

Guidance for Using the AHRQ Quality Indicators for Public Reporting or Payment - Appendix A: Current Uses of AHRQ Quality Indicators and Considerations for Hospital-level Reporting

This appendix provides additional details, by indicator, on current uses of AHRQ’s Inpatient Quality Indicators and Patient Safety Indicators and considerations when evaluating them for hospital-level reporting. This appendix amplifies the information summarized in alpha-numeric format in Table 4 of this report. See “Considerations for Hospital-level Reporting or Purchasing” in the report text for further description of the data and measurement issues that must be considered before adopting the IQIs and PSIs for hospital-level uses.

| AHRQ Quality Indicator ¹ | Current uses | | Considerations for hospital-level reporting |
|-------------------------------------|---|--|---|
| | Quality improvement and national surveillance | Public reporting and pay for performance | |
| Esophageal resection volume (IQI 1) | <ul style="list-style-type: none"> State and regional hospital associations – member only reports Internal hospital quality improvement | <ul style="list-style-type: none"> Public reporting by hospital² | <ul style="list-style-type: none"> Very low volume (national average = 3 procedures per year)³ Small cell sizes may impact patient confidentiality; data at the provider level may have to be suppressed Not applicable to the majority of hospitals Volume is a proxy measure, should be paired with mortality or another related quality indicator |
| Pancreatic resection volume (IQI 2) | <ul style="list-style-type: none"> State and regional hospital associations – member only reports Internal hospital quality improvement | <ul style="list-style-type: none"> Public reporting by hospital | <ul style="list-style-type: none"> Very low volume (national average = 4 procedures per year) Small cell sizes may impact patient confidentiality; data at the provider level may have to be suppressed Not applicable to the majority of hospitals Volume is a proxy measure, should be paired with mortality or another related quality indicator |

¹ The QIs listed are from IQI version 2.1, revision 2 (September 2003) and PSI version 2.1, revision 1 (May 2003). QI software and documentation are available on the AHRQ Quality Indicators Web site: <http://qualityindicators.ahrq.gov/>.

² Public reporting of all IQIs by hospital has been done by the Texas Health Care Information Council (<http://www.thcic.state.tx.us>) and the Alliance for Quality Health Care (AQHC) and Niagara Health Quality Coalition (NHQC) (<http://www.myhealthfinder.com/newyork/>).

³ All volume and mortality rate statistics are summarized from the IQI User Guide, version 2.1, revision 2 (September 2003) available for download from the AHRQ Quality Indicators Web site, archive page: http://www.qualityindicators.ahrq.gov/iqi_archive.htm and event rates are from the PSI User Guide, version 2.1, revision 1 (May 2003) available at http://www.qualityindicators.ahrq.gov/psi_download.htm.

| AHRQ Quality Indicator ¹ | Current uses | | Considerations for hospital-level reporting |
|--|---|--|--|
| | Quality improvement and national surveillance | Public reporting and pay for performance | |
| Pediatric heart surgery volume (IQI 3) | <ul style="list-style-type: none"> State and regional hospital associations – member only reports Internal hospital quality improvement | <ul style="list-style-type: none"> Public reporting by hospital | <ul style="list-style-type: none"> Low volume (national average = 55 procedures per year) Not applicable to the majority of hospitals Volume is a proxy measure, should be paired with mortality or another related quality indicator |
| Abdominal aortic aneurysm (AAA) repair volume (IQI 4) | <ul style="list-style-type: none"> State and regional hospital associations – member only reports Internal hospital quality improvement | <ul style="list-style-type: none"> Public reporting by hospital | <ul style="list-style-type: none"> Very low volume (national average = 15 procedures per year) Not applicable to the majority of hospitals Volume is a proxy measure, should be paired with mortality or another related quality indicator |
| Coronary artery bypass graft (CABG) volume (IQI 5) | <ul style="list-style-type: none"> State and regional hospital associations – member only reports Internal hospital quality improvement | <ul style="list-style-type: none"> Public reporting by hospital | <ul style="list-style-type: none"> Applicable to hospitals that provide cardiac surgical services Volume is a proxy measure, should be paired with mortality or another related quality indicator This volume may be manipulated, concern regarding appropriate utilization |
| Percutaneous transluminal coronary angioplasty (PTCA) volume (IQI 6) | <ul style="list-style-type: none"> State and regional hospital associations – member only reports Internal hospital quality improvement | <ul style="list-style-type: none"> Public reporting by hospital | <ul style="list-style-type: none"> Applicable to hospitals that provide cardiac surgical services Volume is a proxy measure, should be paired with mortality or another related quality indicator This volume may be easily manipulated, concern regarding appropriate utilization |
| Carotid endarterectomy (CEA) volume (IQI 7) | <ul style="list-style-type: none"> State and regional hospital associations – member only reports Internal hospital quality improvement | <ul style="list-style-type: none"> Public reporting by hospital | <ul style="list-style-type: none"> Low volume (national average = 58 procedures per year) Not applicable to the majority of hospitals Volume is a proxy measure, should be paired with mortality or another related quality indicator This volume may be easily manipulated, concern regarding appropriate utilization |
| Esophageal resection mortality (IQI 8) | <ul style="list-style-type: none"> State and regional hospital associations – member only reports Internal hospital quality improvement | <ul style="list-style-type: none"> Public reporting by hospital | <ul style="list-style-type: none"> Low rate (national rate 12 per 100 procedures) Not applicable to the majority of hospitals Potential confounding bias, should be risk adjusted (QI software uses APR-DRG, age, and sex) although impact may be impaired by skewed distribution |

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|--|---|--|--|
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| Pancreatic resection mortality (IQI 9) | <ul style="list-style-type: none"> State and regional hospital associations – member only reports Internal hospital quality improvement | <ul style="list-style-type: none"> Public reporting by hospital | <ul style="list-style-type: none"> Low rate (national rate 11 per 100 procedures) Not applicable to the majority of hospitals Potential confounding bias, should be risk adjusted (QI software uses APR-DRG, age, and sex) although impact may be impaired by skewed distribution |
| Pediatric heart surgery mortality (IQI 10) | <ul style="list-style-type: none"> State and regional hospital associations – member only reports Internal hospital quality improvement | <ul style="list-style-type: none"> Public reporting by hospital | <ul style="list-style-type: none"> Low rate (national 6 per 100 procedures) Not applicable to the majority of hospitals Potential confounding bias, should be risk adjusted (QI software uses APR-DRG, age, and sex) |
| AAA repair mortality (IQI 11) | <ul style="list-style-type: none"> State and regional hospital associations – member only reports Internal hospital quality improvement | <ul style="list-style-type: none"> Public reporting by hospital | <ul style="list-style-type: none"> Low rate (national rate 17 per 100 procedures) Not applicable to the majority of hospitals Potential confounding bias, should be risk adjusted (QI software uses APR-DRG, age, and sex) although impact may be impaired by skewed distribution |
| CABG mortality (IQI 12) | <ul style="list-style-type: none"> State and regional hospital associations – member only reports Internal hospital quality improvement | <ul style="list-style-type: none"> Public reporting by hospital | <ul style="list-style-type: none"> Low rate (national rate 4 per 100 procedures) Applicable to hospitals that provide cardiac surgical services Potential confounding bias, should be risk adjusted (QI software uses APR-DRG, age, and sex) |
| Craniotomy mortality (IQI 13) | <ul style="list-style-type: none"> State and regional hospital associations – member only reports Internal hospital quality improvement | <ul style="list-style-type: none"> Public reporting by hospital | <ul style="list-style-type: none"> Low rate (national rate 10 per 100 procedures) Not applicable to the majority of hospitals Potential confounding bias, should be risk adjusted (QI software uses APR-DRG, age, and sex) |
| Hip replacement mortality (IQI 14) | <ul style="list-style-type: none"> State and regional hospital associations – member only reports Internal hospital quality improvement | <ul style="list-style-type: none"> Public reporting by hospital | <ul style="list-style-type: none"> Very low rate (national rate 0.4 per 100 procedures) Potential confounding bias, should be risk adjusted (QI software uses APR-DRG, age, and sex) |

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|--|---|--|--|
| | Quality improvement and national surveillance | Public reporting and pay for performance | |
| Acute myocardial infarction (AMI) mortality (IQI 15) | <ul style="list-style-type: none"> State and regional hospital associations – member only reports Internal hospital quality improvement | <ul style="list-style-type: none"> Public reporting by hospital | <ul style="list-style-type: none"> Low rate (national rate 15 per 100 discharges) Potential confounding bias, should be risk adjusted (QI software uses APR-DRG, age, and sex) |
| Congestive heart failure (CHF) mortality (IQI 16) | <ul style="list-style-type: none"> State and regional hospital associations – member only reports Internal hospital quality improvement | <ul style="list-style-type: none"> Public reporting by hospital | <ul style="list-style-type: none"> Low rate (national rate 5 per 100 discharges) Potential confounding bias, should be risk adjusted (QI software uses APR-DRG, age, and sex) |
| Stroke mortality (IQI 7) | <ul style="list-style-type: none"> State and regional hospital associations – member only reports Internal hospital quality improvement | <ul style="list-style-type: none"> Public reporting by hospital | <ul style="list-style-type: none"> Low rate (national rate 11 per 100 discharges) Potential confounding bias, should be risk adjusted (QI software uses APR-DRG, age, and sex) |
| Gastrointestinal (GI) hemorrhage mortality (IQI 18) | <ul style="list-style-type: none"> State and regional hospital associations – member only reports Internal hospital quality improvement | <ul style="list-style-type: none"> Public reporting by hospital | <ul style="list-style-type: none"> Low rate (national rate 3 per 100 discharges) Potential confounding bias, should be risk adjusted (QI software uses APR-DRG, age, and sex) |
| Hip fracture mortality (IQI 19) | <ul style="list-style-type: none"> State and regional hospital associations – member only reports Internal hospital quality improvement | <ul style="list-style-type: none"> Public reporting by hospital | <ul style="list-style-type: none"> Low rate (national rate 3 per 100 discharges) Potential confounding bias, should be risk adjusted (QI software uses APR-DRG, age, and sex) |
| Pneumonia mortality (IQI 20) | <ul style="list-style-type: none"> State and regional hospital associations – member only reports Internal hospital quality improvement | <ul style="list-style-type: none"> Public reporting by hospital | <ul style="list-style-type: none"> Low rate (national rate 8 per 100 discharges) Potential confounding bias, should be risk adjusted (QI software uses APR-DRG, age, and sex) |

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|--|---|--|--|
| | Quality improvement and national surveillance | Public reporting and pay for performance | |
| Cesarean section (C-section) (IQI 21) | <ul style="list-style-type: none"> State and regional hospital associations – member only reports Internal hospital quality improvement | <ul style="list-style-type: none"> Public reporting by hospital | <ul style="list-style-type: none"> Potential confounding bias, should be risk adjusted (QI software uses age) Indicator measure is enhanced when additional clinical data are available Lower rate is desirable but benchmark is unclear |
| Vaginal birth after cesarean section (VBAC) (IQI 22) | <ul style="list-style-type: none"> State and regional hospital associations – member only reports Internal hospital quality improvement | <ul style="list-style-type: none"> Public reporting by hospital | <ul style="list-style-type: none"> Potential confounding bias, should be risk adjusted (QI software uses age) Indicator measure is enhanced when additional clinical data are available Higher rate desirable but benchmark is unclear |
| Laparoscopic cholecystectomy (IQI 23) | <ul style="list-style-type: none"> State and regional hospital associations – member only reports Internal hospital quality improvement | <ul style="list-style-type: none"> Public reporting by hospital | <ul style="list-style-type: none"> Potential confounding bias, should be risk adjusted (QI software uses age and sex) Majority of these procedures are currently done on an outpatient basis or observation status (not included in inpatient data) Unclear benchmark |
| Incidental appendectomy among elderly (IQI 24) | <ul style="list-style-type: none"> State and regional hospital associations – member only reports Internal hospital quality improvement | <ul style="list-style-type: none"> Public reporting by hospital | <ul style="list-style-type: none"> Low rate (national rate 3 per 100 procedures) Potential confounding bias, should be risk adjusted (QI software uses APR-DRG, age, and sex) |
| Bi-lateral cardiac catheterization (IQI 25) | <ul style="list-style-type: none"> State and regional hospital associations – member only reports Internal hospital quality improvement | <ul style="list-style-type: none"> Public reporting by hospital | <ul style="list-style-type: none"> Low rate (national rate 11 per 100 procedures) Applicable to hospitals that offer cardiac diagnostic or surgical services Procedure may be done on an outpatient basis or observation status (not included in inpatient data) |
| PTCA mortality (IQI 30) | <ul style="list-style-type: none"> State and regional hospital associations – member only reports Internal hospital quality improvement | | <ul style="list-style-type: none"> Low rate (national rate 2 per 100 procedures) Applicable to hospitals that provide cardiac surgical services Offered in QI software but not part of the official QI set, available to complement volume indicator. |

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|-------------------------------------|--|--|--|
| | Quality improvement and national surveillance | Public reporting and pay for performance | |
| CEA mortality (IQI 31) | <ul style="list-style-type: none"> State and regional hospital associations – member only reports Internal hospital quality improvement | | <ul style="list-style-type: none"> Very low rate (national rate 0.8 per 100 procedures) Offered in QI software but not part of the official QI set, available to complement volume indicator. Not applicable to the majority of hospitals |
| Complications of anesthesia (PSI 1) | <ul style="list-style-type: none"> National quality reports (not hospital level)⁴ State and regional hospital associations – member only reports Internal hospital quality improvement State agencies – safety monitoring, confidential/internal analyses | <ul style="list-style-type: none"> Private pay-for-performance initiative⁵ | <ul style="list-style-type: none"> Very low rate (national rate 0.6 per 1,000 surgical discharges) Small cell sizes may impact patient confidentiality, data at the provider level may have to be suppressed Unspecific denominator and condition definition varies Requires use of external cause-of-injury codes (E-codes) |
| Death in low mortality DRGs (PSI 2) | <ul style="list-style-type: none"> National quality reports State and regional hospital associations – member only reports Internal hospital quality improvement State agencies – safety monitoring, confidential/internal analyses | <ul style="list-style-type: none"> Private pay-for-performance initiative | <ul style="list-style-type: none"> Low rate (national rate 2 per 1,000 surgical discharges) Risk adjustment may not fully account for varying levels of severity for patients included in denominator population (QI software uses age, sex, DRG, and comorbidity categories) |

⁴ Use in national quality reports refers to the inclusion of these QIs in the measure set of the *National Healthcare Quality Report* and the *National Healthcare Disparities Report* released by the U.S. Department of Health and Human Services in 2003 (<http://www.qualitytools.ahrq.gov>).

⁵ Pay-for-performance initiative based on participation in measurement effort, not on particular rate (See: Anthem Blue Cross and Blue Shield. Anthem Blue Cross and Blue Shield joins with nine hospitals and the American College of Cardiology to reward quality. [press release]. February 18, 2003. <http://www.anthem.com/jsp/antiphona/bcbs/int_primary.jsp?content_id=PW_035971> Accessed August 2004)

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|--|---|--|---|
| | Quality improvement and national surveillance | Public reporting and pay for performance | |
| Decubitus ulcer (PSI 3) | <ul style="list-style-type: none"> • National quality reports • State and regional hospital associations – member only reports • Internal hospital quality improvement • State agencies – safety monitoring, confidential/internal analyses | | <ul style="list-style-type: none"> • Low rate (national rate 23.9 per 1,000 surgical discharges) • ICD-9 codes may be inadequate for risk adjustment and describing condition of interest • Underreported |
| Failure to rescue (PSI 4) | <ul style="list-style-type: none"> • National quality reports • State and regional hospital associations – member only reports • Internal hospital quality improvement • State agencies – safety monitoring, confidential/internal analyses | | <ul style="list-style-type: none"> • Risk adjustment may not fully account for varying levels of severity for patients included in denominator population (QI software uses age, sex, DRG, and comorbidity categories) • Difficult for providers to identify and implement specific improvement interventions |
| Foreign body left during procedure (PSI 5) | <ul style="list-style-type: none"> • National quality reports • State agencies – safety monitoring, confidential/internal analyses • State and regional hospital associations – member only reports • Internal hospital quality improvement | | <ul style="list-style-type: none"> • Rare event (national rate 0.07 per 1,000 discharges) • Small cell sizes may impact patient confidentiality, data at the provider level may have to be suppressed • Requires use of external cause-of-injury codes (E-codes) |

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|---|---|--|---|
| | Quality improvement and national surveillance | Public reporting and pay for performance | |
| Iatrogenic pneumothorax (PSI 6) | <ul style="list-style-type: none"> • National quality reports • State agencies – safety monitoring, confidential/internal analyses • State and regional hospital associations – member only reports • Internal hospital quality improvement | <ul style="list-style-type: none"> • Private pay-for-performance initiative | <ul style="list-style-type: none"> • Very low rate (national rate 0.63 per 1,000 surgical discharges) • Small cell sizes may impact patient confidentiality, data at the provider level may have to be suppressed |
| Selected infections due to medical care (PSI 7) | <ul style="list-style-type: none"> • National quality reports • State agencies – safety monitoring, confidential/internal analyses • State and regional hospital associations – member only reports • Internal hospital quality improvement | <ul style="list-style-type: none"> • Private pay-for-performance initiative | <ul style="list-style-type: none"> • Low rate (national rate 1.5 per 1,000 surgical discharges) • Underreporting is a concern |

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|---|---|---|---|
| | Quality improvement and national surveillance | Public reporting and pay for performance | |
| Postoperative hip fracture (PSI 8) | <ul style="list-style-type: none"> • National quality reports • State agencies – safety monitoring, confidential/internal analyses • State and regional hospital associations – member only reports • Internal hospital quality improvement | | <ul style="list-style-type: none"> • Low rate (national rate 1.3 per 1,000 surgical discharges) • Uses of external cause-of-injury codes (E-codes) to exclude cases from the denominator population • Using ICD-9 codes to measure the concept of falls |
| Postoperative hemorrhage or hematoma (PSI 9) | <ul style="list-style-type: none"> • National quality reports • State agencies – safety monitoring, confidential/internal analyses • State and regional hospital associations – member only reports • Internal hospital quality improvement | <ul style="list-style-type: none"> • National (public) pay-for-performance demonstration project⁶ • Private pay-for-performance initiative | <ul style="list-style-type: none"> • Low rate (national rate 1.26 per 1,000 surgical discharges) • Risk adjustment may not fully account for varying levels of severity for patients included in denominator population (QI software uses age, sex, DRG, and comorbidity categories) |
| Postoperative physiologic and metabolic derangements (PSI 10) | <ul style="list-style-type: none"> • National quality reports • State agencies – safety monitoring, confidential/internal analyses • State and regional hospital associations – member only reports • Internal hospital quality improvement | <ul style="list-style-type: none"> • National (public) pay-for-performance demonstration project | <ul style="list-style-type: none"> • Very low rate (national rate 0.78 per 1,000 surgical discharges) • Small cell sizes may impact patient confidentiality, data at the provider level may have to be suppressed • Risk adjustment may not fully account for varying levels of severity for patients included in denominator population (QI software uses age, sex, DRG, and comorbidity categories) • Condition definition varies • Difficult for providers to identify and implement specific improvement interventions |

⁶ Centers for Medicare & Medicaid Services. The Premier Hospital Quality Incentive Demonstration: Rewarding superior quality care. Centers for Medicare & Medicaid Services Fact Sheet, February 18, 2004. <<http://www.cms.hhs.gov/quality/hospital/PremierFactSheet.pdf>> Accessed February 2004.

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|--|---|--|--|
| | Quality improvement and national surveillance | Public reporting and pay for performance | |
| Postoperative respiratory failure (PSI 11) | <ul style="list-style-type: none"> • National quality reports • State agencies – safety monitoring, confidential/internal analyses • State and regional hospital associations – member only reports • Internal hospital quality improvement | | <ul style="list-style-type: none"> • Low rate (national rate 3.47 per 1,000 surgical discharges) • Risk adjustment may not fully account for varying levels of severity for patients included in denominator population (QI software uses age, sex, DRG, and comorbidity categories) |
| Postoperative pulmonary embolism (PE) or deep vein thrombosis (DVT) (PSI 12) | <ul style="list-style-type: none"> • National quality reports • State agencies – safety monitoring, confidential/internal analyses • State and regional hospital associations – member only reports • Internal hospital quality improvement | | <ul style="list-style-type: none"> • Underreporting |
| Postoperative sepsis (PSI 13) | <ul style="list-style-type: none"> • National quality reports • State agencies – safety monitoring, confidential/internal analyses • State and regional hospital associations – member only reports • Internal hospital quality improvement | <ul style="list-style-type: none"> • Private pay-for-performance initiative | <ul style="list-style-type: none"> • Condition definition varies |

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|--|---|--|---|
| | Quality improvement and national surveillance | Public reporting and pay for performance | |
| Postoperative wound dehiscence (PSI 14) | <ul style="list-style-type: none"> • National quality reports • State agencies – safety monitoring, confidential/internal analyses • State and regional hospital associations – member only reports • Internal hospital quality improvement | | <ul style="list-style-type: none"> • Low rate (national rate 1.95 per 1,000 surgical discharges) • Risk adjustment may not fully account for varying levels of severity for patients included in denominator population (QI software uses age, sex, DRG, and comorbidity categories) |
| Accidental puncture or laceration (PSI 15) | <ul style="list-style-type: none"> • National quality reports • State agencies – safety monitoring, confidential/internal analyses • State and regional hospital associations – member only reports • Internal hospital quality improvement | | <ul style="list-style-type: none"> • Low rate (national rate 2.45 per 1,000 surgical discharges) • Requires use of external cause-of-injury codes (E-codes) • Underreporting |
| Transfusion reaction (PSI 16) | <ul style="list-style-type: none"> • National quality reports • State agencies – safety monitoring, confidential/internal analyses • State and regional hospital associations – member only reports • Internal hospital quality improvement | | <ul style="list-style-type: none"> • Extremely rare event (national rate 0.005 per 1,000 discharges) • Small cell sizes may impact patient confidentiality, data at the provider level may have to be suppressed • Stratification suggested, unable to risk adjust due to low rate of occurrence • Requires use of external cause-of-injury codes (E-codes) |

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|--|---|--|--|
| | Quality improvement and national surveillance | Public reporting and pay for performance | |
| Birth trauma (PSI 17) | <ul style="list-style-type: none"> • National quality reports • State agencies – safety monitoring, confidential/internal analyses • State and regional hospital associations – member only reports • Internal hospital quality improvement | | <ul style="list-style-type: none"> • Condition definition varies • Risk adjustment may not fully account for varying levels of severity for patients included in denominator population (QI software uses sex) |
| Obstetric trauma – vaginal with instrument (PSI 18) | <ul style="list-style-type: none"> • National quality reports • State agencies – safety monitoring, confidential/internal analyses • State and regional hospital associations – member only reports • Internal hospital quality improvement | <ul style="list-style-type: none"> • Private pay-for-performance initiative | <ul style="list-style-type: none"> • Risk adjustment may not fully account for varying levels of severity for patients included in denominator population (QI software uses age) |
| Obstetric trauma – vaginal without instrument (PSI 19) | <ul style="list-style-type: none"> • National quality reports • State agencies – safety monitoring, confidential/internal analyses • State and regional hospital associations – member only reports • Internal hospital quality improvement | <ul style="list-style-type: none"> • Private pay-for-performance initiative | <ul style="list-style-type: none"> • Risk adjustment may not fully account for varying levels of severity for patients included in denominator population (QI software uses age) |

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|--|---|--|---|
| | Quality improvement and national surveillance | Public reporting and pay for performance | |
| Obstetric trauma – cesarean section (PSI 20) | <ul style="list-style-type: none"> • National quality reports • State agencies – safety monitoring, confidential/internal analyses • State and regional hospital associations – member only reports • Internal hospital quality improvement | <ul style="list-style-type: none"> • Private pay-for-performance initiative | <ul style="list-style-type: none"> • Risk adjustment may not fully account for varying levels of severity for patients included in denominator population (QI software uses age) |