prohibited from performing IV admixture. This error reached but fortunately did not harm the patient. Immediate analysis of the problem led to numerous improvements, including:

- ✧ A list of all pharmacy pre-mixed IV solutions is now prominently posted on all medication dispensing cabinets—a clear visual sign to nurses that these are the premixed IV solutions that are available for use.
- ✧ Nurse educators immediately reviewed the formal orientation program for all agency nurses to make sure that the training program which includes a skill competency evaluation is clear & concise & up-to-date.
- ✧ Large orange stickers that state, "DO NOT ADMIX," on cabinets and IV mini-bags clearly delineate the hazard.

The heparin problem

Heparin, a blood thinning agent, is a crucial drug that requires vigilance in administration. Too little and a patient might develop life-threatening blood clots: too much and a patient might develop life-threatening bleeding.

People receiving heparin therapeutically must have their blood tested frequently to make sure the clotting times are appropriate. If they're off—as they often are, since each person's body responds a little differently to the drug—the heparin dose must be adjusted, and the blood re-tested. The cycle of lab tests and dosage adjustments opens the door for confusion.

In consultation with the Flash team, staffers introduced the "heparin protocol sticker," (left), which is now placed on the face of the chart for every patient receiving heparin. In the three months since the stickers' introduction, zero heparin errors have occurred.

FOR FURTHER INFORMATION
To learn ore about how LifeCare is instituting real-time problem solving, please contact:
Cliff Orme, Pres., CEO: 412-247-2356
Marty Kurth, PRHI, 412-535-0292, x 121; mkurth@prhi.org.

Can you fix my problem?

Enthusiasm for the Flash meetings has grown as results and solutions have poured out of them. Nurses on one floor collared a Team Coordinator before one such meeting, delineating a problem with syringe caps. Syringes containing anti-anxiety drugs and anticoagulants had the same color of cap. The only distinction was a tag, which could come off. And although the tags rarely fall off, the nurses asked, why not have a failsafe?

When this problem was raised in the meeting that day, pharmacists seized upon the opportunity to color code syringe caps, and install posters on the medication cart and in the units delineating the new system.

Pulling in top leaders to fix a "simple" problem

It seems like a great system: the fax machines on all of the units all network with the one in the pharmacy. One vendor, Xerox, oversees the contract for all of LifeCare's machines nationally.

But it didn't take long for a meat-and-potatoes problem to surface on the Flash team. Sometimes faxes sent simultaneously from the units were "stored" in the pharmacy fax machine for hours—even days—delaying delivery of medications to patients and frustrating staff.

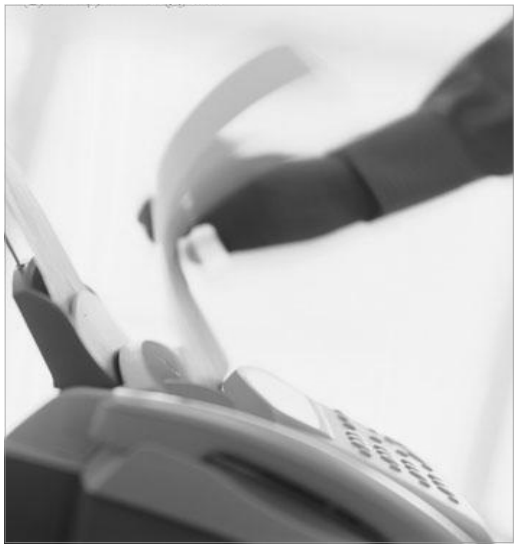
Repeated efforts to fix the problem failed. The problem soon reached CEO Orme, who initially couldn't solve it, either. Orme reached as high on Xerox's corporate ladder as he needed to—to its National Executive Customer Relations Officer. The high-level conversation resulted in a series of service calls that determined that LifeCare did not have the right software on any of the fax machines. Now that it's understood, the problem is being fixed.

Meetings vs. problem-solving sessions

Meetings can be dreaded things. But productive sessions where real problems are solved are viewed quite differently. Recently, the Flash team requested to increase meeting frequency from one to three per week, with an eye toward having one every day.

18% of sicker adults in the United States... reported that a [medication or medical] mistake or error had caused a serious problem in the past two years.

(From 'Common Concerns Amid Diverse Systems: Health Care Experiences in Five Countries,' Health Affairs, May/June 2003)



PRHI Scorecard 2003

Hospitals continue to state 2003 goals

PRHI's overall goal remains zero nosocomial infections, zero medication errors and the world's best outcomes in five clinical areas. On the way to the goal, PRHI challenges partners this year to:

- ➔ Eliminate CLABs in ICU's; reduce CLABs outside ICUs, MRSA, and others by 50%.
- ➔ Report all errors and eliminate 50% of them.
- ➔ Reduce in-hospital mortality following CABG surgery by 50%.
- ➔ Share every major event or learning regionally as soon as possible.

Responses continue in June (see May and June's *PRHI Executive Summary* for others). Stating goals publicly is an important first step toward regional learning and improvement.

Responses received in June

Suburban General Hospital (West Penn Allegheny Health System)

Margaret Hardt, President and CEO

- ♦ Reduce CLABs in ICUs by 50%.
- ♦ Zero primary bloodstream infections
- ♦ Maintain zero MRSA infections following hip and knee replacement
- ♦ Increase medication error reporting by 50%.
- ♦ Begin real-time medication error reduction

Announcing Fall 2003 Regional Patient Safety Survey

Who is doing it?

PRHI's evaluation team from the School of Pharmacy at University of Pittsburgh, Purdue University and RAND

What is it?

Confidential, region-wide hospital pilot study (7,000 people) to learn more about:

- ✧ Patient safety as an operational priority with hospital leaders.
- ✧ How intensely hospitals are implementing methods to improve patient safety.

What's being asked of leaders and staff?

- ✧ About 15 minutes.
- ✧ Two versions: one for frontline staff, one for supervisors.
- ✧ Distribution and collection designed to minimize disruption.
- ✧ Small pilot study begins this summer.

What's the return on investment?

PRHI will provide each hospital with:

- ✧ Its own survey results.
- ✧ A brief analysis that may help in preparing for JCAHO visits, and in maintaining and improving patient safety initiatives.
- ✧ Feedback for senior leaders on staff perceptions of organizational priorities on patient safety.
- ✧ Greater understanding of how hospital leadership demonstrates safety as a priority and promotes a non-punitive culture for sharing information.

Hospitals may wish to continue using the survey in to monitor future changes in their patient safety initiatives.

Site captains and CEOs of each hospital can expect further information shortly. Direct your questions to: Dr. Jan Pringle ***jlp127@pitt.edu****, or Heidi Norman at* ***hnorman@prhi.org.***

Patient Safety Progress Report—1st Quarter 2003

First quarter 2003 data reporting on:

- Central line-associated bloodstream infection (CLAB);
- Methycillin-resistant Staphylococcus *aureus* (MRSA);
- Medication error reports through the Medmarx system;
- Fentanyl patch and abbreviation reduction compliance;
- Attendance at three or more working group meetings in 2003 for medication (MSAC) or infection (ICAC).

PRHI Partner	CLAB	MRSA	Med-marx	F&A	Work Group attendance	
					MSAC	ICAC
Aliquippa Community Hospital	≈					
Butler Memorial Hospital*						
Children's Institute	n/a					
Greene County Memorial Hospital					✓	
Heritage Valley Health System, Inc. *						
Sewickley Valley Hospital	✓	✓	✓	✓		✓
The Medical Center	✓	✓	✓	✓	✓	✓
Jefferson Regional Medical Center	✓		✓	✓	✓	
Latrobe Area Hospital*	✓	✓	✓			✓
Lifecare Hospitals of Pittsburgh, Inc.	n/a	✓	✓	✓	✓	✓
Monongahela Valley Hospital, Inc.	✓	✓	✓	✓	✓	
Ohio Valley General Hospital	≈			✓	✓	
Pittsburgh Mercy Health System						
Mercy Hospital / Pittsburgh	✓		✓	✓	✓	
Mercy Providence Hospital			✓	✓		
St. Clair Memorial Hospital*	✓	✓				✓
Uniontown Hospital*		✓	✓		✓	✓

* Collaborating with national VHA Patient Safety Initiatives

PRHI Partner	CLAB	MRSA	Med-marx	F&A	Work group attendance	
					MSAC	ICAC
UPMC Health System						
UPMC Bedford Memorial	✓		✓			
UPMC Braddock	✓	✓	✓			
Children's Hospital of Pittsburgh			✓			
UPMC Horizon		✓	✓	✓	✓	
UPMC Lee Regional						
Magee Women's Hospital of UPMC H/S	✓		✓		✓	
UPMC McKeesport	✓	✓	✓			✓
UPMC Northwest Med Center, Franklin	✓				✓	
UPMC Passavant	✓		✓	✓	✓	
UPMC Presbyterian	✓	✓	✓	✓	✓	✓
UPMC Rehabilitation	n/a		✓			
UPMC Shadyside	✓		✓	✓		✓
UPMC South Side	✓	✓	✓			✓
UPMC St. Margaret		✓	✓		✓	✓
UPMC Western Psychiatric Institute	n/a		✓	✓		
Washington Hospital	✓	✓	✓			✓
Westmoreland Health System						
Frick Hospital	✓	✓	✓	✓	✓	
Westmoreland Hospital	✓	✓		✓		✓
West Penn Allegheny Health System						
Allegheny General Hospital	✓	✓	✓	✓	✓	✓
Allegheny Valley Hospital			✓	✓	✓	
Canonsburg Hospital	✓	✓	✓	✓	✓	
Forbes Regional Hospital	✓	✓	✓			✓
Suburban General Hospital		✓	✓	✓		
Western Pennsylvania Hospital	✓	✓	✓		✓	✓

Key

✓ Fulfilled

≈ Awaiting CDC code to begin reporting

Pittsburgh Regional Healthcare Initiative

650 Smithfield Street, Suite 2150
Pittsburgh, PA 15222

Calendar, August 2003

Wednesday, July 30	Chronic Care Summit (Diabetes and Depression) Allegheny Health Choices, Gateway 2 Building	4—8 p
Friday, August 1	PRHI Co-chairs PRHI offices, Centre City Tower, 2150	11:30—1 p
Tuesday, August 5	Infection Control Advisory Committee Centre City Tower, 5th Floor	8—10 a
Tuesday, August 12	Medication Safety Advisory Committee PRHI offices, Centre City Tower, 2150	3—5 p
Weds, August 13	***PRHI/PPG Depression and Diabetes Resource Fair*** PPG Wintergarden	10 a—2p
Weds, August 20	Board of Directors Jewish Healthcare Foundation, Suite 2300	4 p
Thursday, August 21	Buying Healthcare Value Committee Jewish Healthcare Foundation, Suite 2300	2:30—4 p

For further information call Helen Adamasko, 412-535-0292, ext. 100

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PRHI Executive Summary is also posted monthly at ***www.prhi.org***
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