Agency for Healthcare Research and Quality

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The Quality of Inpatient Care Provided to Older Patients with Acute Myocardial Infarction:

Findings from the National Healthcare Quality Report (NHQR)

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Agency for Healthcare Research and Quality

(presented by Jeff Brady, MD, MPH of AHRQ)

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BACKGROUND

- Annual acute myocardial infarctions (AMIs) in the US
  - ~565,000 new AMIs and ~300,000 recurrent AMIs
  - ~170,000 deaths w/MI as listed cause of death
  - Major contributor to coronary heart disease costs, which include
    - >$70 billion in d*irect* health care costs
    - >$70 billion in *indirect* costs (lost productivity, etc)
- The quality "chasm" for care of AMI and other conditions
  - The gap between what we *know* (the evidence base) and what we *do*
  - Has multiple dimensions
  - Described in the 2001 Institute of Medicine report "Crossing the Quality Chasm"

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IOM Report Addresses Concerns about the Quality of US Health Care

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One Response: Healthcare Research and Quality Act (PL 106-129)

- "Beginning in fiscal year 2003, the Secretary, acting through the (AHRQ) Director, shall submit to Congress
  - An annual report on national trends in the **quality of health care** provided to the American people." *(National Healthcare Quality Report = NHQR)*
  - "An annual report …on prevailing **disparities in health care delivery** as it relates to racial factors and socioeconomic factors in priority populations." *(National Healthcare Disparities Report = NHDR)*

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METHODS

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NHQR Objectives Related to the Quality of Inpatient Care for AMI

- To examine data on process measures from Medicare's Quality Improvement Organization (QIO) Program
- To examine data on outcome measures (i.e., inpatient mortality) from the Nationwide Inpatient Sample (NIS) of AHRQ's Healthcare Cost and Utilization Project (HCUP)

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QIO Process Measures of AMI Care Quality for 2000-2004 (I)

– Pharmacologic agents prescribed or given
  - Aspirin within 24 hrs before or after arrival
  - Aspirin at discharge
  - Beta blockers within 24 hrs after arrival
  - Beta blockers at discharge
  - Angiotensin converting enzyme (ACE) inhibitors given for left ventricular dysfunction (heart failure)

– Smoking cessation provided (if applicable)

– Composite measure based on an "opportunities model"

$$\frac{\Sigma \text{ individual times appropriate care was actually delivered}}{\Sigma \text{ opportunities to provide appropriate care across measures}}$$

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QIO Process Measures of AMI Care Quality for 2000-2004 (II)

– Time from hospital arrival to initiation of revascularization for patients meeting specific EKG criteria for AMI with ST elevation (STEMI) or with left bundle branch block (LBBB)
  - Percutaneous coronary intervention (PCI): “door to balloon” time
  - Fibrinolysis: “door to needle” time

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QIO Data Source

- Random samples of Medicare claims for patients with principal discharge diagnosis of AMI identified in each state every quarter
- Medical records reviewed by trained outside abstractors
- Criteria for inclusion (e.g., ICD-9-CM codes) and exclusion (e.g., pts < 18 years old, transfers in for some measures, transfers out for others, contraindications to specific care) applied
- Database on adherence to process measures generated
- Data independently analyzed by two QIOs with discrepancies resolved

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NIS Outcomes Measure

- Inpatient mortality for patients using same AMI ICD-9-CM principal discharge diagnosis codes as QIO data
- Non-identical exclusion criteria (e.g., transfers out, obstetrical admissions)
- 18+ years of age (data on Medicare enrollees highlighted here)
- Mortality rates adjusted by age, gender, age-gender interaction and mortality risk based on All Patient Refined Diagnosis Related Groups (APR-DRGs)

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NIS Data Source: All Patients from a Stratified Sample of Hospitals

Sample

- All discharges from a 20% sample of short-term community hospitals from AHRQ's (All-Payer) State Inpatient Databases (SIDs)
- Hospitals sampled based on region, location, ownership, teaching status, bed-size

Description of NIS database

- 36-38 states (~90% of US population) and ~ 1,000 hospitals
- ~8 million records (unweighted): ~38 million records (weighted)

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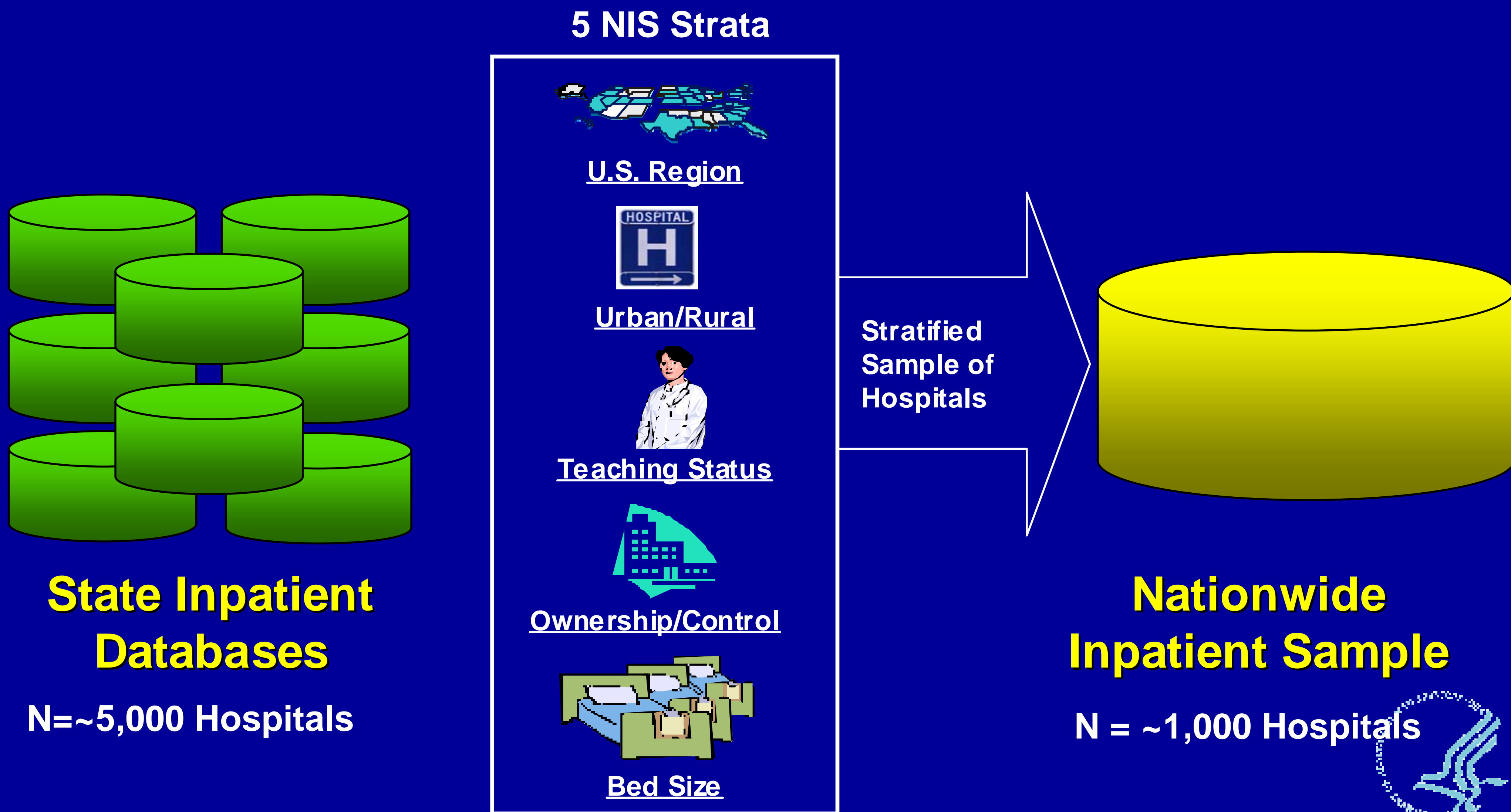
NIS Data: All Patients from a Stratified Sample of Hospitals from State (All-Payer) Inpatient Databases



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RESULTS

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Nation-wide Compliance with Pharmacologic and Counseling Measures, 2002-2004

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Nation-wide Compliance with Pharmacologic and Counseling Measures, 2002-2004

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Nation-wide Compliance with Pharmacologic and Counseling Measures, 2002-2004

Percent of discharges

100
90
80
70
60
50
40
30
20
10
0

2002
2003
2004

ASA within 24 hrs
ASA at discharge
BBs within 24 hrs
BBs at discharge
ACE inhibitors
Smoking cessation
Composite

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DISCUSSION

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Study Limitations

- Process measures
  - Limited to Medicare pts (the majority of AMI patients)
  - ? chart documentation (e.g., smoking cessation counseling)
  - Selective process measures of AMI care
  - Not all appropriate drugs (e.g., angiotensin receptor blockers) listed
  - Unusual results (e.g., some median times) suggest possible sample size and/or data quality issues
- Outcome measures
  - NIS inpatient mortality partly risk-adjusted (e.g., not for MI severity)
  - QIO and NIS AMI patient populations partly overlap
  - Outcomes other than inpatient mortality are important
- More current process and outcome measure results may differ

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Conclusions

- Quality measures provide potentially valuable insight regarding care of AMI patients
- The quality of inpatient AMI care is improving by most process and outcome measures examined
- The wide variation in results (state composite process measure scores ranged from 66.9-91.2% in 2004) indicates room for improvement in the quality of care
- Data quality should be closely tracked
- The provider community should be involved in quality measurement and quality improvement efforts because…

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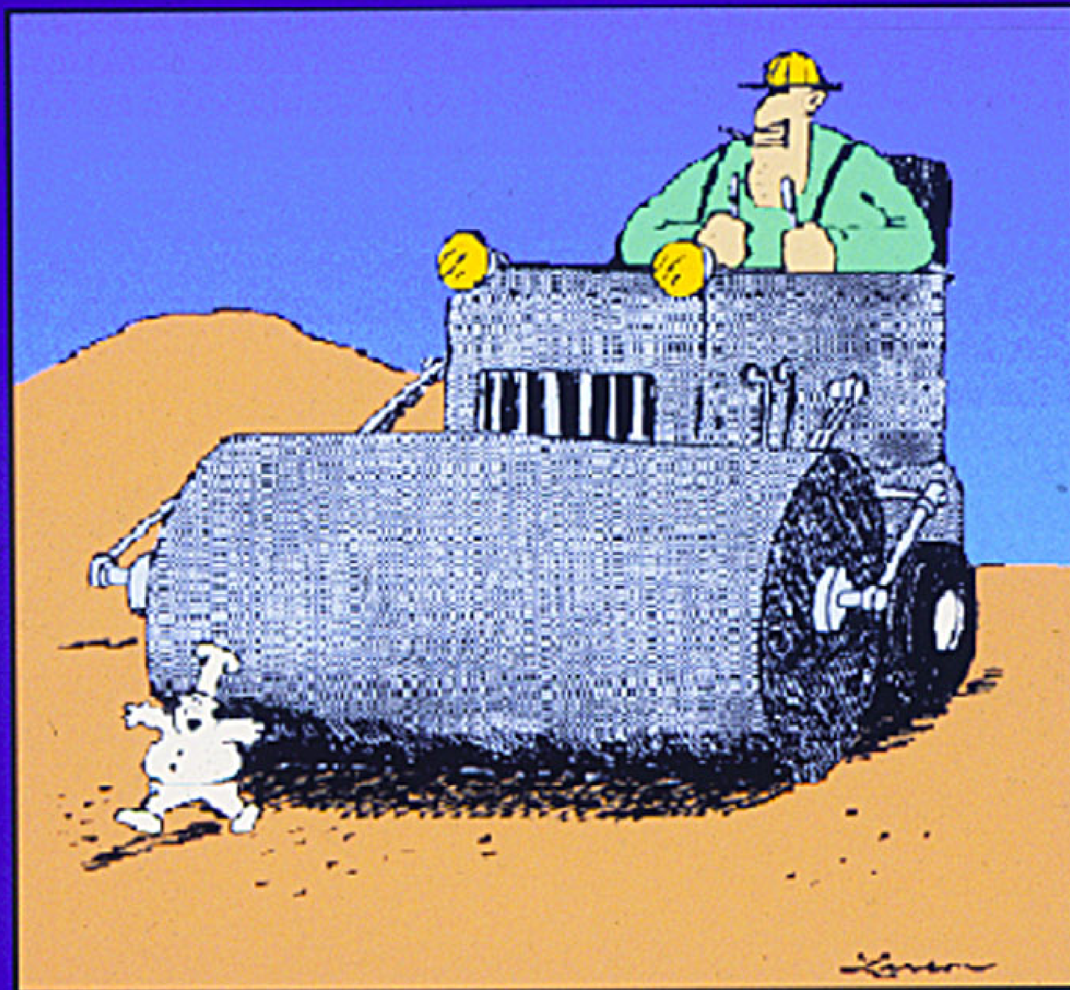

"If you're not part of the steamroller, you're part of the road."

-Rich Frank

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