

# Using Data to Improve Quality, Safety and Operations



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Community Health Institute

# What we hope to accomplish

- How did we get to where we are regarding measurement
- Current measurement trends and initiatives
- An approach that meets measurement needs and requirements for small rural hospitals

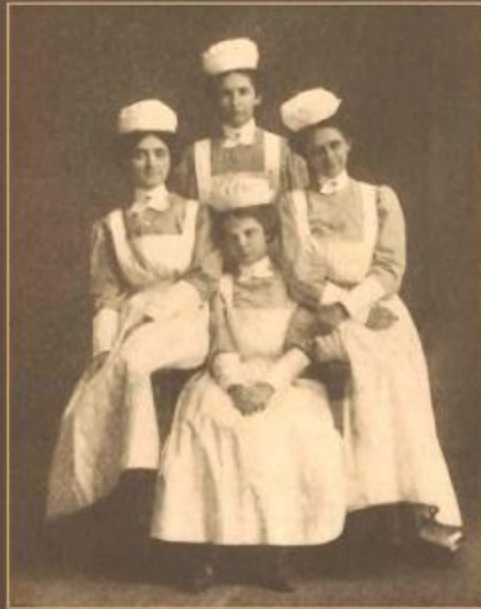
# Concept of Measurement

- 1895 – Ernest Codman, MD
- 1911-19186– First Medical Error Study
- 1918 – Founded American College of Surgeons – “Minimum Standard for Hospitals”
- 1950-1951- Joint Commission on Accreditation of Hospitals (JCAH)
- 1937- Formation of Health Plans
- 1950-1980 Golden Years
- Late 60s – early 70s – Utilization Review
- 1983 – Federal HMO Act
- 1980 – 2000 Focus on Cost Control

# Underlying Influences

- Public Policy:
  - Trained to let “perfect not be the enemy of good”
  - View Performance measurement as the “glass is half full”
    - Move ahead with measurement
    - We want the data now!
- The Professional:
  - Trained to think critically and analytically
  - Many view performance measurement as the “glass is half empty”
    - Too many issues to be resolved
    - Too costly without enhanced Information Technology
- Consumer:
  - Frequently unaware of quality improvement related goals of performance measurement
  - Want clear answers when few are available
    - May be asking the wrong questions

# The Past



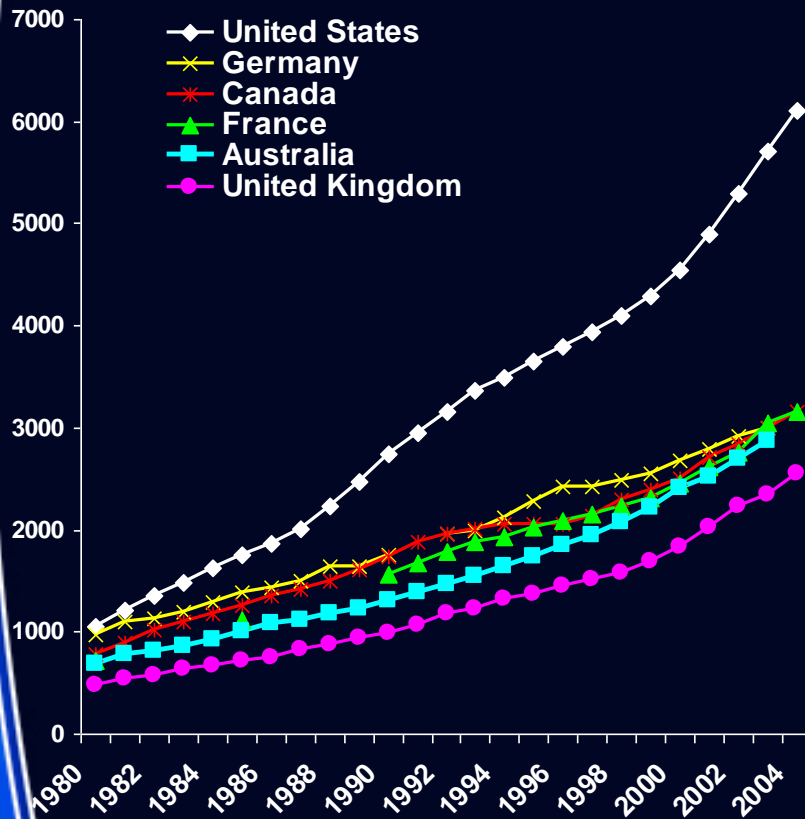
**R A T E S**  
Adopted by  
**TEXAS GRADUATE NURSES ASSOCIATION**  
District No. 8  
Effective Nov. 8, 1951

8-hour duty, 7 a.m. to 3 p.m., medical and surgical cases .....	\$12.00
8-hour duty, 3 p.m. to 11 p.m., medical and surgical cases .....	12.00
8-hour duty, 11 p.m. to 7 a.m., medical and surgical cases .....	12.00
Overtime, per hour .....	1.25
Group nursing, each additional patient, up to 3 .....	4.00
Hypodermic injections, patient's home ..	2.00
Hypodermic injections, nurse's home ..	1.50
Intravenous on hourly basis.	
Hourly nursing, 1st hour or part thereof ..	3.50
Subsequent hours to 4 hours, each .....	1.25
Over 4 hrs., charge for an 8 hour day.	
12-hour duty, when unavoidable only ..	15.00
20-hour duty, when unavoidable only ..	18.00
Contageous, alcoholic, mental, 8-hour ..	15.00
Obstetrical cases, extra charge for care of infant .....	2.00

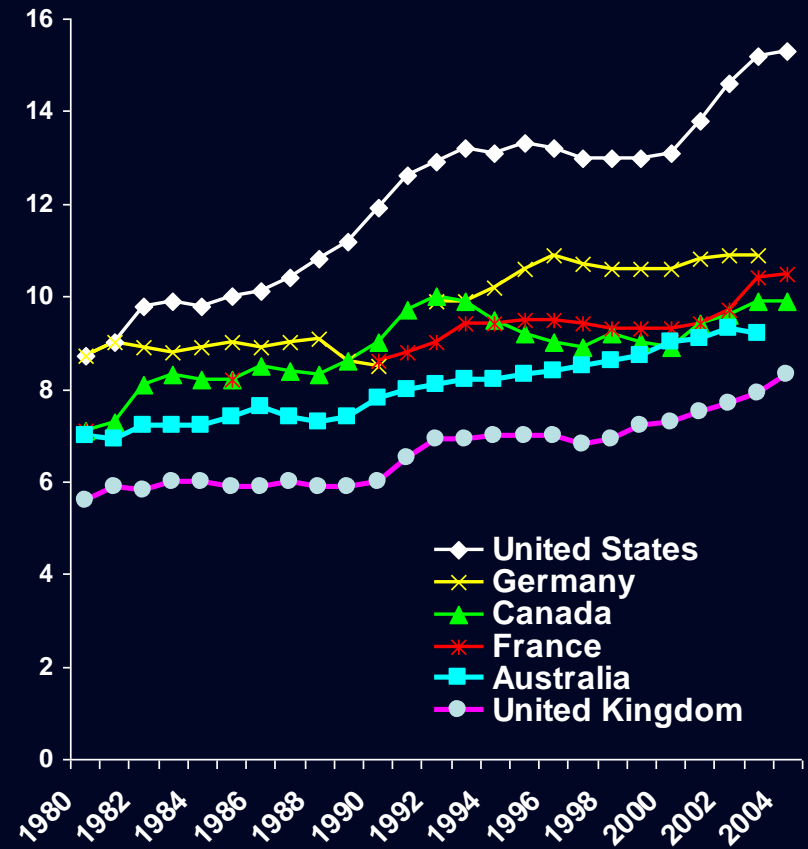
A nurse called on duty for a day's duty, whose day is not completed because of death, or other reason, shall be paid for a full day, unless she is able to secure another case for that day.

# International Comparison of Spending on Health

Avg. spending on health per capita

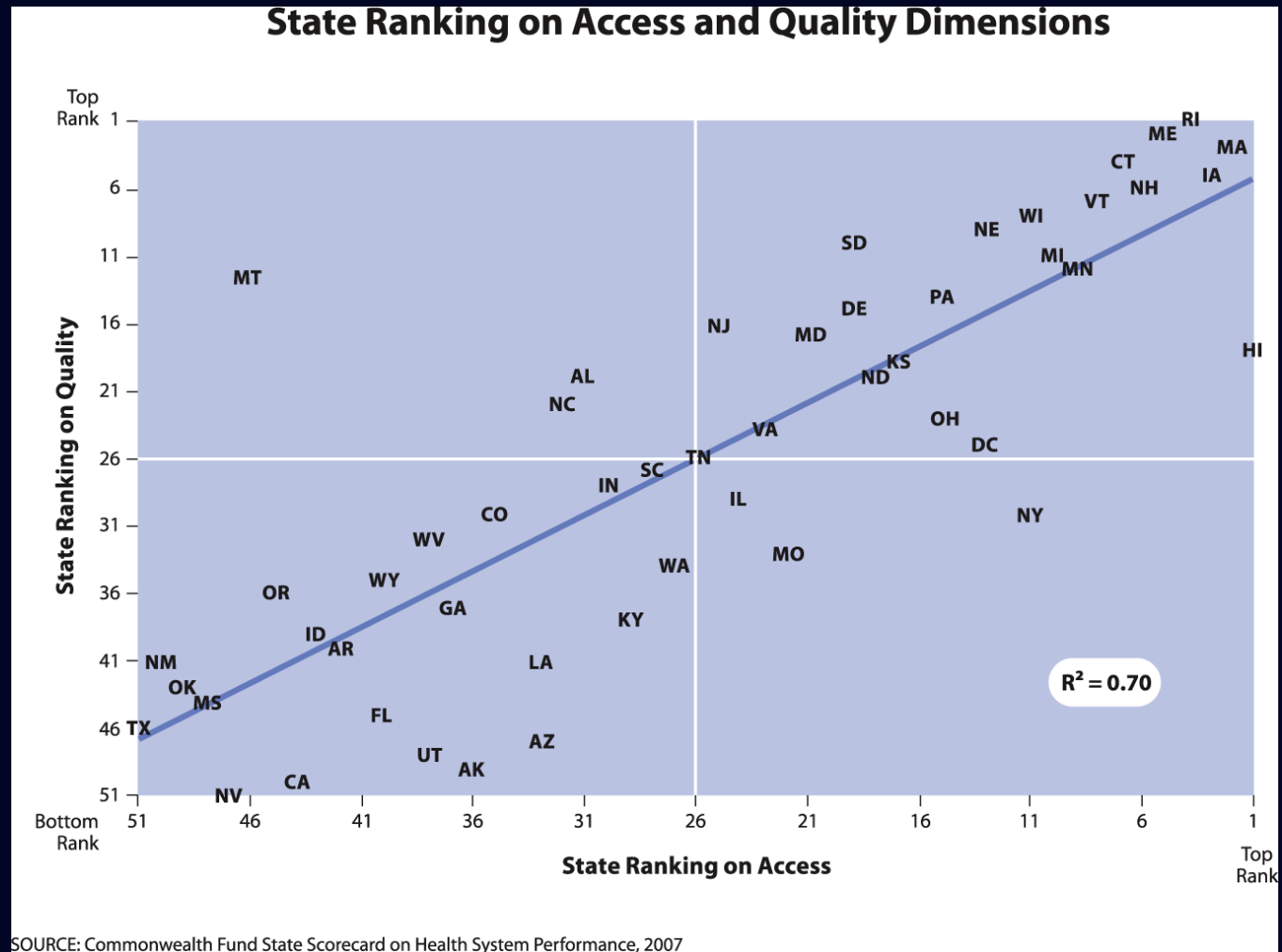


Total expenditures on health as % of GDP

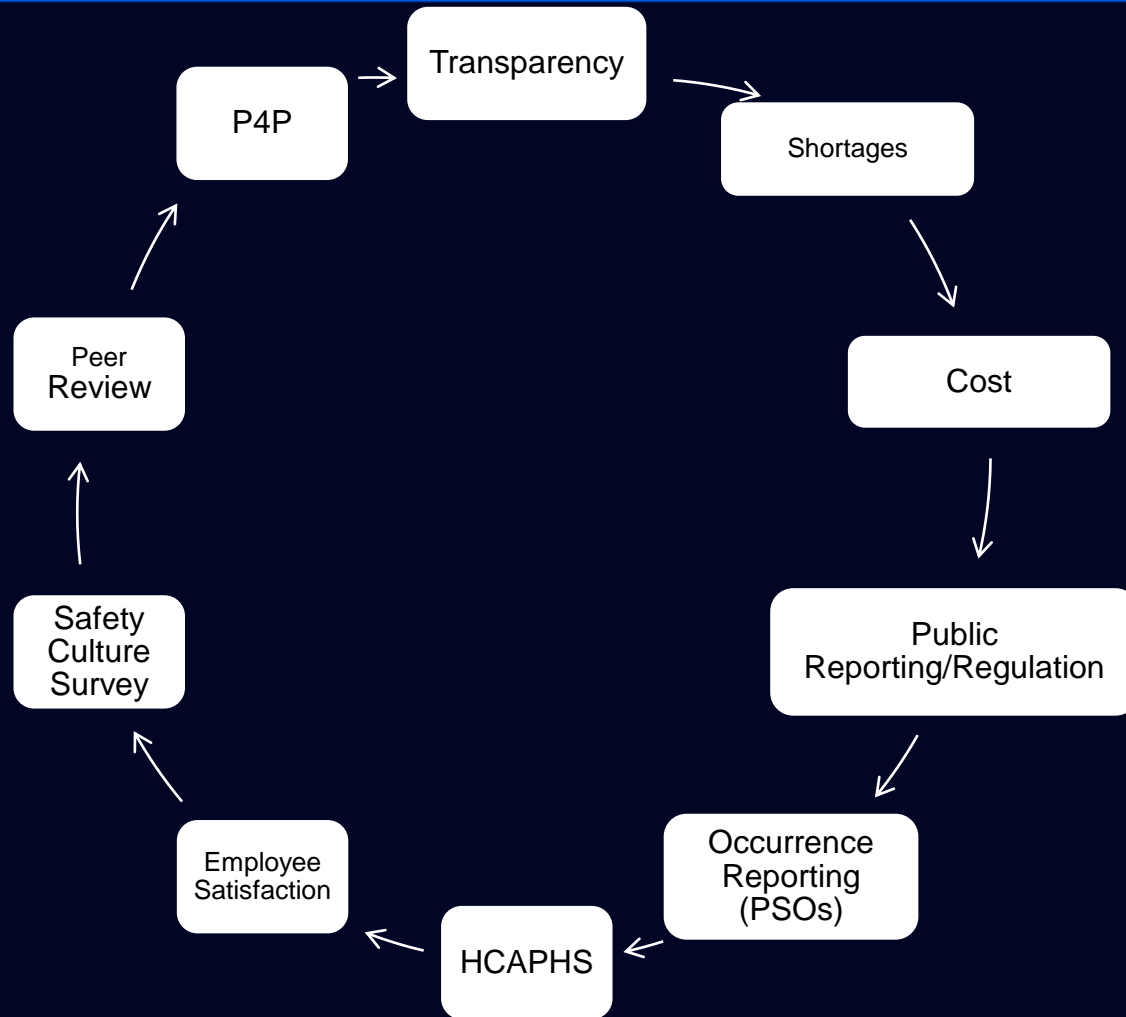


Source: Commonwealth Fund National Scorecard on US Health System Performance, 2006

# State Ranking on Access and Quality



# Current Reality



# Public Access and Transparency

U.S. Department of Health & Human Services

**HHS.gov**

Improving the health, safety, and well-being of America

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**Hospital Compare - A quality tool for adults, including people with Medicare**

[Help](#) [Glossary](#) [Resources](#)

[Medicare.gov](#) | [Use Larger Font](#) | [E-mail This Page](#)

## Find and Compare Hospitals

Welcome to Hospital Compare. In this tool you will find information on how well hospitals care for patients with certain [medical conditions or surgical procedures](#), and results from a survey of patients about the quality of care they received during a recent hospital stay. This information will help you compare the quality of care hospitals provide. Talk to your doctor about this information to help you, your family and your friends make your best hospital care decisions.

Hospital Compare was created through the efforts of the Centers for Medicare & Medicaid Services (CMS), the Department of Health and Human Services, and other members of the [Hospital Quality Alliance: Improving Care Through Information \(HQA\)](#). The information on this website comes from hospitals that have agreed to submit quality information for Hospital Compare to make public.

[Find and Compare Hospitals](#)

## Additional Information

- [View Note to Hospitals](#)
- [Learn how to use the information from this site](#)
- [View a Hospital Checklist](#)
- [View a List of Hospital Compare Contact Information](#)
- [Download the Hospital Quality Alliance \(HQA\) database](#)

## Learn More

- **Hospital Process of Care Measures**  
See how often a hospital gives recommended treatments for certain conditions or procedures.  
[Learn More about Hospital Process of Care Measures](#)
- **Hospital Outcome of Care Measures**  
See the results of care or treatment for certain conditions or procedures.  
[Learn More about Hospital Outcome of Care Measures](#)
- **Survey of Patients' Hospital Experiences**  
See what hospital patients say about the care they received during a recent hospital stay.  
[Learn More about Patients' Hospital Experiences](#)
- **Medicare Payment and Volume**  
See how much Medicare paid hospitals on average for certain conditions or procedures. You can see the number of Medicare patients treated for certain conditions.  
[Learn More about Medicare Payment and Volume Information](#)
- **Information for Professionals**  
See more detailed information for professionals about the measures on this site.  
[Learn More detailed information about the measures on this site](#)

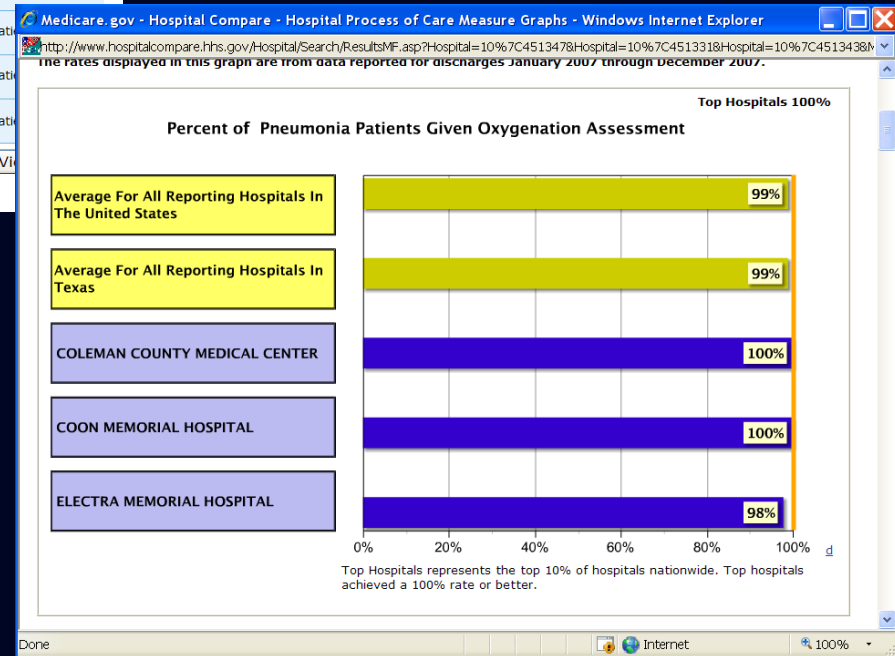
# Public Access and Transparency cont.

**Pneumonia Process of Care Measures**

Pneumonia is a serious lung infection that causes difficulty breathing, fever, cough and fatigue. These measures show some of the recommended treatments for pneumonia. [Click here](#) for more information about pneumonia.

Quality Measures	COLEMAN COUNTY MEDICAL CENTER <i>Critical Access</i>	COON MEMORIAL HOSPITAL <i>Critical Access</i>	ELECTRA MEMORIAL HOSPITAL <i>Critical Access</i>
<input type="checkbox"/> Select All	<input type="button" value="Reset Checkboxes"/> <input type="button" value="View Graphs"/> <input type="button" value="View Table"/>		
<input type="checkbox"/> Percent of Pneumonia Patients Given Oxygenation Assessment	100% of 97 patients	100% of 37 patients	98% of 57 patients
<input type="checkbox"/> Percent of Pneumonia Patients Assessed and Given Pneumococcal Vaccination	92% of 62 patients	67% of 33 patients	100% of 30 patients
<input type="checkbox"/> Percent of Pneumonia Patients Whose Initial Emergency Room Blood Culture Was Performed Prior To The Administration Of The First Hospital Dose Of Antibiotics	94% of 51 patients	100% of 8 patients <sup>1</sup>	83% of 18 patients <sup>1</sup>
<input type="checkbox"/> Percent of Pneumonia Patients Given Smoking Cessation Advice/Counseling	100% of 17 patients <sup>1</sup>	67% of 6 patients <sup>1</sup>	77% of 13 patients <sup>1</sup>
<input type="checkbox"/> Percent of Pneumonia Patients Given Initial Antibiotic(s) within 6 Hours After Arrival	98% of 48 patients	81% of 27 patients	94% of 31 patients
<input type="checkbox"/> Percent of Pneumonia Patients Given the Most Appropriate Initial Antibiotic(s)	89% of 45 patients	94% of 16 patients <sup>1</sup>	84% of 43 patients
<input type="checkbox"/> Percent of Pneumonia Patients Assessed and Given Influenza Vaccination	78% of 9 patients <sup>1</sup>	73% of 15 patients <sup>1</sup>	100% of 17 patients
<input type="checkbox"/> Select All	<input type="button" value="Reset Checkboxes"/> <input type="button" value="View Graphs"/> <input type="button" value="View Table"/>		

<sup>1</sup> The number of cases is too small (<25) to reliably tell how well a hospital is performing.



# It is not just CMS

The screenshot shows the redOrbit website interface. At the top left is the redOrbit logo. To its right are four red buttons: LOGIN, SIGN UP, EMAIL, and SUGGESTIONS. Further right is a Westin Hotels & Resorts advertisement with the text "together time" and "Book a Westin Delight in Family Package and get to know each other all over again." Below the advertisement is a navigation bar with categories: HOME, COMMUNITY, NEWS (highlighted), VIDEO, IMAGES, SPACE, SCIENCE, TECH, HEALTH, EDUCATION, FUN, SHOP, and SIT. Underneath the navigation bar are sub-categories: Space, Science, Technology, Health (highlighted), General, Sci-fi & Gaming, Oddities, International, Business, Politics, and Education. Below the sub-categories are social sharing icons for E-mail, Print, Comment, Font Size, Digg, del.icio.us, Discuss article, Buzz up!, and Stumble It!. The main content area features a news article with the following text:

## Blue Cross to Launch Website to Compare Hospital Quality Ratings

Posted on: Tuesday, 2 August 2005, 00:00 CDT

Aug. 2--With a few clicks of a computer mouse, consumers soon will be able to find out how well hospitals in Tennessee treat the most common ailments and injuries.

In a pioneering partnership with the state's hospital association, BlueCross BlueShield of Tennessee on Monday will launch a hospital quality rating on its Web site based on the most current and widespread data available. The ratings will show how hospitals compare for the average length of stay, mortality and readmission rates for 60 of the most common and frequent procedures and conditions on inpatient services. The Web site also displays how often each hospital treats patients with particular diagnoses.

"Whether you're purchasing a car or a home or seeking health care, knowledge is key to making a good decision," said Dr. Steve Coulter, president of government business and emerging markets for BlueCross. "The hospital quality comparison tool helps shed light on the information Tennesseans need to better understand and control their health care."

# It is not just performance....

The screenshot shows a web browser window displaying the HHS.gov website. The browser's address bar shows the URL "HCAHPS: Patients' Perspectives of Care S...". The website header includes the HHS.gov logo and the tagline "Improving the health, safety and well-being of America". Below the header is the CMS logo and the text "Centers for Medicare & Medicaid Services". A search bar is located on the right side of the header. The main navigation menu includes links for Home, Medicare, Medicaid, SCHIP, About CMS, Regulations & Guidance, Research, Statistics, Data & Systems, Outreach & Education, and Tools. A secondary navigation menu includes links for People with Medicare & Medicaid, Questions, Careers, Newsroom, Contact CMS, Acronyms, Help, Email, and Print. The breadcrumb trail shows the path: CMS Home > Medicare > Hospital Quality Initiatives > HCAHPS: Patients' Perspectives of Care Survey. The main content area is divided into two columns. The left column is titled "Hospital Quality Initiatives" and contains a list of links: Overview, Highlights, Reporting Hospital Quality Data for Annual Payment Update, Hospital Compare, Hospital Compare Ads, Inpatient Measures, Process of Care Measures, Outcome Measures (Mortality), HCAHPS: Patients' Perspectives of Care Survey (highlighted), Medicare Payment and Volume, Hospital Quality Alliance, Outpatient Measures, Premier Hospital Quality Incentive Demonstration, Premier Hospital Historical Data, and Hospital Archives. The right column is titled "HCAHPS: Patients' Perspectives of Care Survey" and contains three paragraphs of text. The first paragraph defines the survey as a standardized instrument for measuring patient perspectives. The second paragraph explains the need for a standard approach to support consumer choice. The third paragraph outlines the survey's goals and its composition of 27 items. A final paragraph states that hospitals implement the survey under the auspices of the Hospital Quality Alliance (HQA).

**Hospital Quality Initiatives**

- » Overview
- » Highlights
- » Reporting Hospital Quality Data for Annual Payment Update
- » Hospital Compare
- » Hospital Compare Ads
- » Inpatient Measures
- » Process of Care Measures
- » Outcome Measures (Mortality )
- » **HCAHPS: Patients' Perspectives of Care Survey**
- » Medicare Payment and Volume
- » Hospital Quality Alliance
- » Outpatient Measures
- » Premier Hospital Quality Incentive Demonstration
- » Premier Hospital Historical Data
- » Hospital Archives

**HCAHPS: Patients' Perspectives of Care Survey**

The CAHPS Hospital Survey, also known as Hospital CAHPS or **HCAHPS**, is a standardized survey instrument and data collection methodology for measuring patients' perspectives of hospital care.

While many hospitals collect information on patient satisfaction, there is no national standard for collecting or publicly reporting this information that would enable valid comparisons to be made across all hospitals. In order to make "apples to apples" comparisons to support consumer choice, it is necessary to introduce a standard measurement approach. HCAHPS is a core set of questions that can be combined with customized, hospital-specific items to produce information that complements the data hospitals currently collect to support internal customer service and quality-related activities.

Three broad goals have shaped the HCAHPS survey. First, the survey is designed to produce comparable data on patients' perspectives of care that allows objective and meaningful comparisons among hospitals on topics that are important to consumers. Second, public reporting of the survey results is designed to create incentives for hospitals to improve quality of care. Third, public reporting will serve to enhance public accountability in health care by increasing the transparency of the quality of hospital care provided in return for the public investment. With these goals in mind, the HCAHPS project has taken substantial steps to assure that the survey is credible, useful, and practical. This methodology and the information it generates will be made available to the public.

The HCAHPS survey is composed of 27 items: 18 substantive items that encompass critical aspects of the hospital experience (communication with doctors, communication with nurses, responsiveness of hospital staff, cleanliness and quietness of hospital environment, pain management, communication about medicines, discharge information, overall rating of hospital, and recommendation of hospital); four items to skip patients to appropriate questions; three items to adjust for the mix of patients across hospitals; and two items to support congressionally-mandated reports.

Hospitals implement HCAHPS under the auspices of the Hospital Quality Alliance (HQA), a private/public partnership that includes

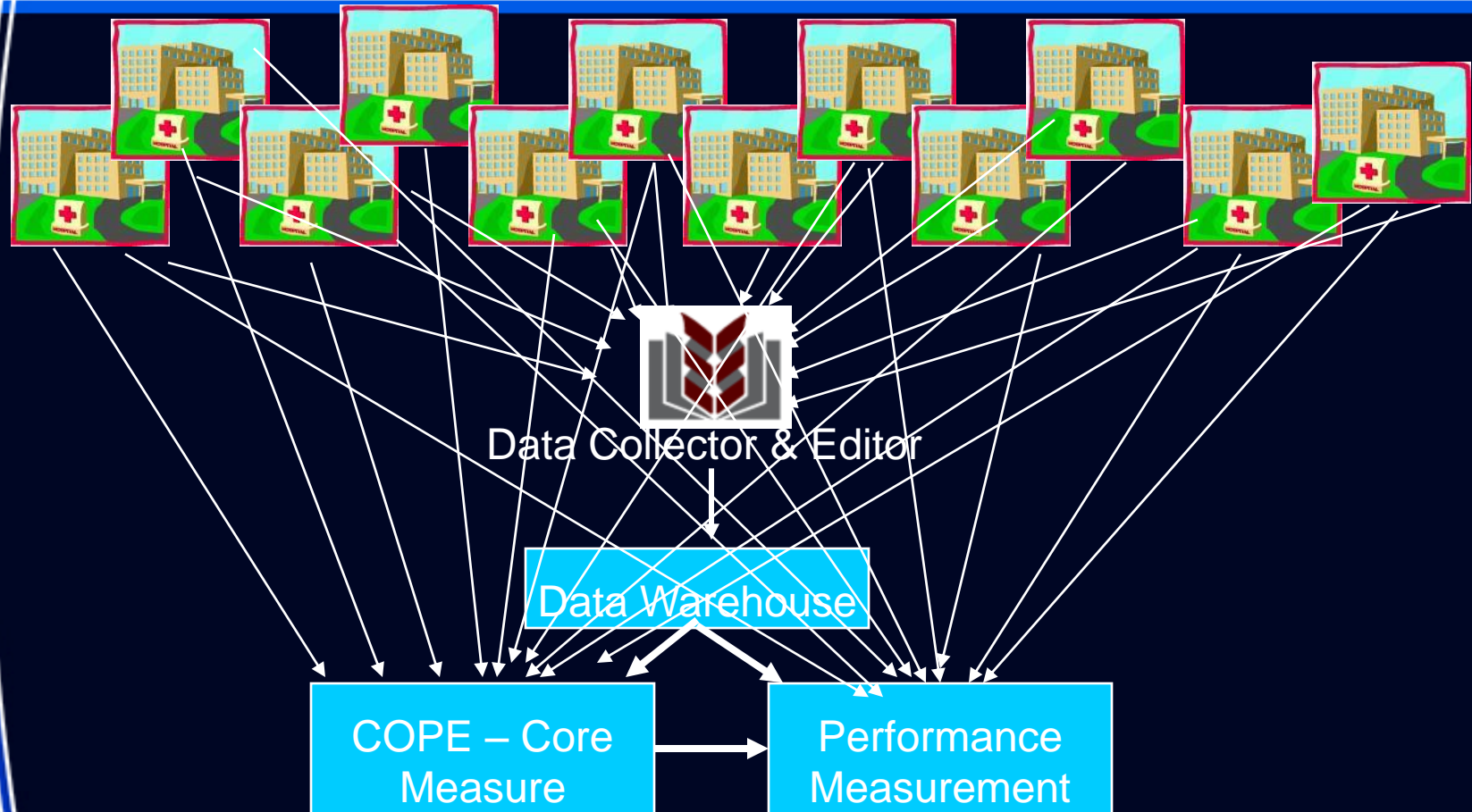


How do we get to where we  
need to be?

# Healthcare Data Integration - HDI

- Tool includes:
  - State Reporting
  - Core Measure Reporting and Identification of Records to be Reviewed
  - Performance Measurement
    - Benchmarking: Type, Size, State, Multi-state
    - Patient Level Information
    - Provider Level Information
  - HDI is powered by QuadraMed
- TDRA (ORCA) grant discount

# Process Vision



# Data Collection Editor

- Assist hospitals with data integrity before placing in data repository
  - UB data must meet the Texas state edits
  - Enable easy and timely clean up of records
  - More timely billing-cleaner claims
  - Data available for transmission

# Web-based Data Collection Editor

User logs on to system and selects claim file(s) for loading.

As each claim is loaded into the QuadraMed Transactional Database, the edits are applied to each field. Claims that pass all the edits are marked **valid**, while claims with one or more failures are marked **error**.

All valid claims are included in the next data sweep for processing into the warehouse. Changes made to a claim are re-edited and, if still valid, re-queued for submission.

Valid claims are swept, grouped into DRGs/APCs, and loaded into the warehouse.

Claim File

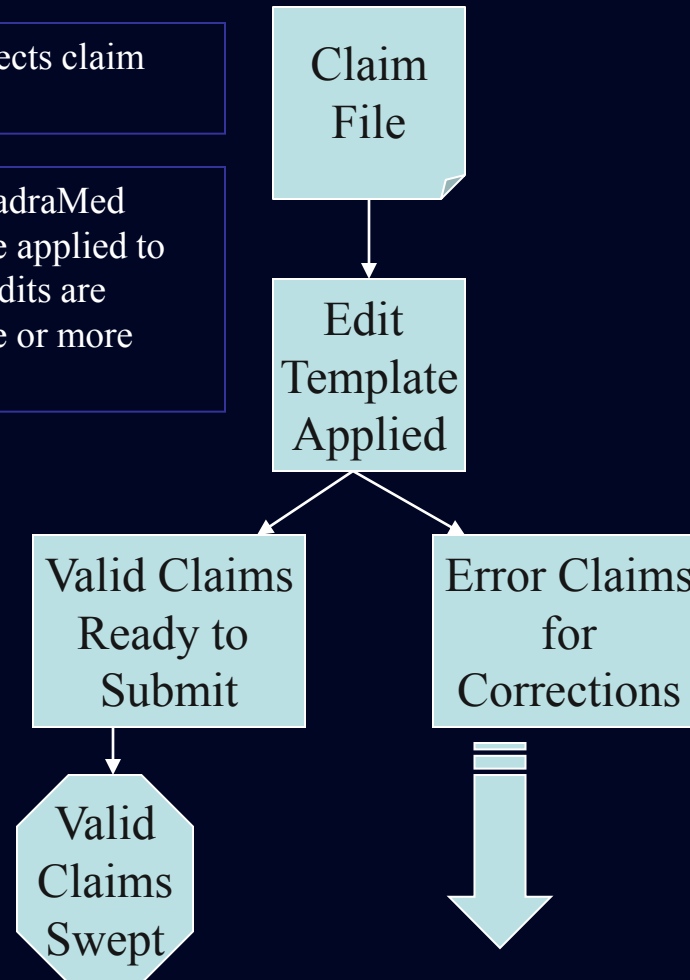
Edit Template Applied

Valid Claims Ready to Submit

Error Claims for Corrections

Valid Claims Swept

Error claims are held out of the sweep until all fields pass the edits. Users can run reports to determine all edit failures on a claim.



# State Data Collection Program

Powered by QuadraMed

Log Off    QEDIT    Data Access    Administration

Q Original Error: The Patient Birth Date must be less than or equal to the Admission Date  Auto Correct [Expand All](#) [Collapse All](#)

Provider ID: ZZZ Test	Pat Name: JONES, JAMES	Pat Cntl #: 100000000000000002	Bill Type
Provider #: 3199990	Edit Set:	Pat Ctrl #: 100000000000000002	Med Rec #: 00000012346   0111
Provider NPI:	Status: ERROR	Claim ID: QMD093600002	I/O Indicator: I Statement Dates: From 1/1/2008 Thru 1/7/2008 Discharge Date: 1/7/2008
		Batch #: QMD0936001	

Patient Name			Patient Address	Street:	101 MAIN ST
Last Name	First Name	Middle Initial	City: ANYTOWN	State: NJ	Zip: 072010000   Country:
JONES	JAMES				

Birth Date	Gender	Admission			Disch Hour	Disch Status	Accident State	Patient SSN	Race	Ethnicity	Marital Status	Mother's Med Rec No	Pri Lang
Date		Date	HR	Type	PtO								
12/1/1978	M		11	1	7	12	01		987654321	21063	21865		

Condition Codes, Occurrence Codes, Value Codes (Click - to hide this section)

Condition Codes	Occurrence Codes				Occurrence Span Codes						Value Codes	
	Code	Date	Code	Date	Code	From	Through	Code	From	Through	Code	Amount
	11	1/2/2008									01	4450.00
											80	15.00

- Hide the Menu Panel
- Menu    Patients    Errors
- | Claim ID                     | Error Description   |
|------------------------------|---|
| <a href="#">QMD093600002</a> | <a href="#">The Patient Birth Date must be less than or equal to the Admission Date</a> |
| <a href="#">QMD093600002</a> | <a href="#">Patients Primary Language Spoken missing</a>                                |
| <a href="#">QMD093600002</a> | <a href="#">Admission Date invalid</a>  |
| <a href="#">QMD093600002</a> | <a href="#">At least one Value Code must contain the birthweight on a newborn claim</a> |

# Measures Offered

- AMI – CMS/TJC
- HF – CMS/TJC
- Pneumonia – CMS/TJC
- SCIP – CMS/TJC
- Pregnancy & Related Procedures – TJC
- Stroke Measures – TJC
- HBIPS- IP Psychiatric test Measures – TJC
- Children's Asthma Conditions -TJC
- Hospital Outpatient Quality Reporting Data

# Core Measures Process

- Use the billing data cleansed through this collection process
- Identify patients that meet measure population
- Available for Quality Directors for abstraction within 24 hours of passing edits
- Error reports are updated daily on patients submitted
- Transmission to regulatory/accrediting agencies:  
CMS, TJC

# Sample of Dashboard/Score Cards

COPE™: Monthly National Hospital Quality Measures Outcomes  
By Provider Number

Core Measure Description	Jan			Feb			Mar			Qtr		
	Jan Num	Jan Denom	Jan Actual Rate%	Feb Num	Feb Denom	Feb Actual Rate%	Mar Num	Mar Denom	Mar Actual Rate%	Qtr Num	Qtr Denom	Qtr Actual Rate%
HEART FAILURE												
(HF-1) Discharge instructions	26	47	55.3	11	22	50.0	0	0		37	69	53.6
(HF-1a) Activity	47	47	100.0	22	22	100.0	0	0		69	69	100.0
(HF-1b) Diet	47	47	100.0	22	22	100.0	0	0		69	69	100.0
(HF-1c) Follow Up	46	47	97.9	22	22	100.0	0	0		68	69	98.6
(HF-1d) Medication	28	47	59.6	14	22	63.6	0	0		42	69	60.9
(HF-1e) Symptoms	46	47	97.9	21	22	95.5	0	0		67	69	97.1
(HF-1f) Weight	42	47	89.4	19	22	86.4	0	0		61	69	88.4
(HF-2) LVF assessment	62	62	100.0	27	27	100.0	0	0		89	89	100.0
(HF-3) ACEI/ARB for LVSD	25	27	92.6	15	15	100.0	0	0		40	42	95.2
(HF-4) Adult smoking cessation advice/counseling	3	3	100.0	1	1	100.0	0	0		4	4	100.0
HF Composite Score	116	139	83.5	54	65	83.1	0	0		170	204	83.3
HF Appropriate Care Score	40	62	64.5	16	27	59.3	0	0		56	89	62.9
HF CMS ACM Score	60	62	96.8	27	27	100.0	0	0		87	89	97.8

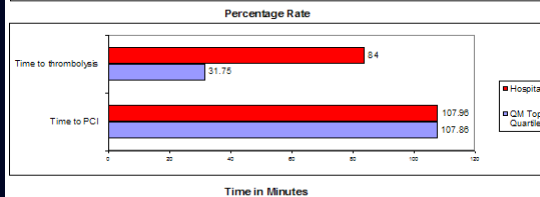
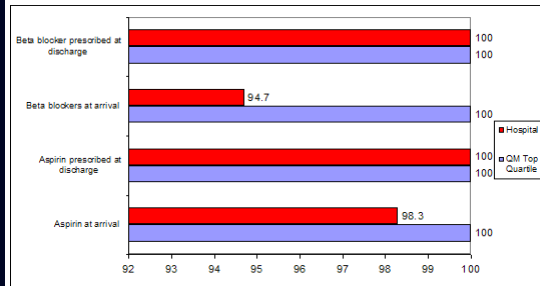
Patients with Prophylactic Antibiotic given longer than recommended after End of Surgery \*\*  
COPE™: Supplemental Data Integrity Test  
Measure Set: SIP\_3

Patient Number	Patient Name	Medical Record	Discharge Date	Time (min.)
00000000020	HICKS, FARA	000000061	01/13/2006	4,535
00000000007	ELECTRA, CARMEN	000000080	01/16/2006	4,310
00000000040	LE, CHA	000000086	02/20/2006	16,975
00000000061	MASTRO, CHRISTINE	000000087	03/22/2006	7,490

Sample Reports  
JCAHO ID: 0000  
Report Date: 10/31/2007

## Hospital to Top Quartile Performance Quarterly Comparative Report Q4 2005

### Acute Myocardial Infarction



Note: A rate of zero indicates a measure for which no data was collected.

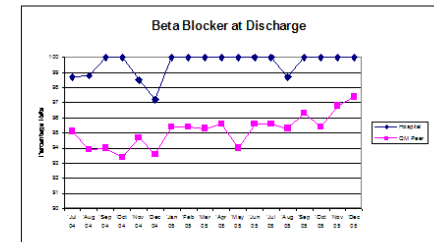
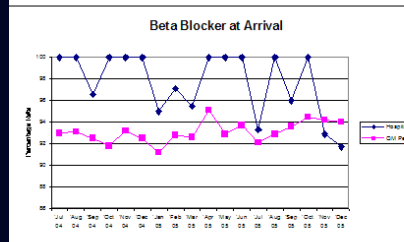
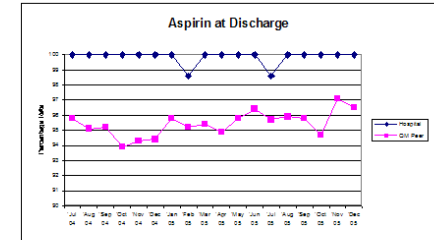
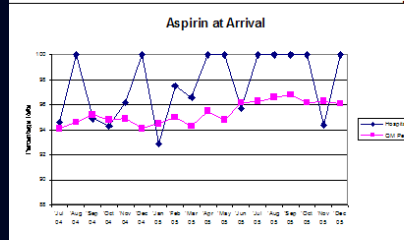
COPE: TOP Quartile Comparative Graph

QuadraMed Proprietary Format

Sample Reporting  
JCAHO ID: 0000  
Report Date: 10/19/00

If graph contains no data the measure was not in effect prior to 07/2004

### Acute Myocardial Infarction



COPE: Core Measure Graph

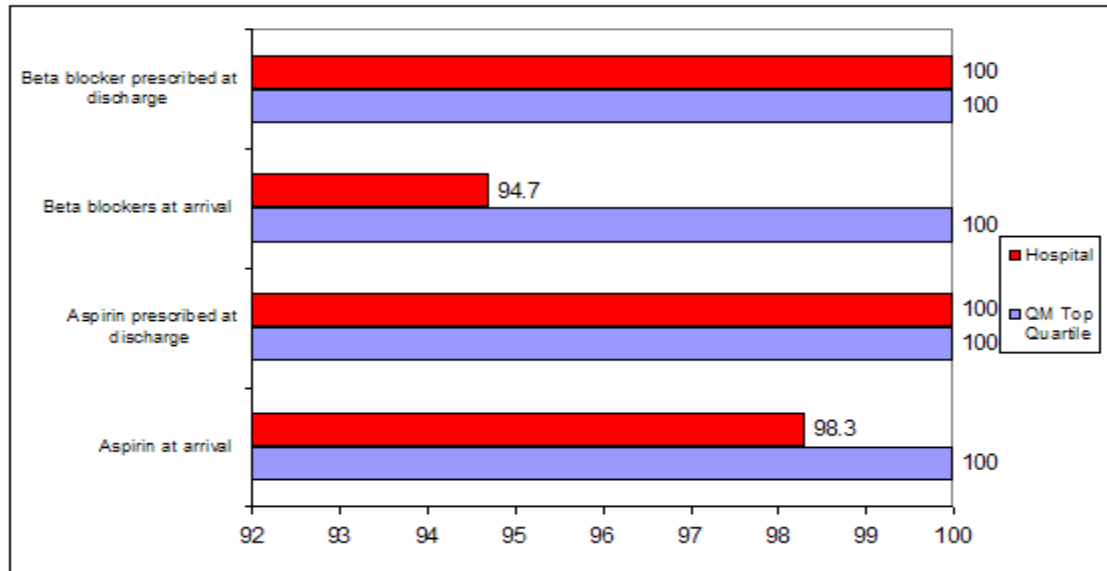
QuadraMed Proprietary Format

# Sample of Bar Chart and Benchmark by Measure

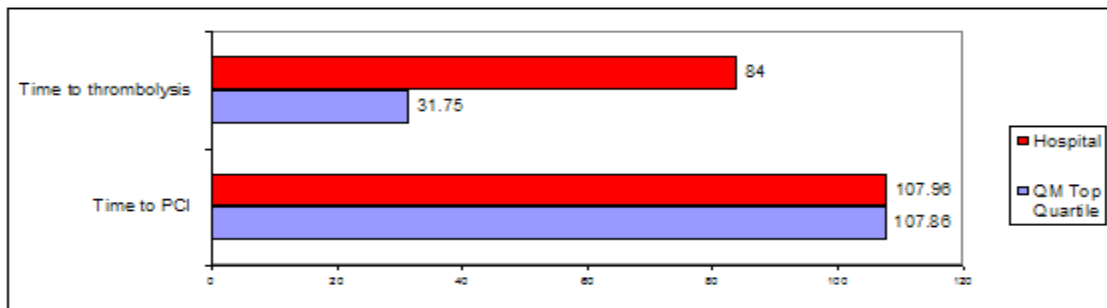
Sample Reports  
 JC ID: 0000  
 Report Date: 9/8/2008

## Hospital to Top Quartile Performance Quarterly Comparative Report Q4 2005

### Acute Myocardial Infarction



Percentage Rate



Time in Minutes

Note: A rate of zero indicates a measure for which no data was collected.

# Enhancement – Responsible Clinician

Patient Name: **FIRSTNAME M LASTNAME**      Patient Control #: **222222222**  
 Admission Date: **04/01/2009**      Facility ID#: **3109990**  
 Discharge Date: **04/04/2009**      Point of Origin: **7**  
 Discharge Status: **03**      Medicare:

[View Patient Abstract](#)  
       

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**NOTES**    Add new note    Print Notes

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**OUTCOMES BY MEASURE**

Measure	Outcome	Category	Explanation
AMI-1: Aspirin at arrival	✓	E	Measure Compliant
AMI-2: Aspirin prescribed at discharge	✓	E	Measure Compliant
AMI-3: ACEI or ARB for LVSD	✓	E	ACEI Prescribed at discharge answered yes - Measure Compliant
AMI-4: Adult smoking cessation advice/counseling	✓	E	Measure Compliant
AMI-5: Beta blocker prescribed at discharge	✓	E	Measure Compliant
AMI-7: Median time to fibrinolysis	N/A	D	Fibrinolytic Administration Date/Time - Arrival Date/Time Less then 30
AMI-7a: Fibrinolytic therapy within 30 min. of hosp. arrival	✓	E	Fibrinolytic Administration Date/Time - Arrival Date/Time Less then 30
AMI-8: Median time to primary PCI	⊘	B	Fibrinolytic Administration received excluded
AMI-8a: Primary PCI within 90 min. of hospital arrival	⊘	B	Fibrinolytic Administration received excluded
AMI-9: Inpatient mortality	✓	D	Patients with Discharge Status of 01,03,04,05,06,07,61,62,63,64,65,70

Overall Appropriate Care result: **✓ (Pass)**

ABREU, BOBBY - MA33333  
 ALAN, JEREMEY C DPM - 632  
 ALAN, STEVEN D DO - 326  
 BARBER, MARIAN MD - 824  
 BILTON, TODD MD - 859  
 BOOTH, MICHELLE DO - 627  
 BOTTES, JAMES DO - 353  
 BURNES, AME M MD - 575  
 BURTON, WILLIAM MD - 506  
 CABRERA, MELKY - MA99999  
 CANO, ROBINSON - MA88888  
 CHAMY, VJ MD - 352  
 DAMON, JOHNNY - MA11111  
 DAVIS, WILLIAM MD - 549  
 GREENE, KEVIN F DO - 3286  
 HAN, ADAM MD - 40  
 HAN, ARMEN S MD - 45  
 HAN, MILDRED MD - 331  
 HARI, STAN MD - 54  
 HARRY, BETH A MD - 564  
 HESTER, HAROLD MD - 608  
 IRCAL, MICHAEL MD - 607  
 IRCAL, ZEFREN MD - 606  
 JETER, DEREK INT INTE - MA22222  
 JOHNSON, ANDREW MD - 750  
 JONES, DAVIC MD - 655  
 KARMA, CHARLES DO - 598  
 KHAT, JOHN T MD - 362  
 KLEIN, TERRY DO - 531

# Enhancement – Responsible Clinician

Patient Name: **FIRSTNAME M LASTNAME**      Patient Control #: 222222222  
 Admission Date: 04/01/2009      Facility ID#: 3109990  
 Discharge Date: 04/04/2009      Point of Origin: 7  
 Discharge Status: 03      Medicare:

[View Patient Abstract](#)

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**NOTES**    Add new note    Print Notes

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**Overall Appropriate Care result: ✔ (Pass)**

Measure	Outcome	Category	Explanation	Responsible Clinician
AMI-1: Aspirin at arrival	✔	E	Measure Compliant	ALAN, JEREMY C DPM - 632
AMI-2: Aspirin prescribed at discharge	✔	E	Measure Compliant	ALAN, JEREMY C DPM - 632
AMI-3: ACEI or ARB for LVSD	✔	E	ACEI Prescribed at discharge answered yes - Measure Compliant	Same as above
AMI-4: Adult smoking cessation advice/counseling	✔	E	Measure Compliant	
AMI-5: Beta blocker prescribed at discharge	✔	E	Measure Compliant	
AMI-7: Median time to fibrinolysis	N/A	D	Fibrinolytic Administration Date/Time - Arrival Date/Time Less then 30	
AMI-7a: Fibrinolytic therapy within 30 min. of hosp. arrival	✔	E	Fibrinolytic Administration Date/Time - Arrival Date/Time Less then 30	
AMI-8: Median time to primary PCI	⊘	B	Fibrinolytic Administration received excluded	
AMI-8a: Primary PCI within 90 min. of hospital arrival	⊘	B	Fibrinolytic Administration received excluded	
AMI-9: Inpatient mortality	✔	D	Patients with Discharge Status of 01,03,04,05,06,07,61,62,63,64,65,70	

# Advantages

- Capability to abstract timely
- Reporting is concurrent
- Responsive support
- Performs submissions to other regulatory/accrediting agencies
- Opportunity for individual, state, and national benchmarking
- Ease of use
- Report Card capability

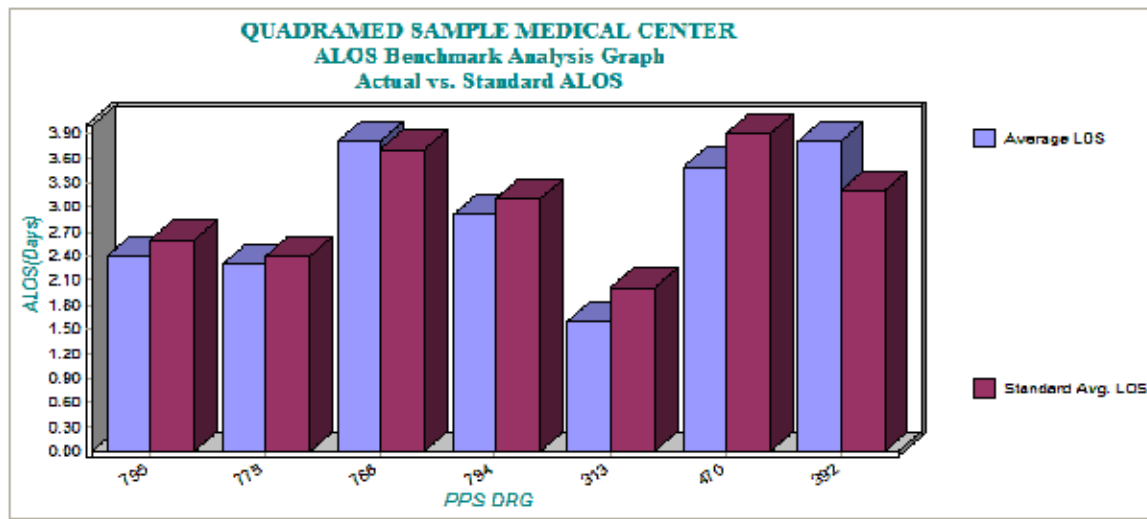


# Performance Measurement

- **The Performance Measurement component is a powerful decision support tool designed specifically for hospitals to dramatically improve overall decision support reporting and analysis. The system allows users to analyze detailed charge, utilization, and outcomes data across all physicians, product lines, payers, patients, and entities.**
- **Clinical Features:**
  - Physician Profiles (Report Card/Re-credentialing, OPPE)
  - Clinical Benchmarking (LOS)
  - Risk and Severity Adjustment
  - NHQM-Core Measure Reporting
  - Resource Utilization
- **Financial Features:**
  - Financial Benchmarking (Charge)
  - Detailed Charge Analysis
  - High ROI
- **User-Friendly Features:**
  - Intuitive Design
  - Windows Based

# Performance Measurement Offers

- Robust Reporting & Benchmarking
  - Aggregate database containing 50% of nation wide discharges
  - Hospitals can select facilities to benchmark against
- Strategic Planning
  - Identification of strengths
  - Identification of areas of improvement
- Drill down capability on own hospital specific info
  - Physician, payer, ICD-9
  - Charges, patients, LOS, readmissions



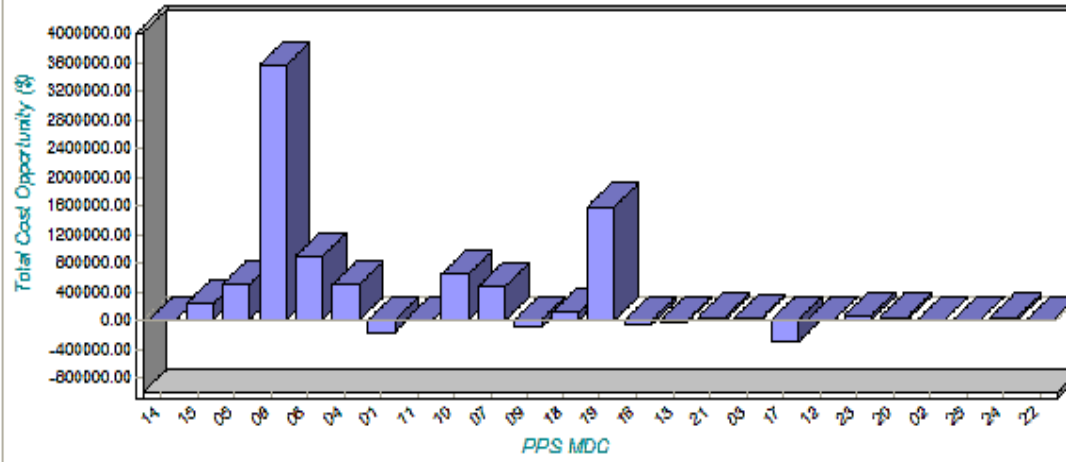
**ALOS Benchmark Analysis**  
**QUADRAMED SAMPLE MEDICAL CENTER**  
DRG Sorted By Cases Descending



**BENCHMARK: LOS - 2006 TEACHING STANDARD SEVR ADJ**  
SEVERITY UTILIZED: 3M™ APR™ DRG CLASSIFICATION SYSTEM  
RESOURCE ANALYSIS PATIENTS  
INPATIENT ONLY  
EXCLUDE S - SAME DAY  
INCLUDE Hospital Division 0000001 - QUADRAMED GENERAL HOSP  
DISCHARGE DATE RANGE: 01/11/2007 TO 01/10/2008  
Minimum Cases of 200

PPS DRG	Total Days	Total Cases	ALOS	Std ALOS	ALOS Oppor'ty	Total Days Oppor'ty
795 - Normal newborn	3,372	1,398	2.4	2.6	-0.2	-279.6
775 - Vaginal delivery w/o compli	2,680	1,186	2.3	2.4	-0.1	-118.6
766 - Cesarean section w/o CC/A	1,798	468	3.8	3.7	0.1	46.8
794 - Neonate w other significa	1,246	428	2.9	3.1	-0.2	-85.6
313 - Chest pain	657	413	1.6	2.0	-0.4	-165.2
470 - Major joint replacement or i	1,421	402	3.5	3.9	-0.4	-160.8
392 - Esophagitis, gastroent & m	1,285	336	3.8	3.2	0.6	201.6
<b>Report Totals</b>	<b>12,459</b>	<b>4,631</b>	<b>2.7</b>	<b>2.8</b>	<b>-0.1</b>	<b>-463.1</b>

**QUADRAMED SAMPLE MEDICAL CENTER**  
**Inpatient Standard Resource Consumption Graph**  
**Total Cost Opportunity from Standard**



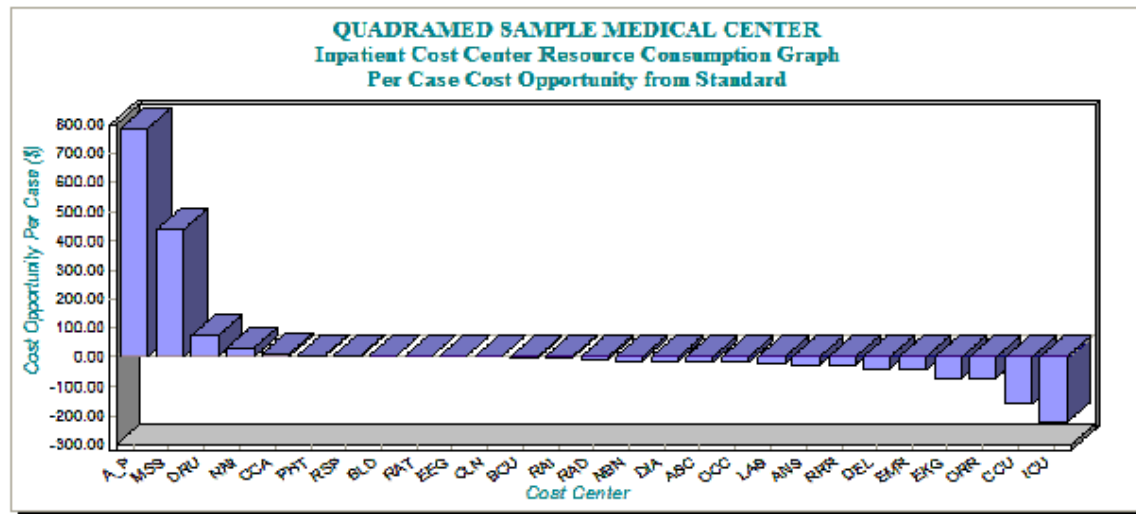
**Inpatient Standard Resource Consumption**  
**QUADRAMED SAMPLE MEDICAL CENTER**  
 PPS MDC Sorted By Total Cases Descending



Data: 01/11/2007 - 01/10/2008

**BENCHMARK: COST AND LOS - 2006 TEACHING STANDARD SEVR ADJ**  
**SEVERITY UTILIZED: 3M™ APR™ DRG CLASSIFICATION SYSTEM**  
**RESOURCE ANALYSIS PATIENTS**  
**INPATIENT ONLY**  
**INCLUDE Hospital Division 0000001 - QUADRAMED GENERAL HOSP**  
**DISCHARGE DATE RANGE: 01/11/2007 TO 01/10/2008**  
**INCLUDE Re-Admission Days Is <= 30**

PPS MDC	Total Days	Total Cases	Cases % to Total	ALOS	3M STD ALOS	ALOS Oppor'ty	Total Days Oppor'ty	Tot Cases	Actual DPC Cost Per Case	3M STD DPC Cost Per Case	DPC Cost Oppor'ty Per Case (\$)	Total Cost Oppor'ty (\$)
14 - PREGNANCY, CHILDBIRTH & THE PUERPE	5,715	2,075	15.8	2.8	2.9	-0.1	-207.5	2,075	1,985	1,980	5	10,375
15 - NEWBORN & NEOS WITH COND ORIG PEF	6,006	2,031	15.5	3.0	3.2	-0.2	-406.2	2,031	1,398	1,289	109	221,379
05 - D&D OF THE CIRCULATORY SYSTEM	6,748	1,872	14.3	3.6	4.1	-0.5	-936.0	1,872	4,530	4,260	270	505,440
08 - D&D MUSCULOSKELTL SYSTEM CONNEC	5,251	1,350	10.3	3.9	4.2	-0.3	-405.0	1,350	9,420	6,786	2,634	3,555,900
06 - D&D OF THE DIGESTIVE SYSTEM	6,417	1,328	10.1	4.8	5.0	-0.2	-265.6	1,328	5,229	4,562	667	885,776
04 - D&D OF THE RESPIRATORY SYSTEM	5,210	891	6.8	5.8	6.2	-0.4	-356.4	891	5,909	5,341	568	506,088
01 - D&D OF THE NERVOUS SYSTEM	3,487	713	5.4	4.9	5.3	-0.4	-285.2	713	5,005	5,220	-215	-153,295
11 - D&D OF THE KIDNEY & URINARY TRACT	2,149	468	3.6	4.6	5.0	-0.4	-187.2	468	4,229	4,221	8	3,744
10 - ENDOCRINE, NUTRITIONAL & METABOLIC	1,755	454	3.5	3.9	4.2	-0.3	-136.2	454	6,156	4,750	1,406	638,324
07 - D&D OF HEPATOBILIARY SYSTEM & PANC	1,845	316	2.4	5.8	5.2	0.6	189.6	316	6,341	4,818	1,523	481,268
09 - D&D SKIN, SUBCUTANEOUS TISSUE & BRE	1,126	300	2.3	3.8	4.7	-0.9	-270.0	300	3,330	3,656	-326	-97,800
18 - INFECTIOUS & PARASITIC DISEASES	1,831	262	2.0	7.0	7.4	-0.4	-104.8	262	6,848	6,412	436	114,232



**Inpatient Cost Center Resource Consumption**  
**QUADRAMED SAMPLE MEDICAL CENTER**  
**Cost Center Sorted By DPC Cost Oppor'ty Per Case (\$) Descending**

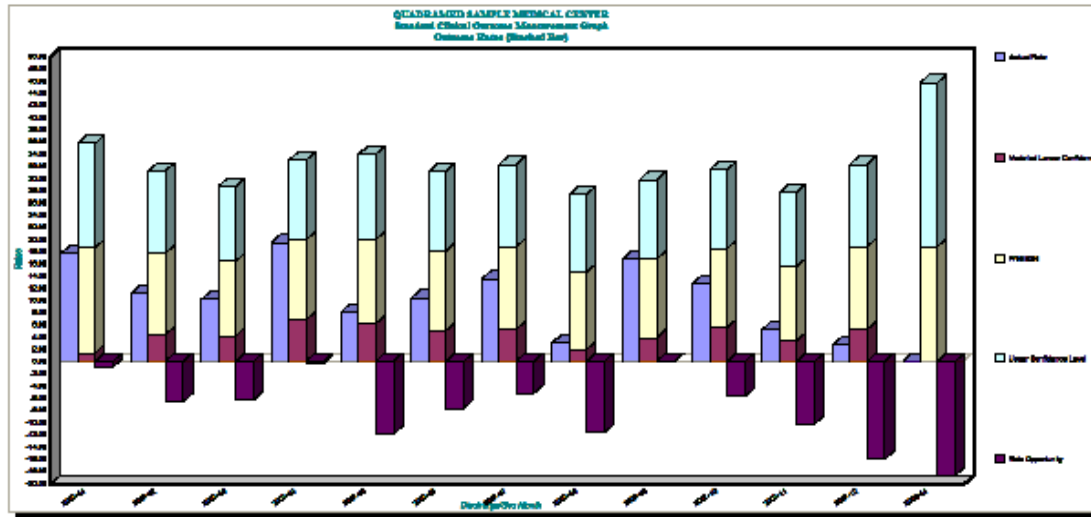


**BENCHMARK: COST - 2006 TEACHING STANDARD**  
**SEVERITY UTILIZED: 3M™ APR™ DRG CLASSIFICATION SYSTEM**  
**RESOURCE ANALYSIS PATIENTS**  
**INPATIENT ONLY**  
**INCLUDE Hospital Division 0000001 - QUADRAMED GENERAL HOSP**  
**DISCHARGE DATE RANGE: 01/11/2007 TO 01/10/2008**

Cost Center	Total Actual DPC Cost	Total Standard DPC Cost	Total Cost Oppor'ty (\$)	Actual DPC Cost Per Case	Standard DPC Cost Per Case	DPC Cost Oppor'ty Per Case (\$)	% Opportunity Per Case
A_P - ADULTS & PEDIATRICS	24,323,759	13,433,926	10,889,833	1,759	971	788	81.15
MSS - MED/SURG SUPPLIES	14,270,297	8,191,552	6,078,745	1,032	592	440	74.32
DRU - DRUGS/IV THERAPY	5,556,284	4,509,806	1,046,478	402	326	76	23.31
NNI - NEONATAL ICU	1,157,663	895,409	462,254	84	50	34	68.00
CCA - CARDIAC CATH	642,894	453,751	189,143	46	33	13	39.39
PHT - PHYSICAL THERAPY	599,355	510,369	88,986	43	37	6	16.22
RSP - RESPIRATORY THERAP	1,000,227	906,629	93,598	72	66	6	9.09
BLD - BLOOD BANK	1,051,182	1,027,252	23,930	76	74	2	2.70
RAT - RADIOLOGY - THERAPE	96,106	70,016	26,090	7	5	2	40.00
EEG - ELECTROENCEPHALOG	108,663	101,547	7,116	8	7	1	14.29
CLN - CLINIC	16,485	16,485	0	1	1	0	0.00
BCU - BURN CARE UNIT	0	19,540	-19,540	0	1	-1	-100.00
RAI - RADIOISOTOPE	298,283	314,021	-15,738	22	23	-1	-4.35

DRG IN USE : QM ASSIGNED PPS DRG

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### Standard Clinical Outcome Measurement QUADRAMED SAMPLE MEDICAL CENTER



Benchmark used: COST AND LOS - HOSPITAL STANDARD SEVR ADJ  
 SEVERITY UTILIZED: 3M™ APR™ DRG CLASSIFICATION SYSTEM  
 INCLUDE Clinical Measure PS003 - Decubitus Ulcer - Outc: Both/Denom - Prob: For AIP ...  
 RESOURCE ANALYSIS PATIENTS  
 INPATIENT ONLY  
 DISCHARGE DATE RANGE: 01/11/2007 TO 01/10/2008

Discharge/Svc Month	Disguised Measure Identity	Population	Numerator Population	Predicted Overall Average	Predicted Oppor'ty	Actual Rate	Predicted Rate	Rate Oppor.	Lower Conf Level	Upper Conf Level	+/-	ALOS	3M STD ALOS	ALOS Oppor.	Total Actual DPC Cost	Total 3M Standard DPC Cost	Total DPC Cost Opportunity
2007-01	PS003 - Decubitus Ulcer	0001	227	4	4.22	-0.22	17.62	18.57	-0.95	1.37	35.77	9.6	8.5	1.1	1,628,523	1,536,570	91,953
2007-02		0002	358	4	6.36	-2.36	11.17	17.77	-6.60	4.35	31.20	11.3	9.1	2.2	2,908,335	2,521,969	386,366
2007-03		0003	396	4	6.51	-2.51	10.10	16.43	-6.33	4.19	28.68	11.0	9.2	1.8	3,070,412	2,593,325	477,087
2007-04		0004	410	3	8.15	-0.15	19.51	19.87	-0.36	6.76	32.99	10.6	9.1	1.5	3,269,318	2,839,990	429,328
2007-05		0005	371	3	7.42	-4.42	8.09	19.99	-11.90	6.07	33.92	10.6	9.2	1.4	3,026,334	2,690,347	335,987
2007-06		0006	384	4	6.95	-2.95	10.42	18.09	-7.67	5.01	31.17	10.1	9.1	1.0	2,790,056	2,562,005	228,051
2007-07		0007	371	5	6.96	-1.96	13.48	18.77	-5.29	5.20	32.33	11.0	9.4	1.6	2,880,282	2,541,742	338,540
2007-08		0008	331	1	4.87	-3.87	3.02	14.70	-11.68	1.98	27.42	10.7	9.5	1.2	2,412,236	2,233,564	178,672
2007-09		0009	359	6	6.04	-0.04	16.71	16.82	-0.11	3.88	29.77	10.4	9.1	1.3	2,602,950	2,296,427	306,523

# Conclusion

- Offers a broad data repository that includes inpatient and outpatient data
- Allows facilities to benchmark at an individual, state, and national level
- Provides Core Measures abstracting tool with specifications updates and reporting capabilities
- Provides facility Performance Measurement based on administrative data (financials, LOS, physician drill down, patient drill down.....)
- Questions?