



Pittsburgh Regional Healthcare Initiative

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Three up; three down

The Monongahela Valley encompasses the home towns of numerous national sports champions: among them, baseball greats Stan Musial, Ken Griffey Sr. and Jr., and football legend Joe Montana.

It stands to reason that the employees of Monongahela Valley Hospital, like the hometown athletes, would set ambitious goals then strive to meet or exceed them.

Such was the case when, in May 2003,

our hospital decided to tackle the challenge of "appropriate surgical antimicrobial prophylaxis." Embracing the goals set by Quality Insights of PA, we decided to see how close we could come to perfection in four surgical procedures

(colon resection; femoral popliteal bypass; total hip arthroplasty; and total knee arthroplasty). Here was our AIM statement:

At Monongahela Valley Hospital, we will improve care of surgical patients through coordinated practices developed to improve overall delivery of surgical prophylactic antibiotics so that:

1. 100% of surgical patients receive antibiotic prophylaxis < or = to 1 hour prior to incision.
2. 98% of antibiotic agents selected will be appropriate according to published guidelines.
3. Discontinued use of prophylactic antibiotics after surgery < or = to 24 hours in 100% of cases to prevent bacterial resistance.

First, we did some homework to see just what correct and current antibiotic prophylaxis should be. In the past, the "rule" was to give the antibiotic two hours before surgery, or during, or after. But the rules in this play book have changed, and with good reason. With antibiotic resistance on the rise, it is now important to give the first dose just one hour before surgery be-

gins, and to discontinue it 24 hours afterward. This protocol has been shown to reduce surgical site infections. When communicated, these findings motivated a team approach and readiness to meet the challenge.

Next, we assembled our team, which included representatives from administration; infection control; surgeons and surgery staff; nursing from the entire pathway (pre-admission testing, same day surgery and inpatient units); anesthesia; and pharmacy. Our meetings were short—huddles, really—and we came up with some simple, low-tech solutions fairly quickly.

For example, when the preadmission testing nurse receives the antibiotic order, he or she confirms that it is the appropriate antibiotic for the patient. When the antibiotic arrives from the pharmacy, the nurse double-checks it, and then literally tapes it to the patient's chart so the Nurse Anesthetist can administer it at just the right time. The anesthesia staffer documents the time of administration on the chart.

Here are the results on our three improvement areas, and four surgical site infection rates we monitored. While we cannot say with statistical certainty that these measures led to these outcomes, the general direction in both is encouraging.

Improved compliance with antibiotic protocols

Improvement measure	May 03	June 04
Antibiotics < or = to 1 hour prior to incision	79%	93%
Appropriate antibiotic	83%	99%+
Antibiotics discontinued < or = to 24 hours post op	35%	100%

Improved surgical site infection rates in four areas

Surgery	2002-03	2003-Mar 04
Knee arthroplasty	0%	0%
Hip arthroplasty	4.54%	3.28%
Colectomy	4.49%	1.52%
Femoral popliteal bypass	15.69%	1.88%





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