

Surgical Care Improvement Project:
The Business Case

Surgical Care Improvement Project “The Business Case”

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Business and Medicine Meet Face to Face



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Surgical Care Improvement Project: The Business Case

Introducing the evolution of

National
SURGICAL INFECTION PREVENTION
Medicare Quality Improvement Project

SC&P Surgical Care Improvement Project
A National Quality Partnership

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A6 • ARIZONA DAILY STAR / Tuesday, February 22, 2005

Surgery infections blamed on faulty use of antibiotics

ORLANDO, Fla. — Hospitals nationwide are contributing to the illnesses and deaths of thousands every year by failing to follow basic pre-surgical procedures to reduce the chances of infection, according to a study released Monday.

Every year, 50,000 Americans die from infections they pick up in hospitals. The second-most-frequent site of infection is at the surgical incision.

The new study focused strictly on this problem, and whether doctors were following standard practice by giving patients antibiotics within 60 minutes of their surgeries.

But they found that nearly 44 percent of the 34,133 patients who were tracked did not receive the medication in that 60-minute target zone. Almost 10 percent didn't get a dose until four hours after the doctor began operating.

While the vast majority of patients did receive antibiotics at some point (99 percent), doctors have known since the 1960s that the drugs are most effective when given within that one-hour window.

"We don't expect all surgical-site infections to be prevented, but we do think 40 (percent) to 60 percent of them could be," said Dale Breitzler, an internal-medicine physician from Oklahoma who led the study. "But what we are seeing is that the timing (of antibiotic treatment) is not ideal in many cases, and hospitals need to have a system in place" to correct that.

Paid for by Medicare, the study was carried out by researchers from the Oklahoma Foundation for Medical Quality, a private, nonprofit group monitoring quality issues at the behest of Medicare; the Centers for Disease Control and Prevention; the Centers for Medicare and Medicaid Services; and others. It was published in the medical journal Archives of Surgery.

The issue of patient safety is gaining increasing attention as the problems reach staggering levels. Dr. Bonnie Zell of the CDC said Monday that an estimated 2 million people pick up infections during hospital stays every year. That number includes about 300,000 infections at the site of a surgical wound. She estimated the cost of these surgical-related infections at \$1.5 billion. The CDC estimates the overall cost of all hospital-induced infections at \$5 billion annually.

People with infections at their incisions "stay up to seven days longer in the hospital, are 60 percent more likely to be admitted into an intensive care unit and have twice the chance of dying," when compared with similar patients who don't develop a wound infection, Zell said.

The study noted that treatment for such a patient alone could cost more than \$30,000 extra.

Doctors say another important issue is the overuse of antibiotics, with hospitals giving patients too many kinds of antibiotics and administering the drugs for more than 24 hours after surgery.

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**Patients' care often deficient, study says.
Proper treatment given half the time.**

On average, doctors provide appropriate health care only half the time, a landmark study of adults in 12 U.S. metropolitan areas suggests.

**Medical Care
Often Not
Optimal**

Failure to Treat
Patients Fully Spans
Range of What Is
Expected of
Physicians and Nurses

**Study: U.S.
Doctors are
not following
the guidelines
for ordinary
illnesses**

Medical errors corrode
quality of healthcare
system

The American healthcare system, often touted as a cutting-edge leader in the world, suddenly finds itself mired in serious questions about the ability of its hospitals and doctors to deliver quality care to millions.

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Why SCIP

- 42 million operations performed in the United States each year
- 5 percent to 10 percent have associated postoperative complications
- *To Err is Human*
 - 44,000 operations (just one medical center, 1977–1990)
 - 2,400 patients suffered complications
 - » *To Err is Human: Building a Safer Health System*—IoM 2000
- *JAMA*
 - Postoperative complications account for 22 percent of the preventable deaths
 - 2.4 million additional hospital days
 - \$ 9.3 billion in additional charges

JAMA 2003;290:186–1874

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Surgical Care Improvement Project: Why?

Medicare could prevent* up to:
13,027 perioperative deaths
271,055 surgical complications

* Major surgical cases



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SCIP Goal

Reduce preventable surgical
morbidity and mortality
25 percent to 45 percent
over five years in the
Medicare surgical population.



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SCIP Infection Measures

1. Timely Abx.
2. Appropriate Abx.
3. Abx. Discontinuation Within 24 Hours
4. Controlled Periop Glucose \leq 200 Cardiac
5. Postop Infection (diagnosed during stay)
6. Appropriate Hair Removal
7. Periop Normothermia Colorectal Cases
8. Controlled Periop Glucose \leq 200 Major Surgery
9. Maintained Normothermia on Cases Without Planned Hypothermia

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CV Complications

10. Beta-blockers
During Periop
Period
11. Beta-Blockers
Periop if BB Preop
12. Intra/Postoperative
AMI Within 30
Days
13. Intra/Postoperative
Cardiac Arrest
Within 30 Days

Thromboembolic Measures

14. Thromboembolism
Prophylaxis
15. Venous Prophylaxis
16. Intra/Postoperative
Pulmonary Emboli
17. Intra/Postoperative
DVT

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Respiratory Measures

18. Postoperative Orders and Documentation of Elevated HoB
19. Postoperative Ventilator-associated Pneumonia
20. Peptic Ulcer Prophylaxis
21. Ventilator Weaning Protocol

Vascular Access

22. Permanent Hospital ESRD Vascular Access Procedures That Are Autogenous AV Fistulas

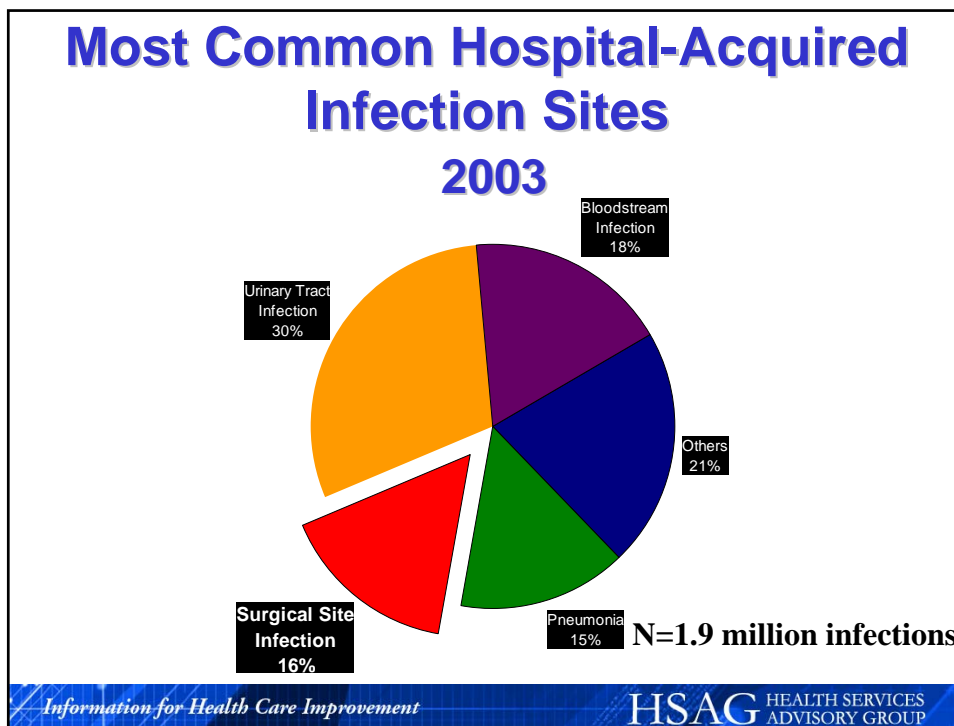
Global Measures

23. Death Within 30 Days
24. Readmission Within 30 Days

Infection Prevention

- SSI occurs in 2 percent to 5 percent of extra-abdominal surgeries and up to 20 percent of intra-abdominal surgeries
- SSI patients are:
 - **60 percent more likely to spend time in the ICU**
 - **5 times more likely to be readmitted to the hospital**
 - **2 times more likely to die**

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Impact of SSI

	<i>Infected</i>	<i>Uninfected</i>
Mortality	7.8 %	3.5 %
ICU Admission	29 %	18%
Readmission	41 %	7 %
Median Initial L.O.S.	11 days	6 days
Median Total L.O.S.	18 days	7 days

Initial excess cost + \$ 3,644 (median)
Total excess cost + \$ 5,038 (median)

Kirkland, *Infection Control & Hospital Epidemiology* 1999;20:725

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Adverse Cardiac Events

- Occur in
 - 2 percent to 5 percent of noncardiac surgeries
 - 34 percent of vascular surgery
 - » *N Engl J Med* 1999;341:1789-1794
- AMI perioperatively
 - 70 percent mortality rate
 - » *Mayo Clin Proc* 1997;72:524-531
- BB therapy can reduce cardiac events by half
 - » *Arch Intern Med* 2004;164:762-766

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Hyperglycemia and ICU Mortality

1,826 consecutive ICU admissions (Stanford) 1999–2002

- Heterogenous mix of diagnoses
- Mean ICU blood glucose
- Compared survivors vs. nonsurvivors

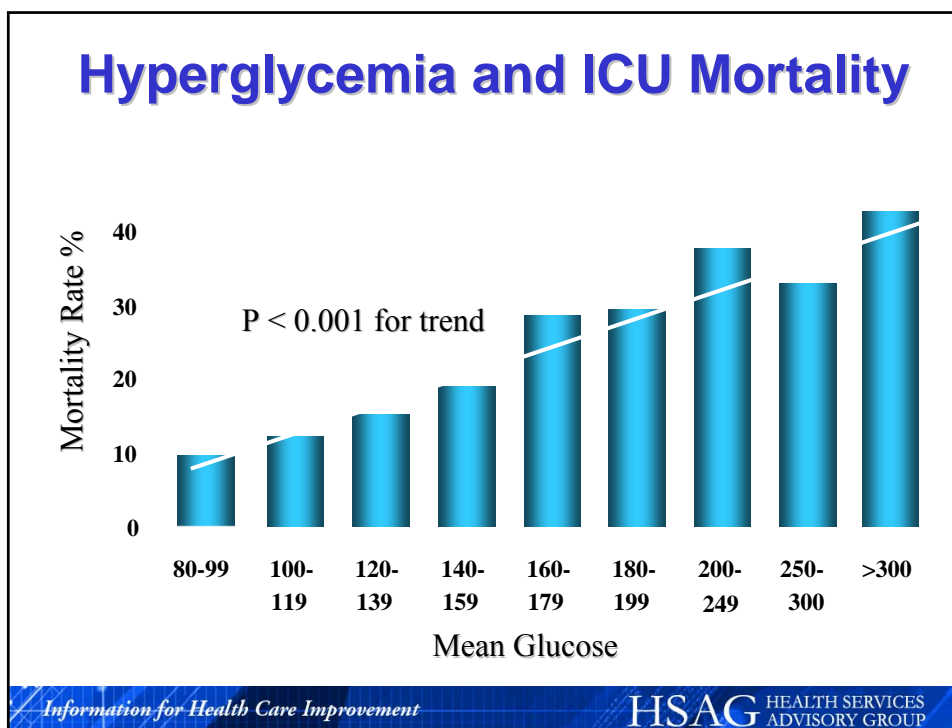
Mayo Clinic Proceedings 78:1471, 2003

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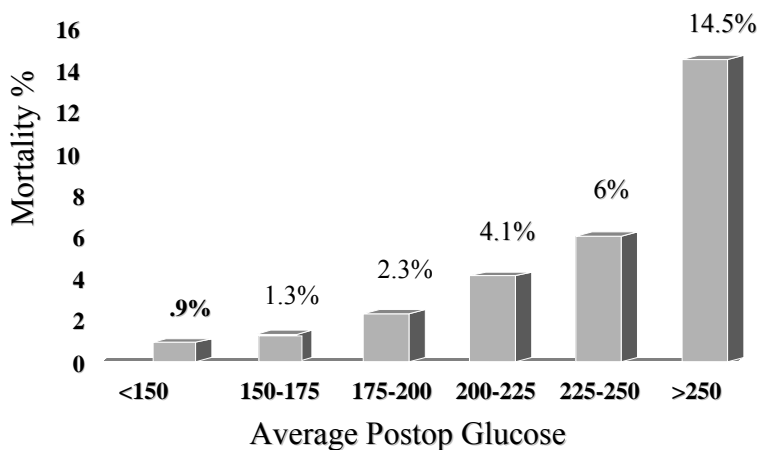


Hyperglycemia and Hospital Mortality

CONCLUSION: Even modest degrees of hyperglycemia occurring with ICU and non-ICU admissions alike are associated with a substantial increase in hospital mortality.

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CABG Mortality In Diabetics



J Thorac Cardiovasc Surg 125:1007, 2003

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The Bottom Line

Each 50 mg/dl lowering of glucose in
postoperative CABG patients = 1 day less
hospital stay.....Net savings \$680/pt.

Intensified Rx costs NO MORE
than nonintensified Rx

Circulation 100:II-556; Endo Prac-in press

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Normothermia in Colon Resections

6 surgical wound infections out of 104 patients in normothermia group, compared with 18 out of 96 in hypothermia group ($p = 0.009$)

Hypothermia leads to vasoconstriction and decreased oxygen tension at the wound site → impaired neutrophil function → decreased wound strength.

N Engl J Med 334:1209-15 *N Engl J Med* 336:1730-7

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DVT Major Surgical Cases

- 25 percent in patients w/o prophylaxis
- 7 percent PE w/o prophylaxis
- In orthopedic cases w/o prophylaxis
 - 50 percent DVT
 - 30 percent PE
- A 50 percent reduction of fatal PE with LDUH (low dose unfractionated heparin)

» *Chest* 2001; 119:132S-175S

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Ventilator-Associated Pneumonia

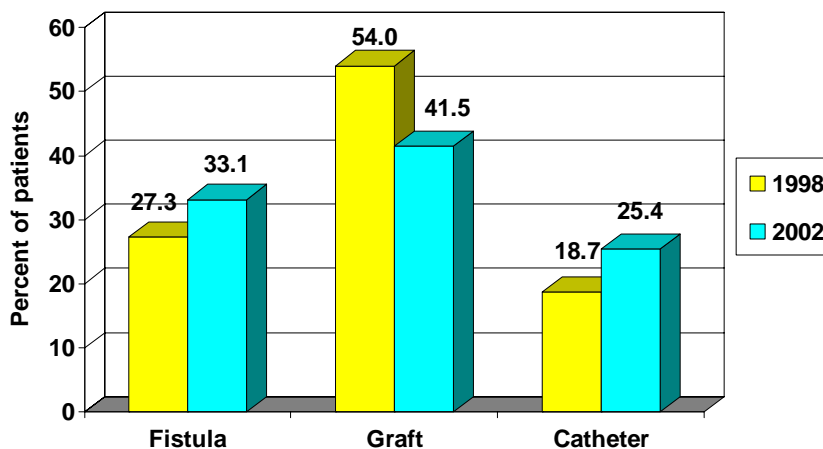
- Patients with VAP remained in ICU 4.3 days longer
- VAP → 5.8 percent increased risk for death
- Strategies to decrease the incidence of VAP could decrease morbidity, mortality, and health care costs and improve patient safety

Annals of Internal Medicine. Volume 141 • Number 4. August 2004

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Fistula First Distribution by Access Type

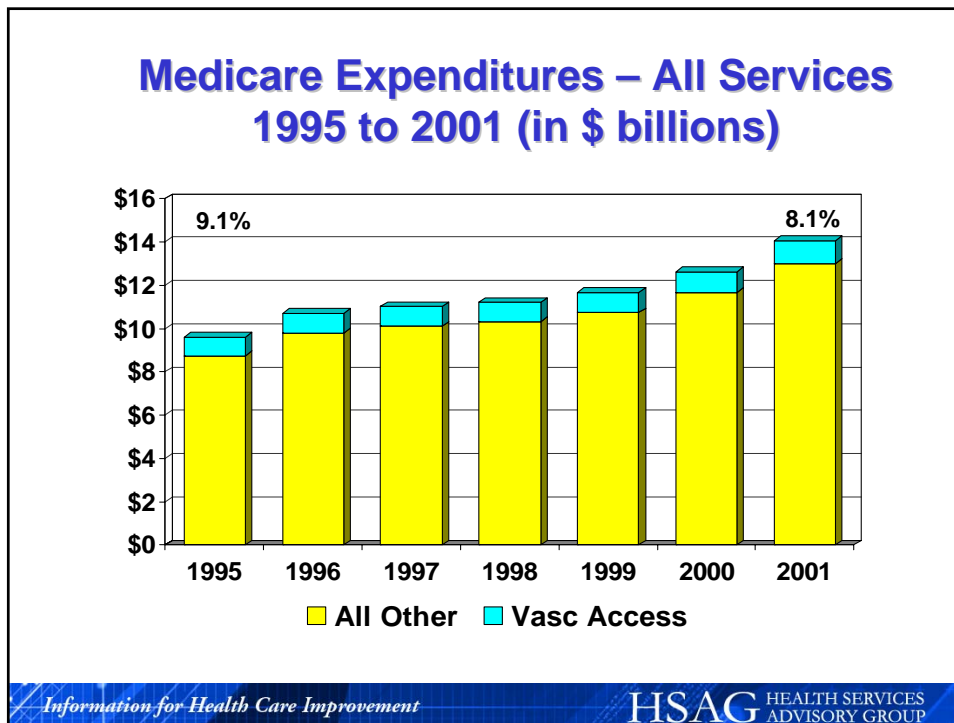
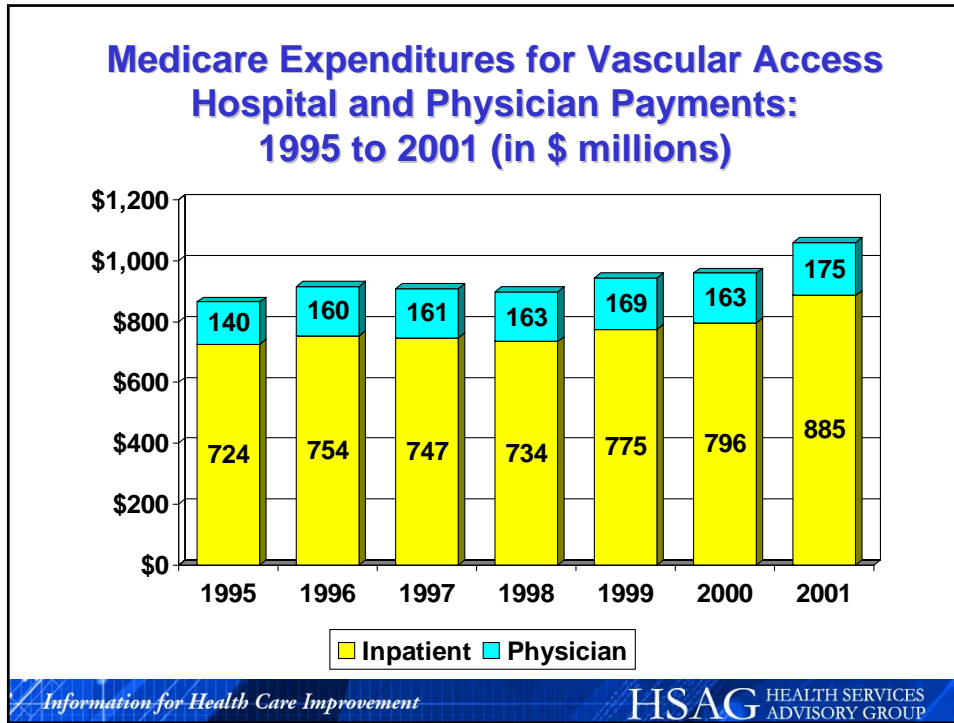


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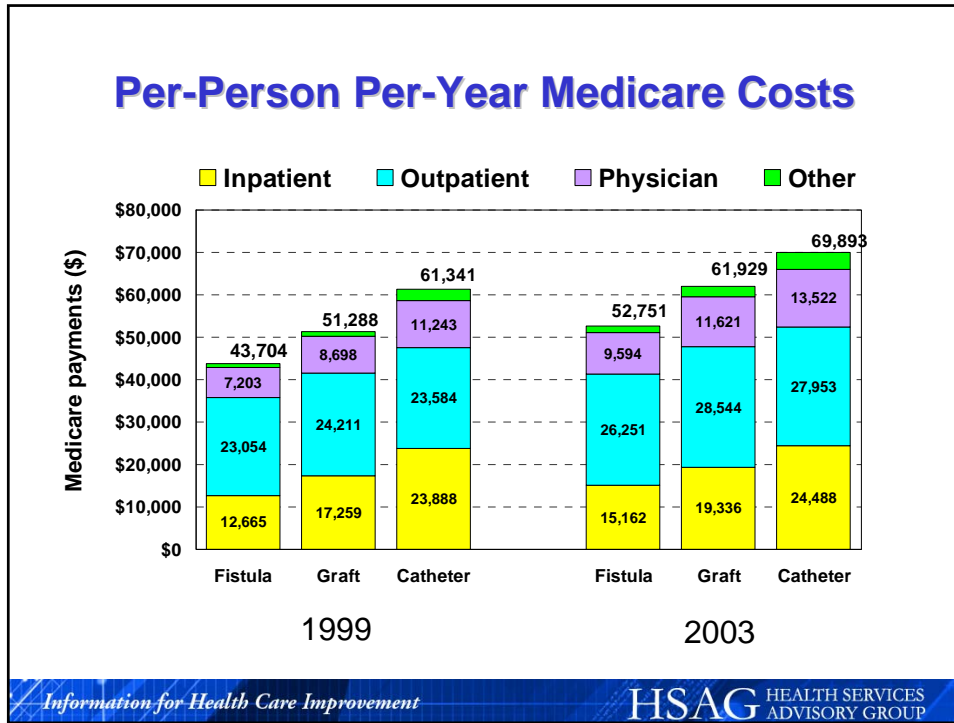
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The Bottom Line

We could save:

- Hundreds of thousands of added hospital days
- Tens of thousands of lives
- Billions of dollars (savings: \$22,000–\$28,000/complication)
- Millions of manpower hours
- Untold pain and suffering

By Making SCIP Part of Our Surgical Culture

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The Intangibles and Not-So-Intangibles

- Reputation in the community
- Reputation among the payers
- Personal and personnel satisfaction and pride

Is P4P far behind?

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Making Surgery Safer



Project Overview

Project overview and literature review available at:

www.medqic.org/scip

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