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## Metrics: Hospital Process Measures

**Measure Steward:** Centers for Medicare & Medicaid Services

**CHIA Data Source:** CMS Hospital Compare

**Populations:** All Payers, Ages 18+

| **Set** | **Measure Name and ID** | **Description** | **Primary Data Source** | **Measure start date** | **Measure end date** |
| --- | --- | --- | --- | --- | --- |
| Hospital Process | Aspirin prescribed at discharge for AMI (AMI 2) | Percentage of acute myocardial infarction (AMI) patients who are prescribed aspirin at hospital discharge. | Health record | 4/1/2011 | 3/31/2014 |
| Hospital Process | Fibrinolytic therapy received within 30 minutes of hospital arrival (AMI 7a) | Percentage of acute myocardial infarction (AMI) patients with ST-segment elevation or LBBB on the ECG closest to arrival time receiving fibrinolytic therapy during the hospital stay and having a time from hospital arrival to fibrinolysis of 30 minutes or less. | Health record | 4/1/2011 | 3/31/2014 |
| Hospital Process | Primary percutaneous coronary intervention (PCI) received within 90 minutes of hospital arrival (AMI 8a) | Percentage of acute myocardial infarction (AMI) patients with ST-segment elevation or LBBB on the ECG closest to arrival time receiving primary percutaneous coronary intervention (PCI) during the hospital stay with a time from hospital arrival to PCI of 90 minutes or less. | Health record | 4/1/2011 | 3/31/2014 |
| Hospital Process | Statin Prescribed at Discharge (AMI 10) | Percent of acute myocardial infarction (AMI) patients who are prescribed a statin at hospital discharge. | Health record | 4/1/2011 | 3/31/2013 |
| Hospital Process | Detailed Discharge Instructions (HF 1) | Percent of health failure patients who received detailed instructions at discharge. | Health record | 4/1/2011 | 3/31/2013 |
| Hospital Process | Heart failure patients given an evaluation of left ventricular systolic function (LVS) (HF 2) | Percentage of heart failure patients with documentation in the hospital record that left ventricular systolic (LVS) function was evaluated before arrival, during hospitalization, or is planned for after discharge. | Health record | 4/1/2011 | 3/31/2013 |
| Hospital Process | Pneumonia patients given the most appropriate initial antibiotic(s) (PN 6) | Percentage of pneumonia patients 18 years of age or older selected for initial receipts of antibiotics for community-acquired pneumonia (CAP). | Health Record | 1/1/2011 | 12/31/2014 |
| Surgical Care Improvement Project | Prophylactic antibiotic received within 1 hour prior to surgical incision (SCIP-Inf-1a) | Surgical patients with prophylactic antibiotics initiated within one hour prior to surgical incision. Patients who received vancomycin or a fluoroquinolone for prophylactic antibiotics should have the antibiotics initiated within two hours prior to surgical incision. The extended window is due to the longer infusion time required for these antibiotics. | Health record | 4/1/2011 | 3/31/2014 |
| Surgical Care Improvement Project | Prophylactic antibiotic selection for surgical patients (SCIP-Inf-2a) | Surgical patients who received prophylactic antibiotics consistent with current guidelines (specific to each type of surgical procedure). | Health record | 4/1/2011 | 3/31/2014 |
| Surgical Care Improvement Project | Prophylactic antibiotics discontinued within 24 hours after surgery end time (SCIP-Inf-3a) | Surgical patients whose prophylactic antibiotics were discontinued within 24 hours after Anesthesia End Time. The Society of Thoracic Surgeons (STS) Practice Guideline for Antibiotic Prophylaxis in Cardiac Surgery (2006) indicates that there is no reason to extend antibiotics beyond 48 hours for cardiac surgery and very explicitly states that antibiotics should not be extended beyond 48 hours even with tubes and drains in place for cardiac surgery. | Health record | 4/1/2011 | 3/31/2014 |
| Surgical Care Improvement Project | Urinary catheter removed on Postoperative Day 1 (POD1) or Postoperative Day 2 (POD2) with day of surgery being day zero (SCIP-Inf-9) | Surgical patients with urinary catheter removed on Postoperative Day 1 or Postoperative Day 2 with day of surgery being day zero. | Health record | 4/1/2011 | 3/31/2014 |
| Surgical Care Improvement Project | Surgery patients who received appropriate venous thromboembolism prophylaxis within 24 hours prior to surgery to 24 hours after surgery (SCIP-VTE-2) | Surgery patients who received appropriate venous thromboembolism (VTE) prophylaxis within 24 hours prior to Surgical Incision Time to 24 hours after Surgery End Time. | Health record | 4/1/2011 | 3/31/2014 |
| Surgical Care Improvement Project | Surgery patients on beta-blocker therapy prior to arrival who received a beta-blocker during the perioperative period (SCIP-Card-2) | Surgery patients on beta-blocker therapy prior to admission who received a beta-blocker during the perioperative period. The perioperative period for the SCIP Cardiac measures is defined as 24 hours prior to surgical incision through discharge from post-anesthesia care/recovery area. | Health record | 4/1/2011 | 3/31/2014 |
| Surgical Care Improvement Project | Cardiac Surgery Patients with Controlled Postoperative Blood Glucose (SCIP-Inf-4) | Cardiac surgery patients with controlled postoperative blood glucose (less than or equal to 180 mg/dL) in the timeframe of 18 to 24 hours after Anesthesia End Time. | Health record | 4/1/2011 | 3/31/2013 |

**Definition:**

All process measure scores were retrieved from CMS Hospital Compare as pre-calculated percentages. Where a hospital’s performance is not included on Hospital Compare because of small numbers, missing data, or because the measure does not apply, the measure is also not included in the report.

## Metrics: Health Care-Associated Infections (HAI)

**Measure Steward:** Centers for Medicare & Medicaid Services

**CHIA Data Source:** CMS Hospital Compare

**Populations:** All Payers, All Ages

| **Set** | **Measure Name and ID** | **Description** | **Primary Data Source** | **Measure start date** | **Measure end date** | |
| --- | --- | --- | --- | --- | --- | --- |
| HAI | Catheter-Associated Urinary Tract Infections | Standardized Infection Ratio (SIR) of healthcare-associated, catheter-associated urinary tract infections (UTI) will be calculated among patients in bedded inpatient care locations, except level II or level III neonatal intensive care units (NICU. | Health record | 1/1/2013 | | 12/31/2013 |
| HAI | Central-Line Associated Bloodstream Infection | Standardized Infection Ratio (SIR) of healthcare-associated, central line-associated bloodstream infections (CLABSI) will be calculated among patients in bedded inpatient care locations. | Health record | 1/1/2013 | | 12/31/2013 |
| HAI | Hospital-onset *C. difficile* | Standardized infection ratio (SIR) of hospital-onset CDI Laboratory-identified events (LabID events) among all inpatients in the facility, excluding well-baby nurseries and neonatal intensive care units (NICUs) | Health record | 1/1/2013 | | 12/31/2013 |
| HAI | Hospital-onset MRSA | Standardized infection ratio (SIR) of hospital-onset unique blood source MRSA Laboratory-identified events (LabID events) among all inpatients in the facility | Health record | 1/1/2013 | | 12/31/2013 |
| HAI | SSI Surgical Site Infection: SSI colon, SSI-abdominal hysterectomy | Facility adjusted Standardized Infection Ratio (SIR) of deep incisional and organ/space Surgical Site Infections (SSI) at the primary incision site among adult patients aged >= 18 years as reported through the CDC National Health and Safety Network (NHSN). This single prototype measure is applied to two operative procedures, colon surgeries and abdominal hysterectomies, and the measure yields separate SIRs for each procedure. | Health record | 1/1/2013 | | 12/31/2013 |

**Definition:**

Performance on these measures is reported as a Standard Infection Ratio (SIR), or the ratio of the number of infections and expected number of infections at a particular facility. The CDC adjusts the SIR for risk factors associated with differences in a facility’s infection rates, like hospital type, medical school affiliation, and bed size for CLABSI and CAUTI, and patient and procedural differences for SSI. The pre-calculated SIRs for health care-associated infections were retrieved from CMS Hospital Compare. Where a hospital’s performance is not included on Hospital Compare because of small numbers, missing data, or because the measure does not apply, the measure is also not included in the report.

## Metric: Hospital-wide Adult All-Payer Readmissions Measure

**Steward:** Centers for Medicare & Medicaid

**CHIA Data Sources:** CHIA Hospital Discharge Database

**Populations:** All Payers, Ages 18+

| **Set** | **Measure Name and ID** | **Description** | **Primary Data Source** | **Measure start date** | **Measure end date** |
| --- | --- | --- | --- | --- | --- |
| Readmission Rates | Hospital-Wide All-Cause Unplanned Readmission Measure (HWR) (All-Payer Measure) | This measure estimates the hospital-wide, all-cause, unplanned 30-day readmission rate for all-payer patients aged 18 and older. | Administrative Records | 7/1/2010 | 6/30/2013 |

**Calculation/Definition:**

The all-payer risk standardized readmission rates for patients 18+ years of age were calculated according to the measure specifications adopted from CMS, as submitted by the Center for Outcomes Research and Evaluation, Yale New Haven Health Services Corporation. CHIA’s Hospital Discharge Database (HDD) was used for this analysis. The measure reports a single summary risk-standardized readmission rate (RSRR), derived from the volume-weighted results of five clinically defined cohorts: surgery/gynecology, general medicine, cardiorespiratory, cardiovascular, and neurology. The risk standardization procedure controls for patient case mix and hospital service mix.

For more details, please see <http://www.chiamass.gov/hospital-wide-adult-all-payer-readmissions-in-massachusetts-2011-2013/>**Metric: Serious Complications (Patient Safety Indicator composite, PSI 90)**

**Steward:** Agency for Health Research and Quality

**CHIA Data Source:** CHIA Hospital Discharge Database

**Population:** All Payers, Ages 18+

| **Set** | **Measure Name and ID** | **Description** | **Primary Data Source** | **Measure start date** | **Measure end date** |
| --- | --- | --- | --- | --- | --- |
| Patient Safety Indicators | Patient Safety for Selected Indicators (PSI 90) | The weighted average of the reliability-adjusted observed-to-expected ratios (indirect standardization of the smoothed rates) for the following component indicators:  • PSI 03 Pressure Ulcer Rate  • PSI 06 Iatrogenic Pneumothorax Rate  • PSI 07 Central Venous Catheter-Related Blood Stream Infection Rate • PSI 08 Postoperative Hip Fracture Rate  • PSI 09 Perioperative Hemorrhage or Hematoma Rate  • PSI 10 Postoperative Physiologic and Metabolic Derangement Rate  • PSI 11 Postoperative Respiratory Failure Rate  • PSI 12 Perioperative Pulmonary Embolism or Deep Vein Thrombosis Rate  • PSI 13 Postoperative Sepsis Rate  • PSI 14 Postoperative Wound Dehiscence Rate  • PSI 15 Accidental Puncture or Laceration Rate | Administrative Records | 10/1/2010 | 9/30/2014 |

**Calculation:**

The Serious Complications measure (PSI 90) was calculated according to the measure specifications from the Agency for Healthcare Research and Quality (AHRQ), using data from CHIA’s Hospital Discharge Database (HDD) for four fiscal years (2010-2011, 2011-2012, 2012-2013, and 2013-2014) and AHRQ software versions 4.5A and 5.0.

The Serious Complications measure was risk-adjusted according to AHRQ specifications to remove the confounding effect of patient case mix. If a hospital had fewer than 30 cases in the denominator the rate was not reported.

## Metrics: The Leapfrog Group Measures

**Steward:** The Leapfrog Group

**CHIA Data Source:** The Leapfrog Group Hospital Survey

**Population:** All Payers, All Ages

| **Set** | **Measure Name and ID** | **Description** | **Primary Data Source** | **Measure start date** | **Measure end date** |
| --- | --- | --- | --- | --- | --- |
| Leapfrog | Elective Delivery Prior to 39 Completed Weeks Gestation | Elective Delivery Prior to 39 Completed Weeks Gestation | Hospital Survey | 1/1/2011 | 6/30/2015 |
| Leapfrog | Incidence of Episiotomy | Percent of vaginal deliveries in which an episiotomy was performed. | Hospital Survey | 1/1/2011 | 6/30/2015 |

**Definition:**

These measure scores were received from The Leapfrog Group as pre-calculated percentages. Participation in the Leapfrog survey is voluntary; where a hospital does not complete the survey or report on certain items in the survey, the measure is also not included in the report.

## Metrics: Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS)

**Steward:** Agency for Healthcare Research and Quality

**CHIA Data Source:** CMS Hospital Compare

**Populations:** All Payers, Ages 18+

| **Set** | **Measure Name and ID** | **Description** | **Primary Data Source** | **Measure start date** | **Measure end date** |
| --- | --- | --- | --- | --- | --- |
| HCAHPS | % of patients reporting that room was 'always' clean | The percentage of patients responding to the HCAHPS survey who reported that their room and bathroom were "Always" clean. | Patient Reported Data/Survey | 1/1/2011 | 12/31/2013 |
| HCAHPS | % of patients who reported that staff 'always' explained about medicines | The percentage of patients responding to the HCAHPS survey who reported that staff "Always" explained about medicines before giving it to them. | Patient Reported Data/Survey | 1/1/2011 | 12/31/2013 |
| HCAHPS | % of patients reporting that doctors 'always' communicated well | The percentage of patients responding to the HCAHPS survey who reported that their doctors "Always" communicated well. | Patient Reported Data/Survey | 1/1/2011 | 12/31/2013 |
| HCAHPS | % of patients reporting that nurses 'always' communicated well | The percentage of patients responding to the HCAHPS survey who reported that their nurses "Always" communicated well. | Patient Reported Data/Survey | 1/1/2011 | 12/31/2013 |
| HCAHPS | % of patients who reported that they were given information about what to do during their recovery at home | The percentage of patients responding to the HCAHPS survey at each hospital who reported that YES, they were given information about what to do during their recovery at home. | Patient Reported Data/Survey | 1/1/2011 | 12/31/2013 |
| HCAHPS | % of patients who gave their hospital a rating of 9 or 10 (highest) | The percentage of patients responding to the HCAHPS survey who gave their hospital a rating of 9 or 10 on a scale from 0 (lowest) to 10 (highest). | Patient Reported Data/Survey | 1/1/2011 | 12/31/2013 |
| HCAHPS | % of patients who would definitely recommend the hospital | Percentage of patients who reported YES, they would definitely recommend the hospital. | Patient Reported Data/Survey | 1/1/2011 | 12/31/2013 |
| HCAHPS | % of patients who reported that their pain was 'always' well controlled. | The percentage of patients responding to the HCAHPS survey who reported that their pain was "Always" well controlled. | Patient Reported Data/Survey | 1/1/2011 | 12/31/2013 |
| HCAHPS | % of patients who reported that the area around their room was 'always' quiet at night | The percentage of patients responding to the HCAHPS survey who reported that the area around their room was "Always" quiet at night. | Patient Reported Data/Survey | 1/1/2011 | 12/31/2013 |
| HCAHPS | % of patients who reported that they 'always' received help as soon as they wanted | The percentage of patients responding to the HCAHPS survey who reported that they "Always" received help as soon as they wanted. | Patient Reported Data/Survey | 1/1/2011 | 12/31/2013 |
| HCAHPS | % of patients who "Strongly Agree" they understood their care when they left the hospital | The percentage of patients responding to the HCAHPS survey who reported that they "Strongly Agreed" they understood their care instructions at discharge. | Patient Reported Data/Survey | 1/1/2011 | 12/31/2013 |

**Definition:**

All HCAHPS scores were retrieved from CMS Hospital Compare as pre-calculated percentages. Where a hospital’s performance is not included on Hospital Compare because of small numbers, missing data, or because the measure does not apply, the measure is also not included in the report.

## Metrics: Consumer Assessment of Healthcare Providers and Systems Clinician and Group Patient Centered Medical Home Survey (CAHPS)

**Steward:** Agency for Healthcare Research and Quality

**CHIA Data Source:** Massachusetts Health Quality Partners, 2014 Patient Experience Survey (PES), Adult PES Measures

**Population:** Commercially insured patients from the five largest health plans in Massachusetts (Blue Cross Blue Shield of Massachusetts, Tufts Health Plan, Harvard Pilgrim Health Care, Fallon Community Health Plan, and Health New England), Adult Measures: Ages 18+, Pediatric Measures: Ages 17 and younger

### Adult Patient Experience Survey Measures

| **Set** | **Measure Name and ID** | **Description** | **Primary Data Source** | **Measure start date** | **Measure end date** |
| --- | --- | --- | --- | --- | --- |
| Patient Experience Survey | Organizational Access | The percentage of patients who responded to the CG-CAHPS survey who were satisfied with their ability to get timely appointments, care, and information. | Patient Reported Data/Survey | 1/1/2013 | 12/31/2014 |
| Patient Experience Survey | Office Staff | The percentage of patients who responded to the CG-CAHPS survey who were satisfied that they received quality care from staff in the doctor’s office. | Patient Reported Data/Survey | 1/1/2013 | 12/31/2014 |
| Patient Experience Survey | Integration of Care | The percentage of patients who responded to the CG-CAHPS survey who were satisfied with how well doctors coordinate care. | Patient Reported Data/Survey | 1/1/2013 | 12/31/2014 |
| Patient Experience Survey | Communication | The percentage of patients who responded to the CG-CAHPS survey who were satisfied with how well doctors communicate with patients. | Patient Reported Data/Survey | 1/1/2013 | 12/31/2014 |
| Patient Experience Survey | Knowledge of Patient | The percentage of patients who responded to the CG-CAHPS survey who were satisfied with how well doctors know their patients. | Patient Reported Data/Survey | 1/1/2013 | 12/31/2014 |
| Patient Experience Survey | Willingness to Recommend | Percent of patients who responded to the CG-CAHPS survey and reported YES, they would definitely recommend their doctor to family and friends. | Patient Reported Data/Survey | 1/1/2013 | 12/31/2014 |

### Pediatric Patient Experience Survey Measures

| **Set** | **Measure Name and ID** | **Description** | **Primary Data Source** | **Measure start date** | **Measure end date** |
| --- | --- | --- | --- | --- | --- |
| Patient Experience Survey | Communication | The percentage of parents and caregivers who responded to the CG-CAHPS survey who were satisfied with how well doctors communicate with patients. | Patient Reported Data/Survey | 1/1/2013 | 12/31/2014 |
| Patient Experience Survey | Knowledge of Patient | The percentage of parents and caregivers who responded to the CG-CAHPS survey who were satisfied with how well doctors know their patients. | Patient Reported Data/Survey | 1/1/2013 | 12/31/2014 |
| Patient Experience Survey | Organizational Access | The percentage of parents and caregivers who responded to the CG-CAHPS survey who were satisfied with their ability to get timely appointments, care, and information. | Patient Reported Data/Survey | 1/1/2013 | 12/31/2014 |
| Patient Experience Survey | Office Staff | The percentage of parents and caregivers who responded to the CG-CAHPS survey who were satisfied that they received quality care from staff in the doctor’s office. | Patient Reported Data/Survey | 1/1/2013 | 12/31/2014 |
| Patient Experience Survey | Willingness to Recommend | Percent of parents and caregivers who responded to the CG-CAHPS survey and reported YES, they would definitely recommend their doctor to family and friends. | Patient Reported Data/Survey | 1/1/2013 | 12/31/2014 |

**Definition:**

All scores for measures of patient experience in medical groups reported were pre-calculated by and received from the Massachusetts Health Quality Partners (MHQP).

Patient Experience measures scores are rated on a scale from 0 to 100. Each survey response is converted to numeric format, with 100 as the most favorable response. Related questions are averaged to create a respondent-level score for each measure. The respondents’ measure scores are then case mix adjusted before aggregating to the medical group level.

These measures reflect the experience of the adult or a parent or caregiver of a child who received care and who is a commercially insured member of one of the five largest commercial carriers: BCBSMA, Fallon Community Health Plan, Harvard Pilgrim Health Care, Health New England and Tufts Health Plan. This sample represents approximately 80% of the commercial population.

MHQP does not report scores for practices or groups with insufficient sample size, but individuals from these small practices or groups are counted at more aggregated levels, once sufficient sample size is reached.

## Metrics: Prevention Quality Indicators (PQI)

**Steward:** Agency for Healthcare Research and Quality

**CHIA Data Source:** CHIAHospital Discharge Database

**Population:** All Payers, Ages 18+

| **Set** | **Measure Name and ID** | **Description** | **Primary Data Source** | **Measure start date** | **Measure end date** |
| --- | --- | --- | --- | --- | --- |
| PQI | Asthma in younger adults admission rate (PQI 15) | Admissions for a principal diagnosis of asthma per 100,000 population, ages 18 to 39 years. | Administrative records | 10/1/2013 | 9/30/2014 |
| PQI | Chronic obstructive pulmonary disease (PQI 5) | Admissions with a principal diagnosis of chronic obstructive pulmonary disease (COPD) or asthma per 100,000 population, ages 40 years and older. | Administrative records | 10/1/2013 | 9/30/2014 |
| PQI | Congestive Heart Failure Admission Rate (PQI 8) | Admissions with a principal diagnosis of heart failure per 100,000 population, ages 18 years and older. | Administrative records | 10/1/2013 | 9/30/2014 |
| PQI | Diabetes Short-Term Complications Admission Rate (PQI 1) | Admissions for a principal diagnosis of diabetes with short-term complications (ketoacidosis, hyperosmolarity, or coma) per 100,000 population, ages 18 years and older. | Administrative records | 10/1/2013 | 9/30/2014 |

**Definition:**

The Prevention Quality Indicators were calculated according to the measure specifications from the Agency for Healthcare Research and Quality (AHRQ), using data from CHIA’s Hospital Discharge Database (HDD) for two fiscal years (2012-2013 and 2013-2014) and AHRQ software version 5.0.

The PQIs was risk-adjusted according to AHRQ specifications to remove the confounding effect of patient case mix.