



MASSACHUSETTS



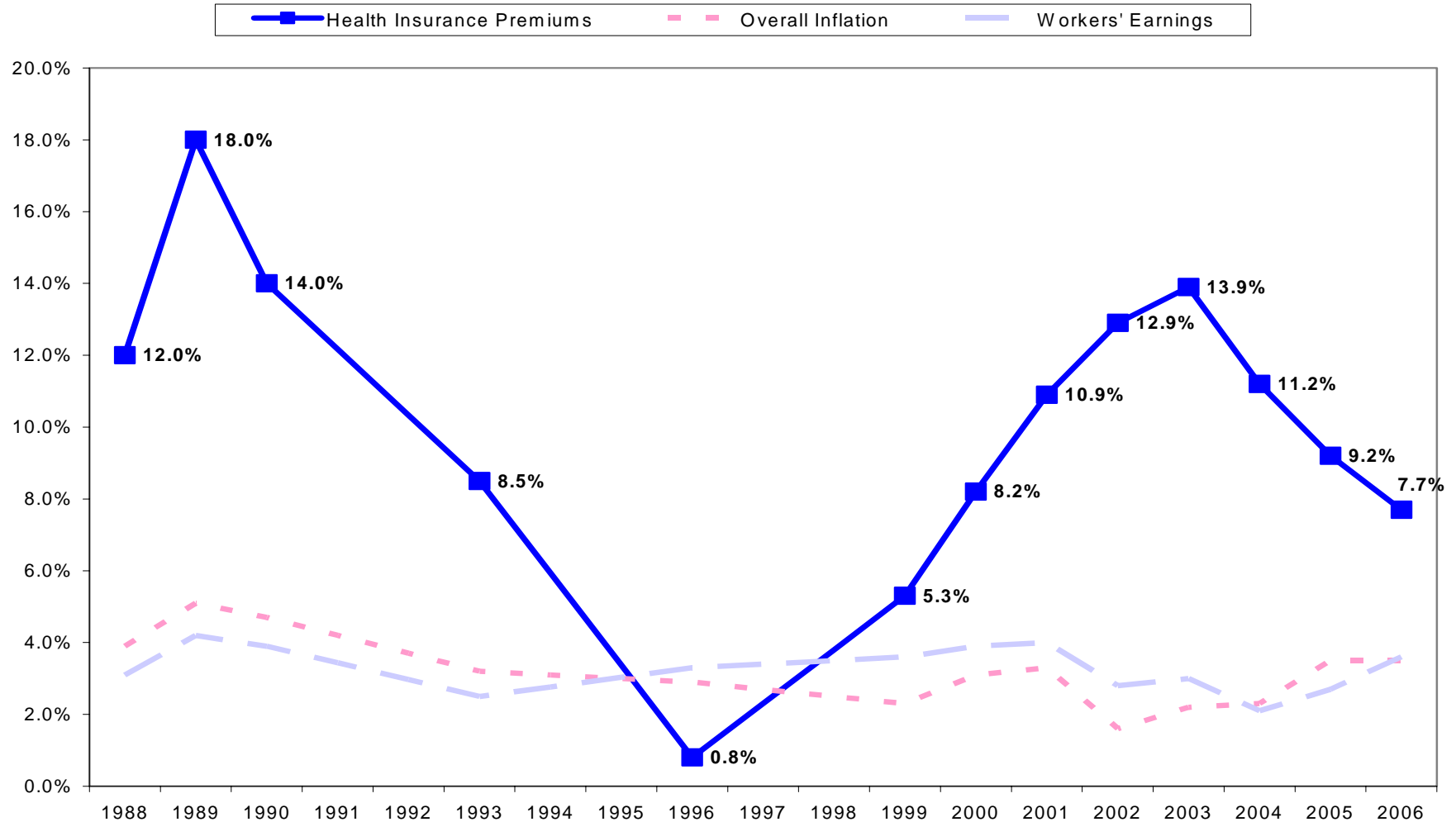
# *Financial Value of Quality on the Health Care System*

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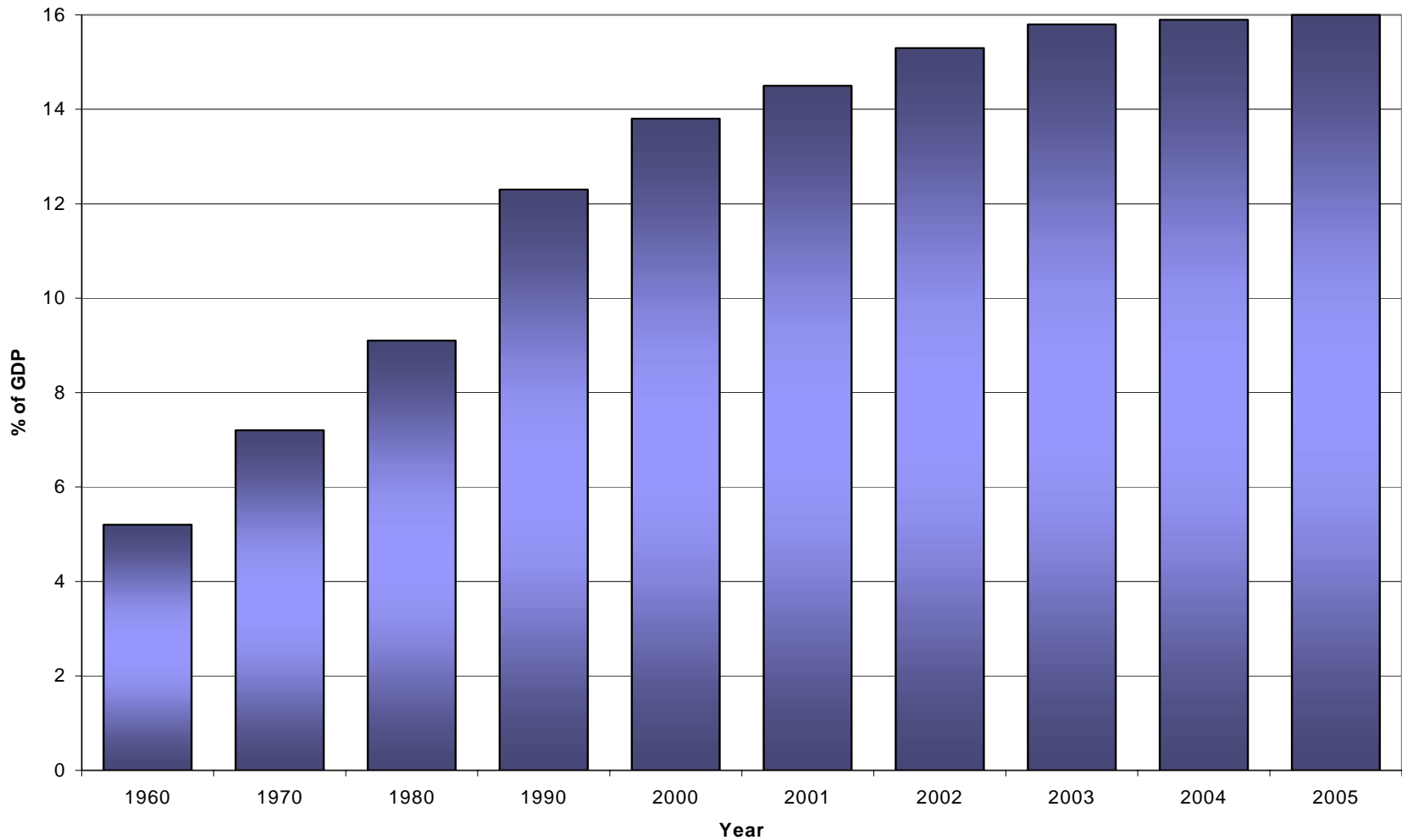
- Background
  - Issues
  - BCBSMA Involvement
- Misuse/Safety Study
- Preview of Overuse/Clinical Waste & Underuse/Effectiveness Studies
- Closing Remarks

# Increases in Health Insurance Premiums Compared to Other Indicators (1988 – 2006)



Source: 2006 Kaiser/HRED Survey of Employer-Sponsored Health Benefits

# National Health Expenditures As Percent Share of GDP (1960 – 2005)



Source: Centers for Medicare & Medicaid Services, Office of the Actuary: Data from the National Health Statistics Group.

- Disease Management
- Medical Management Policy
- Care Management (Prevention & Wellness)
- Drug Formularies
- Provider Contracting & Pay for Performance
- Product Design (Cost Sharing, Member Incentives, etc.)
- Information Technology for Members
- Account Reporting
- Quality & Safety Improvements?

# Is There A Quality Problem?

## The Institute of Medicine

- Estimates that between 44,000 and 98,000 people are killed each year from medical errors

## New York State Study Findings

- 3.7% of injured patients experienced adverse events
- 13.6% of these events led to death
- 2.6% led to permanent disability
- 25% of these adverse events resulted from negligence

## National Study of Medication Errors

- Over a 10 year period (1983-93), deaths due to medication errors rose more than two-fold

## Agency for Healthcare Research & Quality (AHRQ)

- An estimated 18,000 people die each year because they do not receive effective interventions.

# What does this cost?

## Midwest Business Group on Health

- The economic impact of poor quality is over \$750 billion per year (\$500 billion in unnecessary medical costs & \$250 billion from lost productivity).

## The Institute for Healthcare Improvement

- Estimates that between \$210 million - \$420 million is wasted annually due to poor quality and operating inefficiencies
- The US could cut 15% - 30% of its \$1.4 trillion annual healthcare tab by operating more efficiently and improving quality

## Institute for Healthcare Delivery Research

- 50% of all resource expenditures in hospitals is quality-associated waste.

## The Juran Institute

- The annual cost of poor quality care per covered employee was calculated to be between \$1,700 - \$2,000.

**Estimates vary greatly on the financial impact of poor quality & safety.**

## Answer the Following Questions:

- *How large is the opportunity?*
- *Where does it accrue?*
- *What is the impact on affordability and competitiveness?*
- *How can we maximize the investment made to affect and reward change?*

## Determine financial impact to the healthcare system

- *Incorporate knowledge into provider contracting discussions – margin maximization vs. revenue maximization*
- *Responsibility to the healthcare community*

## The ability to place a value on provider pay for performance

- *Marrying clinical areas in which a provider can improve with the financial value of the measure of improvement.*

## Sales competitiveness

- *“We make your employees healthier and more productive **AND** we save you money!”*

## Value Based Insurance Product Design

- *Cost sharing based on the value of clinical services*

# Value of Quality Team



## Basic Assumption:

*There is unnecessary cost to a system of poor health care quality and improved quality has a positive financial impact.*

## Goal:

*To determine the financial value of improved quality related to misuse/safety, overuse/clinical waste, and underuse/effectiveness of healthcare services.*

# Categories of Poor Quality & Safety

- Misuse/Safety – an appropriate service is provided, but a preventable complication occurs, and the patient does not receive the full benefit of the service. (Example: Hospital Acquired Infections)
- Overuse/Clinical Waste – the provision of a health care service under circumstances in which its potential for harm exceeds the possible benefit. (Example: Back Surgeries)
- Underuse/Effectiveness – the failure to provide a health care service when it would have produced a favorable outcome for the patient. (Example: Appropriate monitoring of Chronic Diabetic Patients)

Source: Institute of Medicine. *Crossing The Quality Chasm: A New Health System for the 21st Century*



# Misuse/Safety Study

## Eliminating Misuse... ...Reduces Complications and Mortality

### Benefits for the Hospital:

- Fewer resources needed to deliver care
- Opens up hospital beds for higher or positive margin cases

### Benefits for the Payer/Account:

- Reduced payments to hospitals for unnecessary care and avoidable readmissions
- Increased member/employee productivity

# Value of Quality Project Scope – Misuse/Safety

## Objective:

To answer the question: What is the impact to a system that rewards providers for high quality care – through reducing or eliminating misuse of healthcare services?

## Impact on Hospital Costs

Hired two industry experts to determine the costs to hospitals of misuse of healthcare services

## Impact on Hospital Revenue

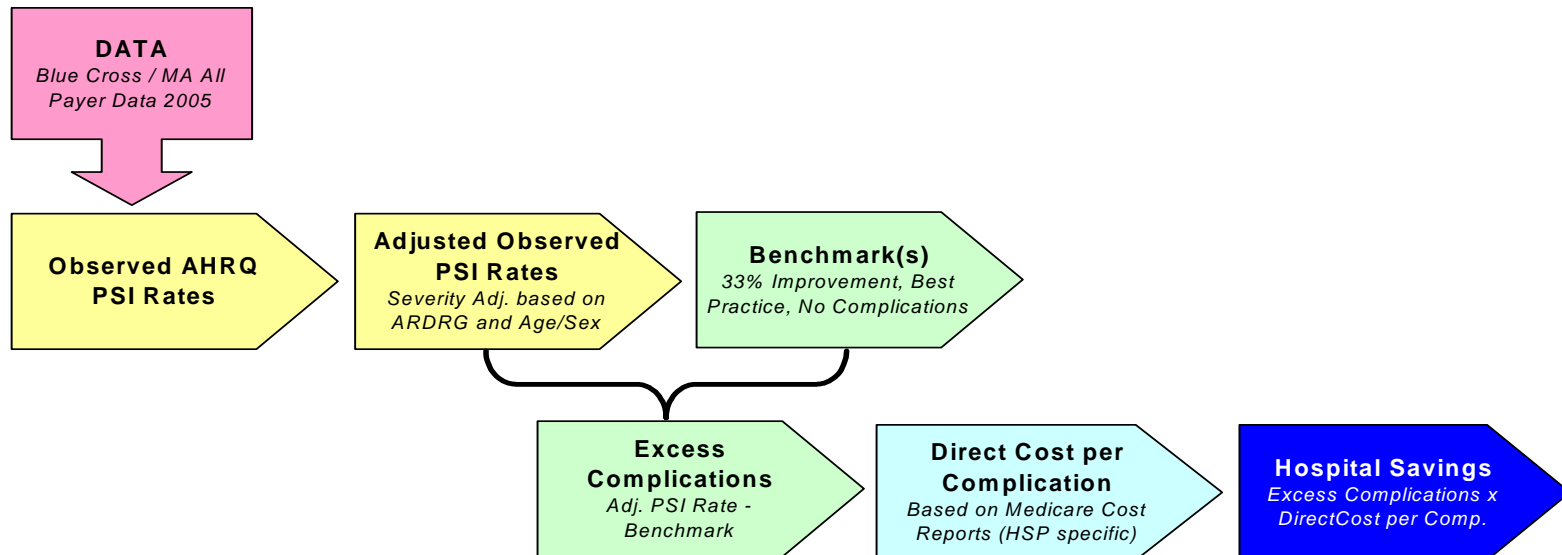
Internal team focused on claims data and what is paid to hospitals for misuse of healthcare services

## INDUSTRY EXPERT #1

### *Administrative/Claims Data Approach*

#### Measures

- *36 Patient Safety Indicators (PSI)*
- *Examples: Infections due to Medical Care, Post-op Sepsis, Decubitus Ulcer*



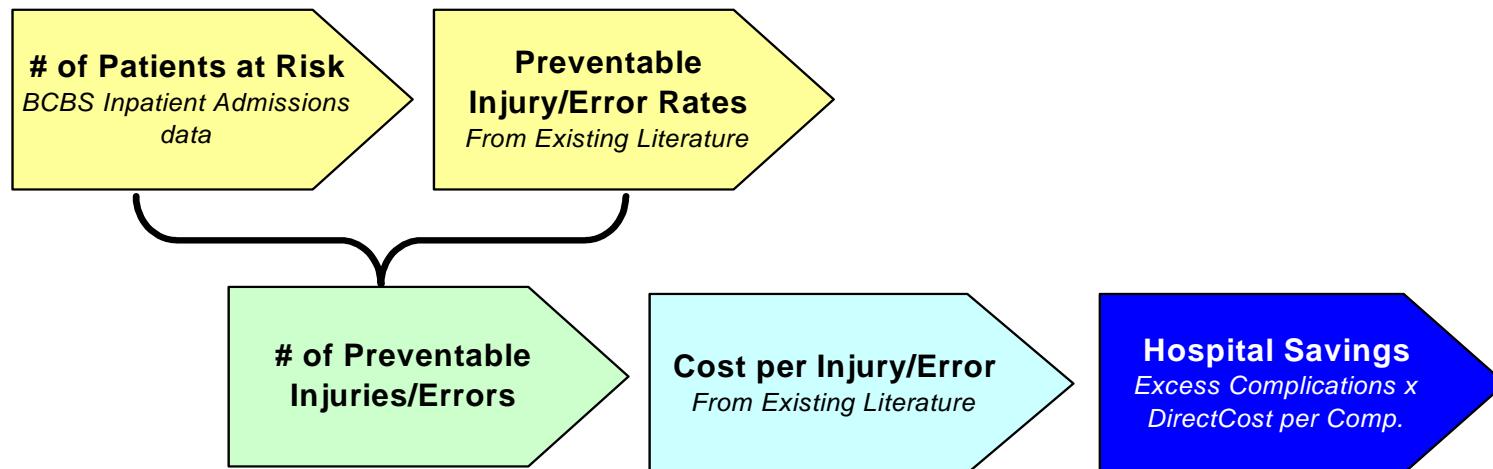
**Hospital Cost Savings range from:**  
**1.0% (Best Practice) – 2.0% (Zero Complications) of Inpatient claims or 0.0% - 0.5% of Medical & Rx Claims**

## INDUSTRY EXPERT #2

### *Academic/Literature Review Approach*

#### Measures

- *Focus on thrombo-embolic disease, hospital acquired infections, and other adverse events such as adverse drug events, falls, and pressure ulcers.*



**Hospital Cost Savings range from:**  
**5.0% (Best Practice) – 12.0% (Zero Complications) of Inpatient claims or 1.0% - 2.0% of Medical & Rx Claims**

## OTHER SIGNIFICANT STUDIES

### *Premier / CMS Demonstration Project*

#### The Study

- 260 Hospitals Participated in a 3 Year P4P Program
- The study covered process-oriented, evidence based consensus clinical measures in 5 clinical condition areas: AMI, Heart Failure, Community-acquired pneumonia, CABG, and Hip/Knee Replacement Surgery.
- The analysis focused on the impact of different levels of performance on hospital costs, mortality, complications, readmissions, and length of stay.

#### Results

- Hospital performance improved continuously over time.
- Higher performing hospitals had lower costs per case in each of the 5 clinical condition measures.



**In areas of measures where there was overlap, Premier's results are consistent with the findings of Industry Expert #2 (academic approach).**

## OTHER SIGNIFICANT STUDIES

### *University of Michigan Health System Study*

#### The Study

- Merged clinical data from 1,000 University of Michigan patients that were enrolled in the National Surgical Quality Improvement Program (NSQIP) to the hospital's internal cost accounting system.
- Applied rates of post-op complications of these patients to the excess cost per complication from the accounting system
- The study focused on Infectious, Cardiovascular, Respiratory, and Thromboembolic complications

#### Results

- Payers experienced an average increase in cost of 54% when complications were present
- Average hospital profit margins dropped from 23% to 3.4% when complications were present



**Unable to draw appropriate conclusions when comparing this study against the industry experts' work.**

## Limitations

### Industry Expert 1

- Dependent upon administrative claims data
- Examined the anchor admission only – no estimate of the downstream impact of avoiding the error

### Industry Expert 2

- Applied theoretical research results to BCBS data, which may not be relevant to the MA market
- Examined the anchor admission only – no estimate of the downstream impact of avoiding the error

### Premier

- Significant selection bias

### University of Michigan

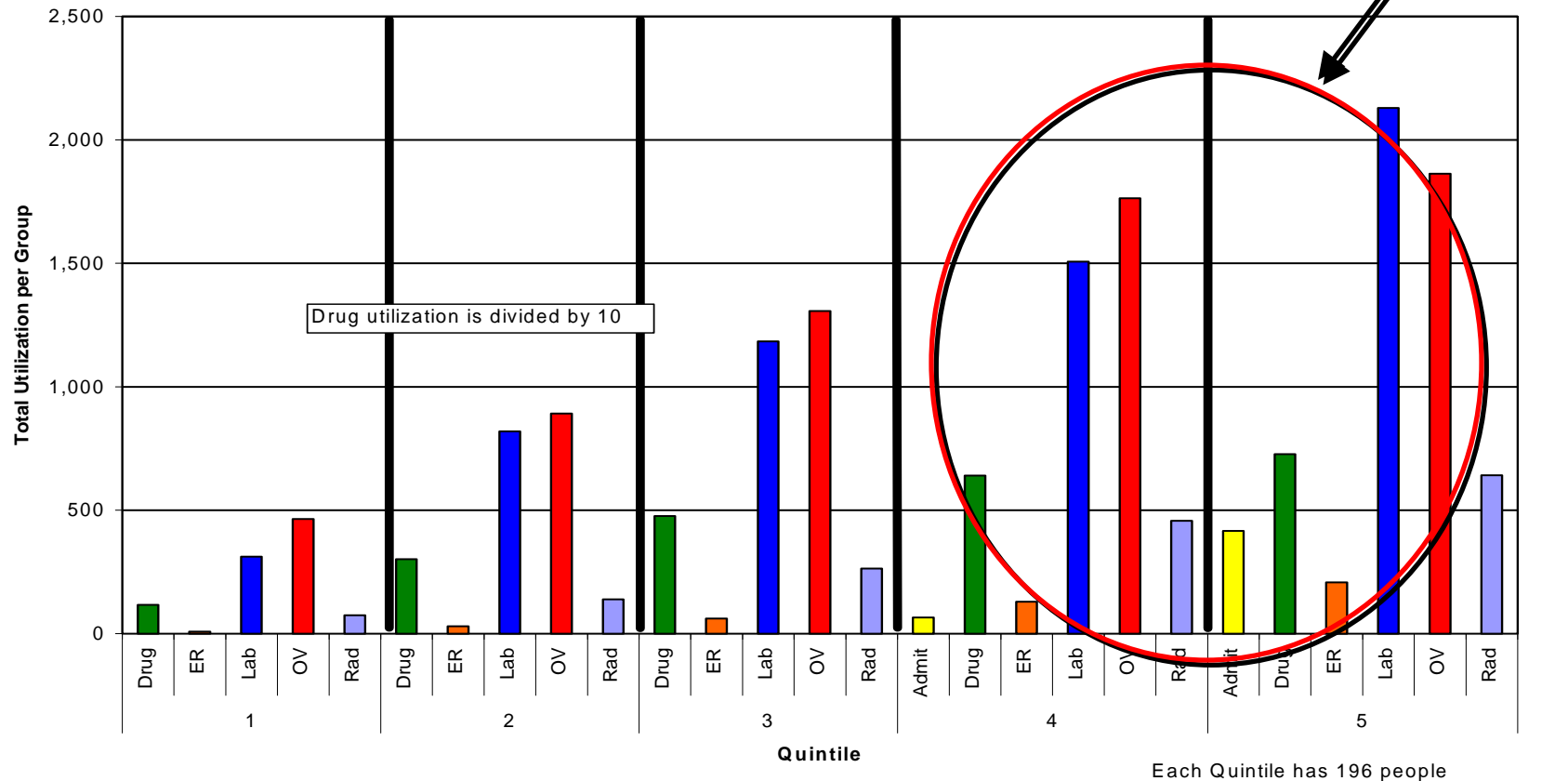
- Sample size is only one hospital

# Hospital Perspective – Revenue Impacts

## Step 1 – Identification of Patients with Complications

- A. Admissions coded as complications
- B. Excessively high users of services 6 months post admission

**Medical-Circulatory Admissions in Q3 '05**  
Utilization in the 6 months following the Admission



## Step 2 – Determine Excessive Cost of Complications

- A. Determine cost differential between an admission with complication and without. **(Savings at Anchor Admit)**
- ~10% of admissions studied were coded as complications
  - On average the cost per admit for complicated admissions is *double* that of non-complicated admissions
- B. Determine potential savings if excessive users “act like” normal users. **(Savings Post 6 Months)**

### Results

- A change in the DRG severity for the initial admission (from with complications to without complications) resulted in **(0.5%)** to **(1.0%)** in reduced payments.
- Analysis of the 6 months post hospitalization produced **inpatient** payment changes of **(0.5%)** to **(1.0%)**.
- Payment changes on **outpatient** services were estimated to be **(0.0%)** to **(0.5%)**.



**Hospital Revenue Impact ranges from:**  
**5.0% - 10.0% of Inpatient Claims or 1.0% - 3.0% of medical and pharmacy claims**

## Limitations / Challenges

- Limited to claims data only; however providers may or may not code a complication
- Made assumptions on identifying complications
- Attempted to analyze utilization 6 months downstream to compensate for coding



# Overuse/Clinical Waste and Underuse/Effectiveness Studies

## What we're doing?

### Shared Decision Making Procedures (Knee Replacements, Back Surgery, CABG)

- Encourage Providers to follow HEDIS guidelines and give patients decision making power
- Looking at variability, average costs, and average or best practice incidence rates for each procedure to determine gross savings by type of service/provider.
- Exploring "offsetting" services and costs of not performing these procedures to arrive at net savings

### Evidence Based Guidelines

- Reduce variability in High Tech Radiology, Lab/Pathology, and PT/OT services through the application of evidence based guidelines, decision support, and new technology such as EMR
- Exploring impact of utilization management on these services based on historical experience

### ER Visits

- Isolating non-emergent care that occurs in the ER and create incentives to encourage longer PCP hours or member incentives to visit PCP
- Looking at best practice non-emergent ER care rate and average ER visit costs
- Exploring offsetting costs of PCP or SCP visit

## What we're doing?

- Seven Condition Categories: **Diabetes, Hypertension, Depression, Coronary Artery Disease (CAD)**, Asthma, Preventive Screenings, Cancer Care
- Disease Management Savings for certain conditions
- Productivity/Absenteeism gains
- Longitudinal studies on process measures for diabetes patients
- Longitudinal studies on outcomes measures associated with diabetes (HbA1c tests, LDL)
- Outcomes data from PHA surveys
- Research Publications (Bridges to Excellence, Other case studies)

# Closing Remarks

- In the face of rising health care costs, improving quality/safety can be a major lever in mitigating trend
- Improving quality/safety can provide a win-win solution for patients, providers, and payers.
- We, as health actuaries, have the tools to uncover the financial value of improved quality/safety and influence how care is delivered in the future.