# 2014 QUALITY AND SAFETY ANNUAL REPORT

DENVER HEALTH
Level One Care for ALL

Quality of Care

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To the Denver Healthcare Community:

Central to our commitment to the Denver Community is that we provide high quality and safe care to all those who seek better health across our integrated systems. To fulfill this commitment, we must continuously evaluate and improve our care. We are proud to present our *2014 Quality and Safety Annual Report*. Our intent is to present a year-end summary of our quality and safety initiatives and associated outcomes as well as key results of publicly reported performance measures. As the local, regional, and national landscape of healthcare quality measurement becomes more complex, we hope this will be a resource to all who care to track Denver Health's successes and opportunities.

— Tom, Allison, Mary Ann, and Amber

# TABLE OF CONTENTS

Executive Summary……1

Denver Health and Hospital Authority (DHHA) Pillars

- Pillars Overview……2
- Patient Safety and Quality Pillar Metrics……3
    - ◊ Culture of Patient Safety……3
    - ◊ Harm Reduction……4
    - ◊ Quality Improvement……4

Enterprise-Wide Quality Efforts

- Public Reporting and Incentives……7
    - ◊ CMS Hospital Readmissions Reduction Program……7
    - ◊ CMS Hospital-Acquired Conditions (HAC) Reduction Program……8
    - ◊ CMS Value-Based Purchasing Program (VBP)……9
    - ◊ CMS Physician Quality Reporting System (PQRS)……10
    - ◊ CMS Value-Based Payment Modifier (VM)……11
    - ◊ Core Measures……12
    - ◊ Hospital Quality Incentive Program (HQIP)……19
    - ◊ Leapfrog……20
    - ◊ Colorado Department of Public Health and Environment (CDPHE)……20
    - ◊ Colorado Hospital Association (CHA)……21
    - ◊ Consumer Reports……21
- National Collaboratives……22
    - ◊ High Value Healthcare Collaborative (HVHC)……22
    - ◊ Vermont Oxford Network (VON)……23
    - ◊ Hospital Engagement Network (HEN)……23
- Inpatient Nursing Sensitive Indicators……24
    - ◊ Hospital Acquired Pressure Ulcers (HAPU)……24
    - ◊ Falls……24
    - ◊ Restraints……26
- Patient Safety & Quality Improvement Projects……28
    - ◊ Procedural Sedation……28
    - ◊ Evaluation of Medication Events……28

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# TABLE OF CONTENTS

- High Acuity Care……29
    - Cor Zeros……29
    - Daily Patient Safety Briefing……29
    - Patient Safety Intelligence (PSI) Reporting……29
- Infection Control and Prevention……30
    - Hand Hygiene Compliance……30
    - Device-Related Infections……30
    - Surgical Site Infections (SSI)……32
    - Multi-Drug Resistant Organisms (MDRO)……34
    - Healthcare-Associated Infections (HAI) Related to Construtíon……35
    - Center for Occupational Safety & Health Collaboration……35
    - Environmental Services Collaboration……36
    - Ebola Preparation……36
- Antibiotic Stewardship……37
    - Appropriate Antibiotic Utilization……37
    - Emergency Department Antibiotic Utilization Surveillance Tool……37
    - Clinical Care Guideline for Antibiotic Stewardship……38
    - Antimicrobial Stewardship Collaborations within the Community……39

Accreditation

- The Joint Commission……40
- Failure Modes and Effects Analysis (FMEA)……40
- Continual Readiness……40
- Tracers……40
- Outpatient Behavioral Health Surveys……41

Committee Structure……42

Glossary of Terms and Abbreviations……43

Contact Information and Acknowledgements……45

# EXECUTIVE SUMMARY

The list below represents a summary of key outcomes in 2014 and areas of opportunity.

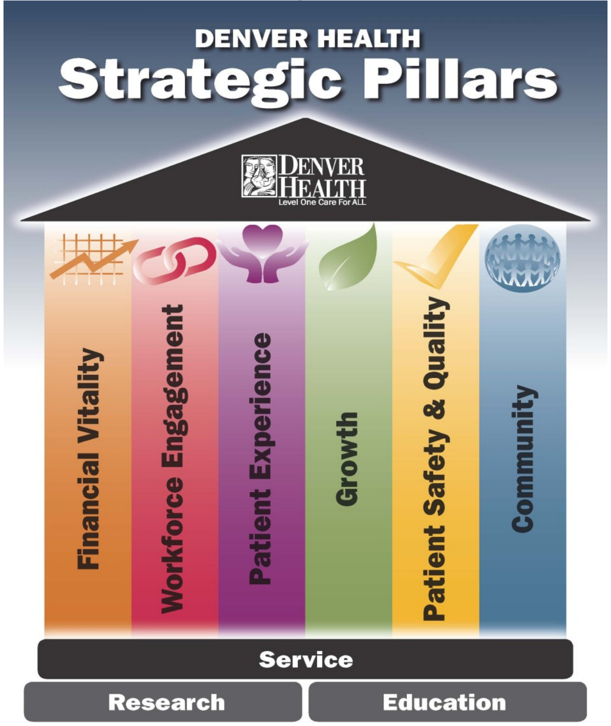
- Achieved full accreditation by the Joint Commission.
- Ranked in the top 10% of Academic Medical Centers in the US by University HealthSystem Consortium (UHC) in hospital survival for the 6th consecutive year.
- Successfully launched the Daily Patient Safety Briefing.
- Achieved 4 of 5 stars on the Annual UHC Quality and Accountability Award, placing Denver Health in the top ~1/3 of the nation's Academic Medical Centers for the 9th year in a row.
- Denver Health Community Health Services was one of 30 institutions in the US to be recognized for outstanding hypertension care through the 2014 Million Hearts Hypertension Control Champions Award.
- Achieved sufficiently low number of hospital-acquired conditions (HAC) to avoid any penalties from the Fiscal Year 2015 CMS HAC Reduction program.
- For the Fiscal Year 2015 CMS Readmissions Reduction program, Denver Health experienced the smallest penalty percentage possible (0.01% of Medicare fee-for-service DRG payments) amounting to a reduction of less than $5,000 (out of approximately $375,000 at risk).
- For the Fiscal Year 2015 CMS Value-Based Purchasing Program based on measures of clinical care, efficiency, and patient experience during inpatient hospitalizations, Denver Health experienced a 0.2% reduction in Medicare fee-for-service DRG payments amounting to approximately $75,000 in penalty (out of approximately $500,000 at risk).
- In 2014, Denver Health was awarded the second largest incentive payment ($4,067,042) in the state of Colorado for performance on the state's Hospital Quality Incentive Program (HQIP).
- Reductions in hospital acquired central line bloodstream infections were achieved in the MICU, PICU, PCU, NICU and all acute care units in 2014 compared to 2013.
- Additionally in 2014 the hospital had reductions in hospital acquired catheter associated urinary tract infections in all units compared to 2013.
- The surgical site infection ratio during the 4th quarter of 2014 was the lowest quarterly ratio in three years.
- For 7 of 12 months in 2014, DH met or exceeded the target of 90% for patients discharged with a fully reconciled medication list.

# DHHA STRATEGIC PILLARS

In 2014, Patient Safety and Quality was one of Denver Health and Hospital Authority's (DHHA) six Strategic Pillars. All were supported by the foundational strategies of service, research, and education. DHHA annually establishes enterprise-wide goals for each pillar and metrics to ascertain achievement. The Patient Safety and Quality pillar's goal was to OPTIMIZE PATIENT SAFETY AND CONTINUOUSLY IMPROVE CLINICAL QUALITY.

The areas of focus for the patient safety and quality pillar were improvements in culture of safety as measured by standardized surveys of clinical staff, reduction in preventable harm events, improvement in specific ambulatory and medication-related care processes and successful accreditation by the Joint Commission. The efforts and results are stratified into 3 domains: Culture of Patient Safety, Harm Reduction, and Quality Improvement.

**2014**


DENVER HEALTH
Strategic Pillars
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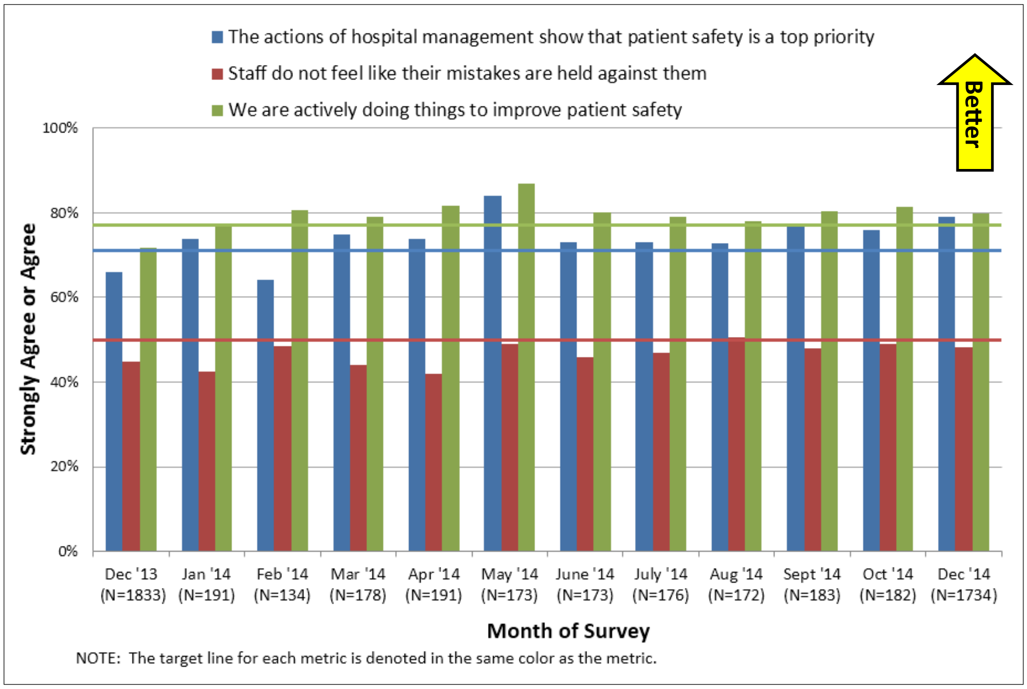
Financial Vitality
Workforce Engagement
Patient Experience
Growth
Patient Safety & Quality
Community
Service
Research
Education

# PATIENT SAFETY & QUALITY PILLAR METRICS

## CULTURE OF PATIENT SAFETY

In order to meaningfully reduce harm and improve clinical quality, we believe DHHA needs a strong culture of safety foundation. In our all employee Agency for Healthcare Research and Quality (AHRQ) Culture of Safety survey completed in 2013, we recognized areas of opportunity for improved culture. In order to track our own progress through 2014, we elected to randomly survey 10% of clinical employees every month using the three selected questions in the figure below. In 2014 we targeted a 5% improvement in each response. By the end of 2014, we achieved our goals for 2 of the 3 items.

We believe that one of the key drivers of improvement was the institution of our Daily Patient Safety Briefing in May 2014. This briefing increased attention to quality and safety events. Other drivers include increased attention to quality and safety results on Gemba rounds, and preparation for the 2014 Joint Commission survey. Also within the domain of Culture of Safety, we set a goal of achieving full accreditation on the triennial full Joint Commission Survey that took place in May 2014. The result was that we were fully accredited. All findings were successfully addressed before the end of 2014.

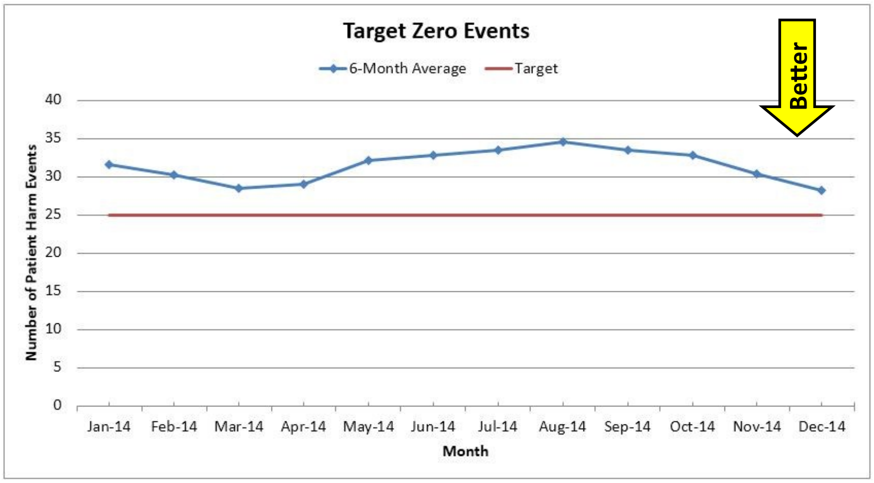


NOTE: The target line for each metric is denoted in the same color as the metric.

# PATIENT SAFETY & QUALITY PILLAR METRICS

## HARM REDUCTION

In 2013, the clinical and executive leadership of the enterprise identified 5 distinct harm event types that were a) fully adjudicated by staff in Patient Safety and Quality (PSQ), b) potentially preventable and c) targets for improvement efforts. These included publicly-reported surgical site infections, central line associated blood stream infections, hospital acquired *Clostridium difficile*, medication events with high harm scores, and falls with major injury or death. The raw count of these events constitute the “Target Zero” measure. For 2014, we set a target of reducing the raw number of target zero events by 25% compared to 2013. While we did not achieve the target, we did experience a significant reduction from the prior year baseline. Improvement efforts are described in future report sections.

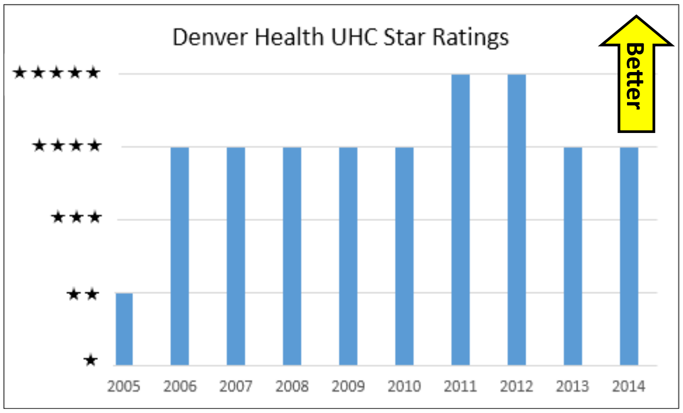


## QUALITY IMPROVEMENT

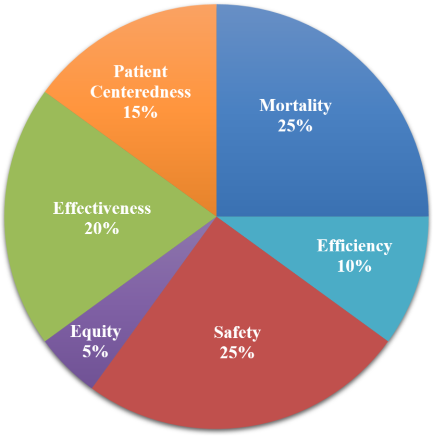
The clinical and executive leadership of the enterprise selected 3 broad metrics for quality improvement in 2014: 1) Rank on the annual University HealthSystem Consortium Quality and Accountability (UHC Q&A) scorecard, 2) Improvement on the ambulatory bundle (6 primary care performance measures), 3) inpatient and outpatient medication reconciliation performance.

### UHC Q&A

UHC created the Q&A Study in 2005 to help organizations assess their performance across a broad spectrum of high-priority dimensions of patient care. The Q&A Scorecard allows institutions to benchmark their results against other Academic Medical Centers (AMCs) in the US. In 2014, DHHA received high rankings for the domains of mortality, equity, safety, and efficiency. DHHA received 4 of 5 stars in 2014 and improved its ranking from the previous year. DHHA had placed in the best ~1/3 of approximately 100 AMCs for 9 consecutive years. However, this was lower than the DHHA 2014 target of “top 10.”



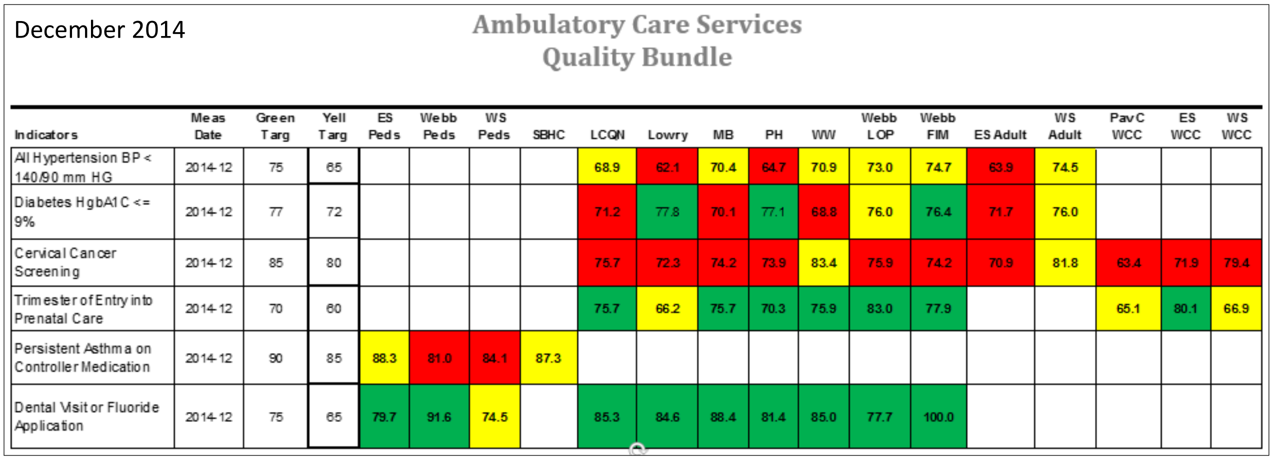
UHC Q&A Domains and Weights



# PATIENT SAFETY & QUALITY PILLAR METRICS

## AMBULATORY QUALITY BUNDLE

At the end of 2013, the department of Ambulatory Care Services (ACS) created a quality bundle constructed to measure quality performance across 6 domains of care (hypertension, diabetes, cancer screening, asthma, prenatal care, and dental care) by 16 primary care teams. A methodology was created to score teams' relative performance against aggressive targets. While some domains experienced improvement, a much larger than expected influx of new patients resulted in lower than expected performance on cervical cancer screening. This resulted in flat performance on the bundle throughout 2014.



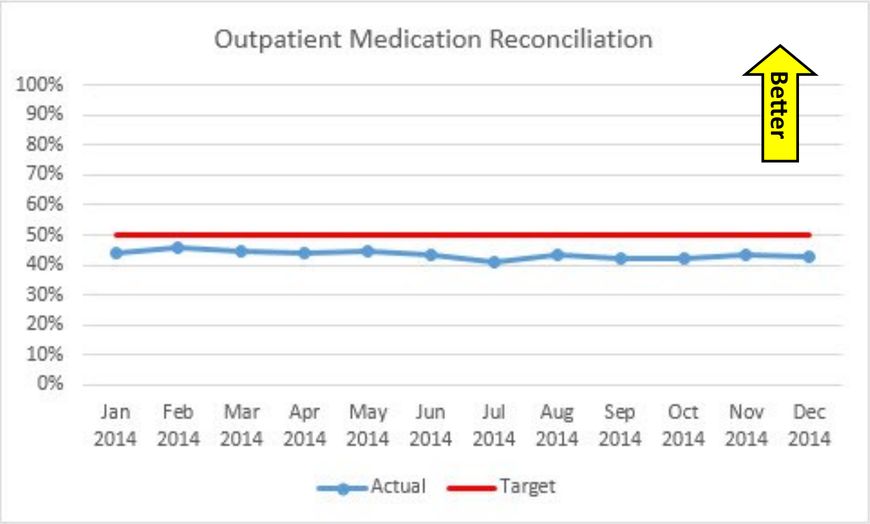
December 2014

Ambulatory Care Services
Quality Bundle

| Indicators | Meas Date | Green Targ | Yell Targ | ES Peds | Webb Peds | WS Peds | SBHC | LCQN | Lowry | MB | PH | WW | Webb LOP | Webb FIM | ES Adult | WS Adult | PavC WCC | ES WCC | WS WCC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| All Hypertension BP < 140/90 mm HG | 2014-12 | 75 | 65 | | | | | 68.9 | 62.1 | 70.4 | 64.7 | 70.9 | 73.0 | 74.7 | 63.9 | 74.5 | | | |
| Diabetes HgbA1C <= 9% | 2014-12 | 77 | 72 | | | | | 71.2 | 77.8 | 70.1 | 77.1 | 68.8 | 76.0 | 76.4 | 71.7 | 76.0 | | | |
| Cervical Cancer Screening | 2014-12 | 85 | 80 | | | | | 75.7 | 72.3 | 74.2 | 73.9 | 83.4 | 75.9 | 74.2 | 70.9 | 81.8 | 63.4 | 71.9 | 79.4 |
| Trimester of Entry into Prenatal Care | 2014-12 | 70 | 60 | | | | | 75.7 | 66.2 | 75.7 | 70.3 | 75.9 | 83.0 | 77.9 | | | 65.1 | 80.1 | 66.9 |
| Persistent Asthma on Controller Medication | 2014-12 | 90 | 85 | 88.3 | 81.0 | 84.1 | 87.3 | | | | | | | | | | | | |
| Dental Visit or Fluoride Application | 2014-12 | 75 | 65 | 79.7 | 91.6 | 74.5 | | 85.3 | 84.6 | 88.4 | 81.4 | 85.0 | 77.7 | 100.0 | | | | | |

## OUTPATIENT MEDICATION RECONCILIATION

The department of ACS chose outpatient medication reconciliation as another high priority quality metric. According to DH guidelines, reconciliation is expected only when medications are changed, added, or deleted. Since there is no clear flag in the electronic health record for when that happens, we elected an estimate that on average, across all clinic sites, at least 50% of visits would have a complete reconciliation. Despite pockets of improvement, performance remained unchanged throughout 2014. By the end of 2014, we had designed a more accurate metric to reflect clinic-specific expectations which was rolled out for 2015.

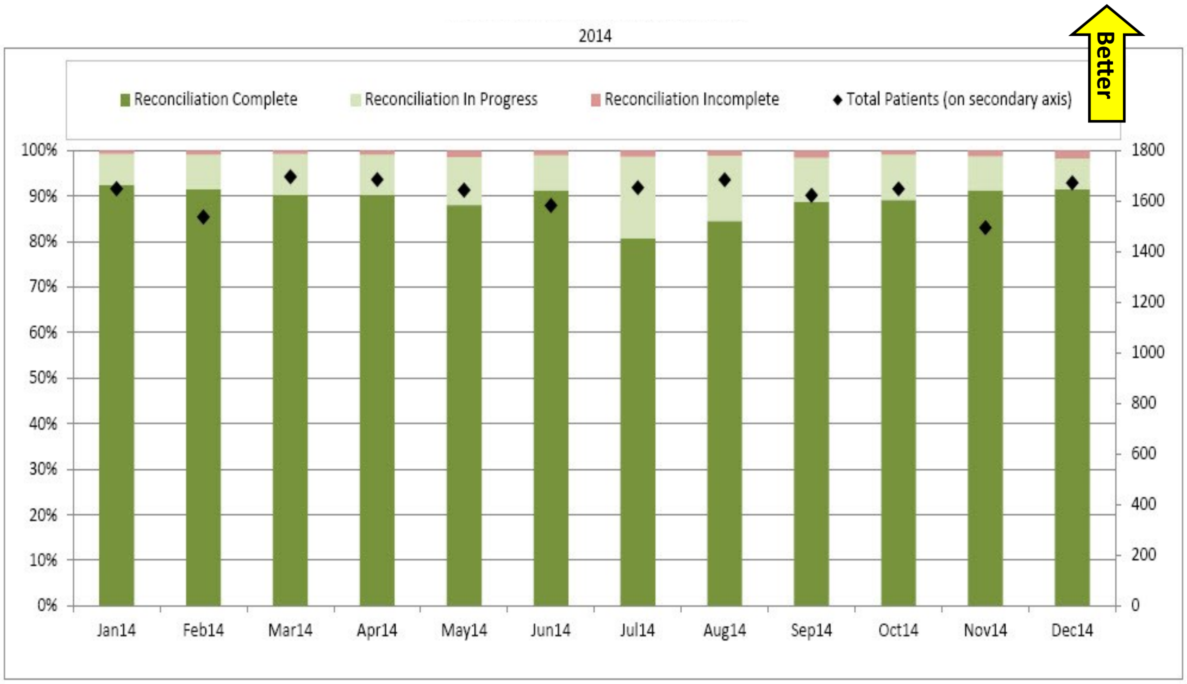


# PATIENT SAFETY & QUALITY PILLAR METRICS

## INPATIENT MEDICATION RECONCILIATION

The expectation for inpatient medication reconciliation is that every patient who is going home on medications will be given a reconciled medication list at the time of discharge. The metric excludes patients who die, leave AMA, or are discharged from the newborn nursery. Given the current electronic health record limitations, a common error made by discharging clinicians is to save the reconciliation step “in progress” rather than “complete.” We attribute the fall in performance in July and August to inexperienced new trainees who may not recognize the potential for this error. By the end of 2014, we had achieved our target of 90% for 2 consecutive months.

Monthly Discharge Medication Reconciliation



**Current Methodology:**

Discharge medication reconciliation is expected on all patients who occupy a hospital bed either in observation status or inpatient status except for patients discharged on no medications or who leave against medical advice. Medication Reconciliation is considered as complete if it was performed in SOARIAN LLC. Action must have taken place at some time during the patient's stay; before discharge took place. Patients were included in the report if they were discharged during the reporting month. Patients were excluded if they A) expired during their stay, B) were discharged AMA, or C) were discharged from either the nursery or neonatal service.

# PUBLIC REPORTING & INCENTIVES

## CMS HOSPITAL READMISSIONS REDUCTION PROGRAM—FY2014 & FY2015

The Affordable Care Act established the Hospital Readmissions Reduction Program requiring the Centers for Medicare and Medicare Services (CMS) to reduce payments to inpatient hospitals with excess readmissions beginning in fiscal year (FY) 2013, i.e. discharges as of October 1, 2012. CMS utilizes claims data to determine readmissions within 30 days of discharge from the same or another inpatient hospital.

- Applicable Conditions
  - ◊ FY2014: acute myocardial infarction (AMI), heart failure (HF), pneumonia (PN)
  - ◊ FY2015: AMI, HF, PN, chronic obstructive pulmonary disease (COPD), total hip and total knee arthroplasty (THA/TKA)
- Inclusion Criteria—Medicare Fee-For-Service (FFS) beneficiaries with Part A and Part B coverage who have continuous enrollment for the 12 months prior to admission to at least 1 month after discharge. Beneficiaries must be 65 years or older at admission.
- Exclusion Criteria—length of stay over 365 days, in-hospital death, left against medical advice, transferred to another acute care hospital
- Excess readmission ratios are risk-standardized for clinically relevant factors, such as patient demographic characteristics, comorbidities, and patient frailty. Planned readmissions are excluded.
- Financial Impact
  - ◊ 2% maximum payment reduction in FY2014 (0.98 payment adjustment factor)
    3% maximum payment reduction in FY 2015 (0.97 payment adjustment factor)
  - ◊ Reduction applies to the Base Operating DRG payment amount (including wage-adjustment and new technology amounts) for discharges of Medicare FFS patients (estimated total reduction of $5,000 for FY 2015)

| 30-Day Readmission Measures | AMI | HF | PN | COPD | THA/ TKA | DHHA Payment Adjustment Factor |
|---|---|---|---|---|---|---|
| **Fiscal Year 2014**<br>Performance period 07/01/09—06/30/12<br>Payment reduction applied to discharges 10/01/13—9/30/14 | | | | | | ↑ Better |
| Number of Cases | 22 | 81 | 47 | n/a | n/a | — |
| Excess Readmission Ratio | 0.0000 | 1.0347 | 0.9579 | n/a | n/a | 0.9996 |
| **Fiscal Year 2015**<br>Performance period 07/01/10—06/30/13<br>Payment reduction applied to discharges 10/01/14—9/30/15 | | | | | | |
| Number of Cases | 32 | 78 | 36 | 58 | 27 | — |
| Excess Readmission Ratio | 0.9658 | 1.0071 | 0.9850 | 0.9464 | 0.9311 | 0.9999 |

0.04% reduction

0.01% reduction

**Next Steps:**

- Educate the medical staff about discharge status documentation and the importance of indicating a planned readmission.
- Educate the coding staff to utilize the planned readmission discharge status options if applicable.
- Focus on heart failure patients since this is the only cohort with higher than expected readmission rates.

**Future Impact:**

- FY2016: No changes in methodology
- FY2017: Additional cohort of coronary artery bypass graft (CABG) surgery. Expands the pneumonia cohort to include patients with a principal diagnosis of aspiration pneumonia or patients with a principal diagnosis of sepsis or respiratory failure who also have a secondary diagnosis of pneumonia present on admission.

# PUBLIC REPORTING & INCENTIVES

## CMS HOSPITAL-ACQUIRED CONDITIONS REDUCTION PROGRAM—2015

The Affordable Care Act established the Hospital-Acquired Conditions (HAC) Reduction Program to encourage hospitals to reduce preventable conditions that patients did not have upon admission to the hospital, but which developed during the hospital stay. Hospitals that rank in the worst-performing quartile with respect to risk-adjusted HAC quality measures will receive a payment reduction beginning in FY2015 (discharges beginning on October 1, 2014).

- Patient Safety Domain — AHRQ Patient Safety Indicator Composite measure (PSI 90) is an aggregate of the 8 PSIs shown below. PSI90 is calculated from Medicare FFS claims for inpatient discharges during the performance period.

| | |
|---|---|
| PSI 03—Pressure Ulcer | PSI 06—Iatrogenic Pneumothorax |
| PSI 07—Central Venous Catheter-Related Bloodstream Infections | PSI 08—Postoperative Hip Fracture |
| PSI 12—Perioperative Pulmonary Embolism or Deep Vein Thrombosis | PSI 13—Postoperative Sepsis |
| PSI 14—Postoperative Wound Dehiscence | PSI 15—Accidental Puncture or Laceration |

- Healthcare-Associated Infections (HAI) Domain—Centers for Disease Control and Prevention (CDC) National Healthcare Safety Network (NHSN) uses chart-abstracted surveillance data reported by our Infection Prevention department for infections occurring during the performance period. Standardized infection ratios (SIRs) provide risk-adjustment at the hospital-level and patient-care unit level.
- Financial Impact
    - ◊ 1% maximum payment reduction in FY2015
    - ◊ Reduction applies to the Base Operating DRG payment amount after adjustments have occurred for the Hospital Value-Based Purchasing and Readmissions Reduction Programs for discharges of Medicare FFS patients
    - ◊ DHHA avoided payment reductions in FY2015

| **Patient Safety Domain (35% of score)**<br>Performance period 07/01/11—06/30/13<br>Payment reduction applied to discharges 10/01/13—9/30/14 | **Decile Rank** |
|---|---|
| AHRQ PSI 90 | 9th decile |
| **Healthcare-Associated Infections Domain (65% of score)**<br>Performance period 01/01/12—12/31/13<br>Payment reduction applied to discharges 10/01/13—9/30/14 | |
| Central Line-Associated Bloodstream Infection (CLABSI) | 3rd decile |
| Catheter-Associated Urinary Tract Infection (CAUTI) | 5th decile |
| **Total HAC Score** | **5.75 of 10** |

Better

0% reduction

**Next Steps:**

- Clinical Documentation and Improvement (CDI) team will review all PSI events to determine if the event was due to a coding error, inaccurate documentation, or true HAC. For efforts to reduce HAIs, see the Infection Prevention section of this report.

**Future Impact:**

- CMS will publicly report hospital-specific results on Hospital Compare in December 2015.
- FY2016: program expands to include surgical site infections for colon and hysterectomy procedures
- FY2017: program further expands to include Methicillin-resistant *Staphylococcus aureus* bacteremia and *Clostridium difficile* infections

# PUBLIC REPORTING & INCENTIVES

## CMS HOSPITAL VALUE-BASED PURCHASING (VBP) PROGRAM — FY 2015

In October 2012, Medicare began incentivizing hospitals to provide high-quality care through the Hospital Value-Based Purchasing (VBP) Program. Hospitals earn an achievement score and an improvement score for each measure, and the higher of these two scores determines total points.

**0.2% Penalty**

- Financial Impact
  - ◊ Program applies a 1.5% reduction in Base operating DRG for Medicare FFS discharges in FY2015
  - ◊ Ability to earn back up to 3% based on performance
  - ◊ DHHA experienced a net 0.2% reduction in Medicare FFS DRG payments (approximately $75,000)

| **Clinical Process of Care Domain (20%)**<br>Data Source: CMS Core Measures | | Baseline Rate (01/01/11-12/31/11) | Performance Rate (01/01/13-12/31/13) | Improvement Points | Achievement Points | Domain Score |
|---|---|---|---|---|---|---|
| AMI-8a | Primary PCI received within 90 minutes of hospital arrival | 100% | 87.1% | 0 | 0 | **34** |
| SCIP-Inf-1 | Prophylactic antibiotic received within one hour prior to surgical incision | 97.8% | 97.6% | 0 | 0 | |
| SCIP-Inf-2 | Prophylactic antibiotic selection for surgical patients | 98.7% | 99.0% | 2 | **3** | |
| SCIP-Inf-3 | Prophylactic antibiotics discontinued within 24 hours after surgery end time | 96.8% | 96.0% | 0 | 0 | |
| SCIP-Inf-9 | Urinary catheter removal on postoperative day 1 or postoperative day 2 | 93.3% | 97.6% | **6** | 5 | |
| HF-1 | Heart failure discharge instructions | 89.7% | 92.8% | **3** | 0 | |
| PN-3b | Blood cultures performed in the emergency department prior to initial antibiotic | 94.1% | 88.1% | 0 | 0 | |
| PN-6 | Initial antibiotic selection for CAP in immunocompetent patient | 95.4% | 98.3% | 6 | **6** | |
| SCIP-Card-2 | Surgery patients on beta-blocker prior to arrival receive it perioperatively | 100% | 100% | 0 | **10** | |
| SCIP-VTE-2 | VTE prophylaxis within 24 hours prior to surgery to 24 hours after surgery | 98.4% | 98.9% | 2 | **6** | |
| **Patient Experience of Care Domain (30%)**<br>Data Source: HCAHPS | | Baseline Rate (01/01/11-12/31/11) | Performance Rate (01/01/13-12/31/13) | Improvement Points | Achievement Points | Domain Score |
| Communication with nurses | | 74.2% | 74.6% | 0 | 0 | **24**<br>(8 base points + 16 consistency points) |
| Communication with doctors | | 78.2% | 78.0% | 0 | 0 | |
| Responsiveness of hospital staff | | 58.3% | 58.8% | 0 | 0 | |
| Pain management | | 67.6% | 65.1% | 0 | 0 | |
| Communication about medicines | | 63.4% | 64.4% | 1 | **3** | |
| Cleanliness and quietness of hospital environment | | 61.2% | 61.1% | 0 | 0 | |
| Discharge information | | 82.3% | 85.6% | **4** | 3 | |
| Overall rating of hospital | | 69.2% | 68.2% | 0 | **1** | |
| **Outcome Domain (30%)**<br>Data Sources: AHRQ, NHSN | | Baseline Rate (AHRQ 10/15/10-6/30/11 NHSN 1/1/11-12/31/11) | Performance Rate (AHRQ 10/15/12-6/30/13 NHSN 2/1/13-12/31/13) | Improvement Points | Achievement Points | Domain Score |
| PSI-90 | AHRQ complication/patient safety composite | 0.711 | 0.654 | **2** | 0 | **25** |
| CLABSI | NHSN Central Line-Associated Blood Stream Infection (SIR) | 0.348 | 0.311 | 1 | **3** | |
| **Efficiency Domain (20%)**<br>Data Source: CMS Claims | | Baseline Rate 01/01/11-12/31/11) | Performance Rate (01/01/13-12/31/13) | Improvement Points | Achievement Points | Domain Score |
| MSPB | Medicare spending per beneficiary | 0.901 | 0.893 | 1 | 6 | **60** |

*Measures which did not meet minimum sample size are excluded from the table. These include AMI-7a Fibrinolytic therapy received within 30 minutes of hospital arrival, SCIP-Inf-4 Cardiac surgery patients with controlled 6 a.m. postoperative serum glucose, AMI 30-day mortality rate, Heart failure 30-day mortality rate, Pneumonia 30-day mortality rate.

**Next Steps:**

Measures approved for future fiscal years are being evaluated by the appropriate teams.

**Future Impact:**

- FY2016: 1.75% automatic reduction. Program adds 3 measures (IMM-2 Influenza immunization, NHSN CAUTI and NHSN SSI for colon and abdominal hysterectomy) and retires 4 measures (AMI-8a, SCIP-Inf-1, HF-1, PN-3b).
- FY2017: 2.0% automatic reduction.

# PUBLIC REPORTING & INCENTIVES

## CMS PHYSICIAN QUALITY REPORTING SYSTEM (PQRS)—PY2014

The Physician Quality Reporting System (PQRS) is a CMS program that uses a combination of incentive payments and payment adjustments to promote reporting of quality information by eligible professionals (EPs). As a group practice, DHHA reports one set of quality measures for all EPs using the Registry reporting option. Incentives and penalties are applied to payments during the program year (PY) and future years.

- Inclusion Criteria—Medicare FFS beneficiaries who received care covered by Physician Fee Schedule (PFS) services
- Financial Impact
    - ◊ 0.5% incentive payment in 2014 for satisfactorily reporting in PY2014 (2014 PQRS Incentive)
    - ◊ -2.0% payment reduction in 2016 for not successfully reporting PQRS measures in PY2014 (2016 PQRS Penalty)
    - ◊ Quality and cost performance for PY2014 measures will determine the 2016 Value-Based Modifier Payment
    - ◊ Payments apply to the total Part B PFS allowed charges for covered professional services
    - ◊ DHHA received $24,166 for the 2014 PQRS Incentive payment and avoided approximately $100,000 in payment reduction in 2016.

| Measure Number | Measure Name | Eligible Cases | Performance Rate | Benchmark ± 1 SD |
|---|---|---|---|---|
| **Clinical Care** | | | | |
| 39 | Screening or therapy for osteoporosis for women aged 65 years and older | 689 | 46.9% | 34.8% ± 30.0% |
| 111 | Pneumococcal vaccination for patients 60 years and older | 1,198 | 71.7% | 44.9% ± 30.9% |
| 112 | Breast cancer screening for women aged 40-69 | 820 | 62.7% | 45.7% ± 27.7% |
| 113 | Colorectal cancer screening | 1,654 | 49.8% | 46.0% ± 30.9% |
| **Population Health** | | | | |
| 110 | Influenza immunization | 1,434 | 60.3% | 40.6% ± 27.8% |
| 183 | Hepatitis A vaccination in patients with Hepatitis C virus | 61 | 78.7% | 57.1% ± 31.8% |
| **Patient Safety** | | | | |
| 145 | Exposure time reported for procedures using fluoroscopy | 289 | 76.5% | 73.9% ± 27.3% |
| 192 | Complications within 30 days following cataract surgery requiring additional surgical procedures | 108 | 0.9% (lower is better) | 10.5% ± 29.5% |
| **Coordinated Care** | | | | |
| 225 | Radiology reminder system for mammograms | 274 | 100% | 88.7% ± 24.3% |

**Next Steps:**

- Review results with departments that impacted the metrics.
- Determine whether to continue PQRS reporting via Registry or change to EHR Vendor submission once live on Epic.

**Future Impact:**

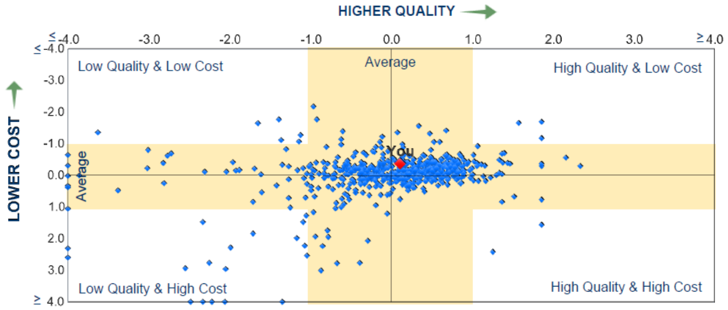
- PY2015: Incentive payments end.
  -2.0% payment reduction in 2017 for not successfully reporting PQRS measures in PY2015 (2017 PQRS Penalty).
- PY2016: -2.0% payment reduction in 2018 for not successfully reporting PQRS measures in PY2016 (2018 PQRS Penalty).

# PUBLIC REPORTING & INCENTIVES

## CMS VALUE-BASED PAYMENT MODIFIER (VM) - PY2013

- CMS created the Value-Based Payment Modifier (VM) to provide differential payments based on the quality of care furnished compared to cost. CMS provides a Quality and Resource Use Report (QRUR) each fall based on the prior year's data.
- Inclusion Criteria—Medicare FFS beneficiaries who received the plurality of their primary care services at DHHA via Physician Fee Schedule (PFS) services
- Exclusion Criteria—encounters at Federally Qualified Health Centers since they do not participate in PFS services
- Financial Impact (applied to total Part B PFS allowed charges for covered professional services):
  - ◊ -1% automatic reduction in 2015 if not participating in PQRS in PY2013 (2015 Value Modifier Penalty)
  - ◊ -1% to 2% payment adjustment in 2015 based on quality and cost performance if participate in optional quality tiering program in PY2013 (2015 Quality Tiering Adjustment)
  - ◊ DHHA avoided a $50,000 VM Penalty and was neither penalized nor rewarded for the Quality Tiering program.

| Domain | Eligible Cases | Performance Rate | | Benchmark ± 1 SD | Domain Score (SD from national mean) |
|---|---|---|---|---|---|
| **Quality** | | | | | |
| Breast cancer screening for women ages 50-74 | 23 | 43.5% | 🔴 | 62.6% ± 12.6% | 0.11 ↑ Better |
| Elderly patients who receive at least one high risk medication | 29 | 0% | 🟢 | 24.3% ± 7.4% | |
| Elderly patients who receive at least two different high risk medications | 29 | 0% | 🟢 | 6.9% ± 3.5% | |
| Bacterial Pneumonia hospitalization rate per 1,000 beneficiaries | 176 | 0.0 | 🟢 | 12.4 ± 10.7 | |
| Urinary Tract Infection hospitalization rate per 1,000 beneficiaries | 176 | 0.0 | 🟢 | 8.1 ± 8.7 | |
| Dehydration hospitalization rate per 1,000 beneficiaries | 176 | 0.0 | 🟢 | 4.6 ± 5.0 | |
| Diabetes hospitalization rate per 1,000 beneficiaries | 24 | 0.0 | 🟢 | 18.9 ± 20.3 | |
| COPD or Asthma hospitalization rate per 1,000 beneficiaries | 17 | 59.8 | 🟡 | 78.1 ± 49.9 | |
| Heart Failure hospitalization rate per 1,000 beneficiaries | 16 | 427.2 | 🔴 | 100.7 ± 52.2 | |
| **Per Capita Costs—Cost Domain** | | | | | |
| All beneficiaries | 143 | $7,666 | 🟢 | $10,086 ± $1,561 | -0.39 ↓ Better |
| Coronary Artery Disease | 27 | $17,683 | 🟡 | $17,183 ± $2,990 | |



**Next Steps:**

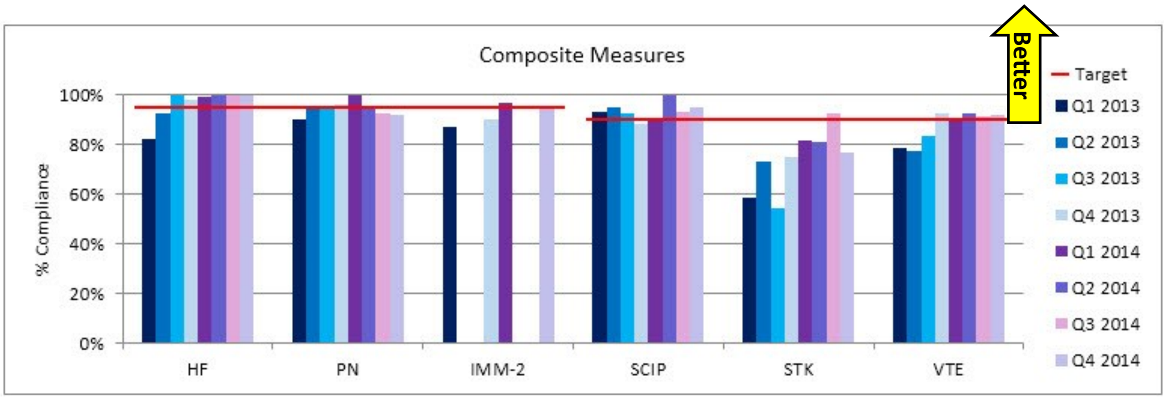
- Claims-based reporting is no longer an option for group practices. DHHA will participate in a PQRS-certified Registry in 2014.

**Future Impact:**

- PY2014: -2% reduction in 2016 if not successfully reporting PQRS measures in PY2014 (2016 Value Modifier Penalty)
  -2% to 3% payment adjustment in 2016 based on mandatory quality tiering in PY2014 (2016 Quality Tiering)
- PY2015: -4% reduction in 2017 if not successfully reporting PQRS measures in PY2015 (2017 Value Modifier Penalty)
  -4% to 5% payment adjustment in 2017 based on mandatory quality tiering in PY2015 (2017 Quality Tiering)

# PUBLIC REPORTING & INCENTIVES

## CORE MEASURES—INPATIENT

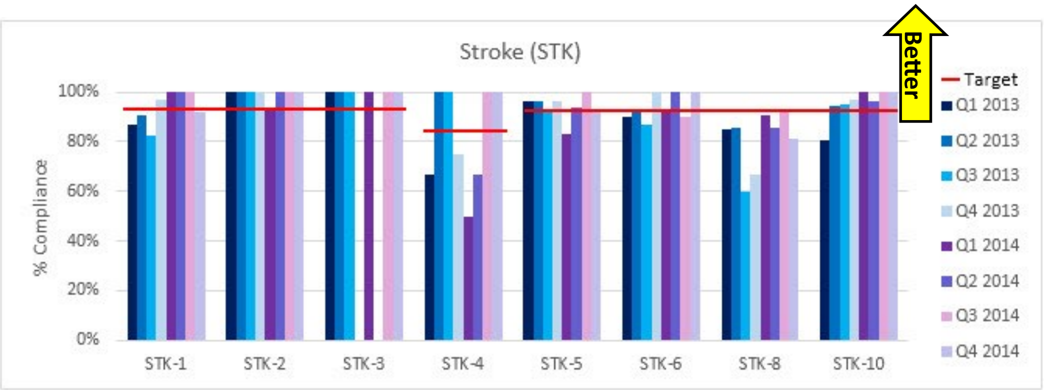


### Composite Measures

- 2014 Overall Results
    - ◊ 99.7% (348 of 349) heart failure patients had documentation in the medical record that left ventricular function was assessed before arrival, during hospitalization, or planned for after discharge (HF-2)
    - ◊ 95.1% (58 of 61) immunocompetent patients with community-acquired pneumonia received antibiotics consistent with current guidelines during first 24 hours of hospitalization (PN-6)
    - ◊ 95.7% (484 of 506) inpatient discharges had documentation in the medical record of contraindications to the vaccine, refusal of the vaccine, receipt of the vaccine during current season but prior to admission, or administration of the vaccine during current hospitalization (IMM-2)
    - ◊ 94.5% (308 of 326) passed all applicable measures in the Surgical Care Improvement Project (SCIP Composite)
    - ◊ 83.3% (90 of 108) passed all applicable measures for Stroke (STK Composite)
    - ◊ 91.5% (526 of 575) passed all applicable measures for Venous Thromboembolism (VTE Composite)
- PI Activity
    - ◊ Individualized education to staff involved in failed cases
- Future Impact
    - ◊ CMS is retiring all Heart Failure (HF) and Pneumonia (PN) measures effective Q1 2015.
    - ◊ CY2015: The Joint Commission will allow hospitals flexibility in reporting options (chart-abstracted, electronic clinical quality measures, or both) and measure sets (minimum of 6). Denver Health chose chart-abstraction for the Immunization measure set (IMM-2).

# PUBLIC REPORTING & INCENTIVES

## CORE MEASURES—INPATIENT

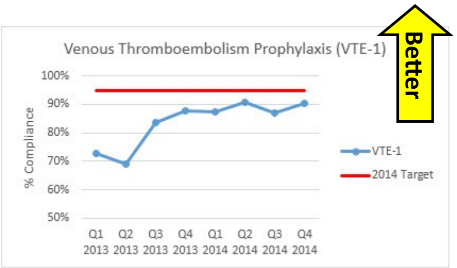


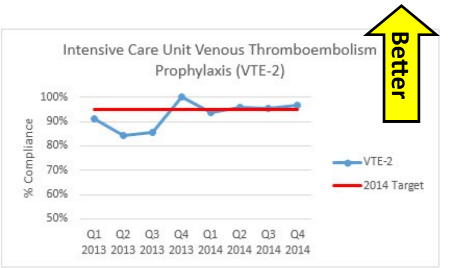
### Stroke Measures (STK)

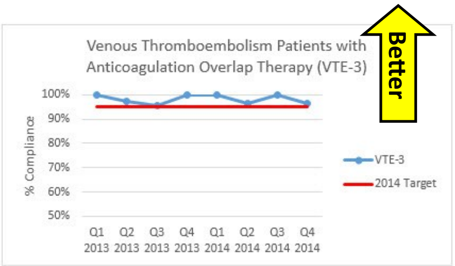
- 2014 Overall Results
  - ◊ 97.8% (89 of 91) ischemic and hemorrhagic stroke patients received VTE prophylaxis or have documentation of why it was not given the day of or the day after hospital admission (STK-1)
  - ◊ 98.7% (76 of 77) ischemic stroke patients were discharged on antithrombotic therapy (STK-2)
  - ◊ 100% (10 of 10) ischemic stroke patients with atrial fibrillation/flutter were prescribed anticoagulation therapy at hospital discharge (STK-3)
  - ◊ 78.6% (11 of 14) acute ischemic stroke patients who arrived at the hospital within 2 hours of last known well time received IV t-PA within 3 hours of last known well time (STK-4)
  - ◊ 93.2% (55 of 59) ischemic stroke patients received antithrombotic therapy by the end of hospital day 2 (STK-5)
  - ◊ 96.3% (52 of 54) ischemic stroke patients were discharged on statin medication (STK-6)
  - ◊ 86.7% (52 of 60) ischemic or hemorrhagic stroke patients were given educational materials at discharge addressing required stroke education elements (STK-8)
  - ◊ 98.9% (91 of 92) ischemic or hemorrhagic stroke patients were assessed for rehabilitation services (STK-10)
- PI Activity
  - ◊ Discharge instruction process was revised. On the Discharge Assessment Screen, if a provider or nurse answers "yes" to the question "Did the patient have a stroke during this visit?", the required stroke education elements are automatically added to the discharge instructions. This question was changed to "Is this patient at risk for stroke?" because staff were not responding affirmatively for patients who had a stroke prior to hospital arrival.
- Future Impact
  - ◊ CMS is retiring STK-2, STK-3, STK-5, STK-10 effective Q1 2015.
  - ◊ CY2015: The Joint Commission will allow hospitals flexibility in reporting options (chart-abstracted, electronic clinical quality measures, or both) and measure sets (minimum of 6). Denver Health chose chart-abstraction for the Stroke measure set (STK-1, STK-2, STK-3, STK-4, STK-5, STK-6, STK-8, STK-10).

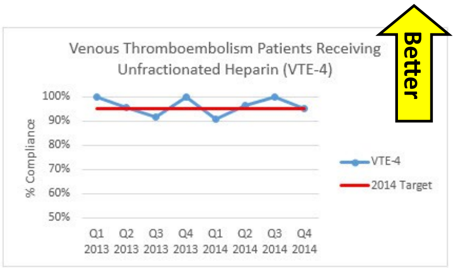
# PUBLIC REPORTING & INCENTIVES

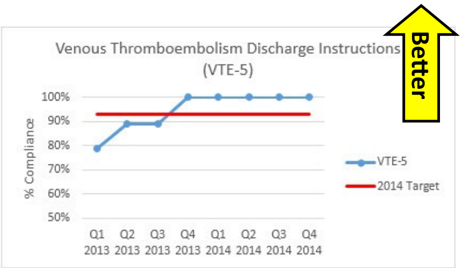
## CORE MEASURES—INPATIENT

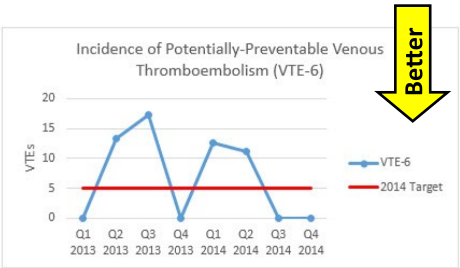










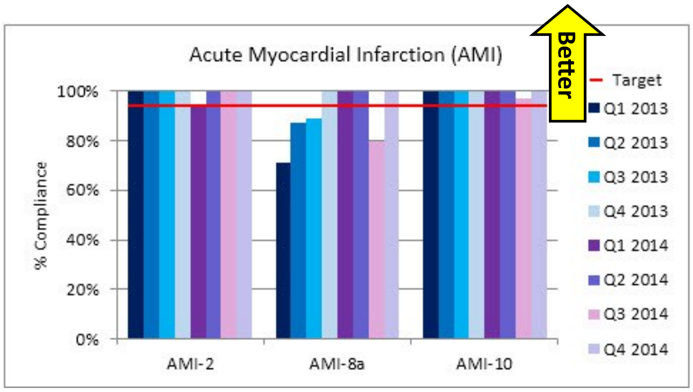


## Venous Thromboembolism (VTE)

- 2014 Overall Results
  - ◊ 88.9% (295 of 332) patients received VTE prophylaxis or have documentation of why it was not given by end of hospital day 2 (VTE-1)
  - ◊ 95.3% (123 of 129) ICU patients received VTE prophylaxis or have documentation of why it was not given within one day of ICU admission (VTE-2)
  - ◊ 98.1% (106 of 108) VTE patients received an overlap of parenteral anticoagulation and warfarin therapy (VTE-3)
  - ◊ 95.7% (88 of 92) VTE patients receiving intravenous Unfractionated Heparin with dosages had their platelet counts monitored using defined parameters such as a nomogram or protocol (VTE-4)
  - ◊ 100% (20 of 20) VTE patients on warfarin received written discharge instructions that included required warfarin education elements (VTE-5)
  - ◊ 5.9% (2 of 34) patients not receiving VTE prophylaxis developed a VTE during hospitalization (VTE-6)
- PI Activity
  - ◊ Screening tool added to admit order that provides documentation for not providing prophylaxis for patients without a VTE diagnosis
- Future Impact
  - ◊ CMS is retiring VTE-4 effective Q1 2015.
  - ◊ CY2015: The Joint Commission will allow hospitals flexibility in reporting options (chart-abstracted, electronic clinical quality measures, or both) and measure sets (minimum of 6). Denver Health chose chart-abstraction for the VTE measure set (VTE-1, VTE-2, VTE-3, VTE-5, VTE-6).

# PUBLIC REPORTING & INCENTIVES

## CORE MEASURES—INPATIENT

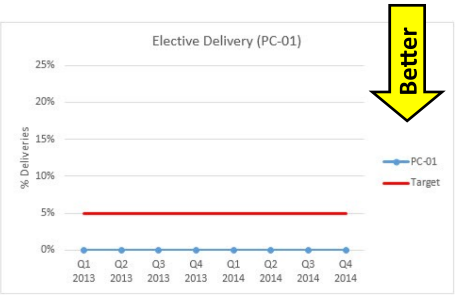


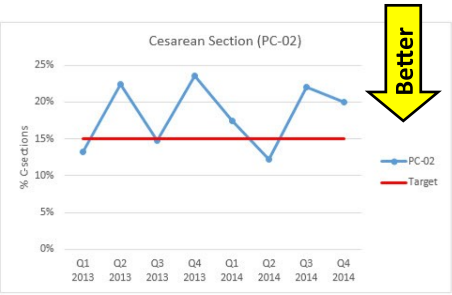
### Acute Myocardial Infarction (AMI)

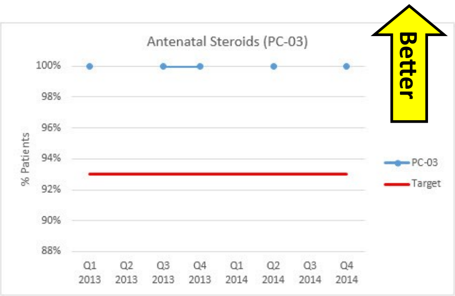
- 2014 Overall Results
    - 98.6% (146 of 148) AMI patients were prescribed aspirin at hospital discharge (AMI-2)
    - 97.1% (34 of 35) AMI patients received primary percutaneous coronary intervention within 90 minutes of hospital arrival (AMI-8a)
    - 99.3% (148 of 149) AMI patients were prescribed a statin at hospital discharge (AMI-10)
- PI Activity
    - Case-level provider education focused on review of discharge medication list and documentation of reason for not prescribing aspirin or statin at discharge.
- Future Impact
    - CMS retired all AMI measures effective Q1 2015.

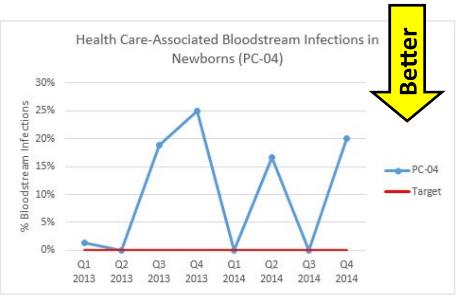
# PUBLIC REPORTING & INCENTIVES

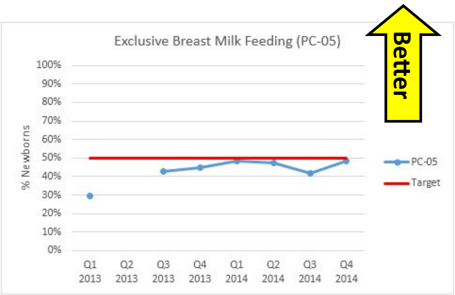
## CORE MEASURES—INPATIENT









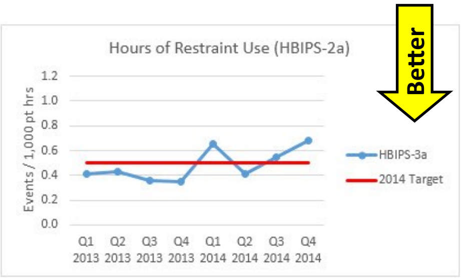


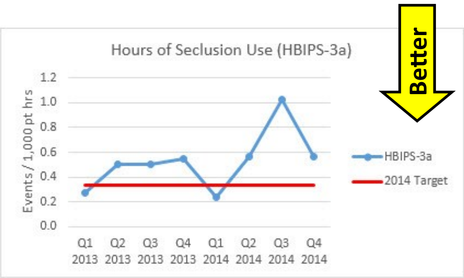
## Perinatal Care Conditions (PC)

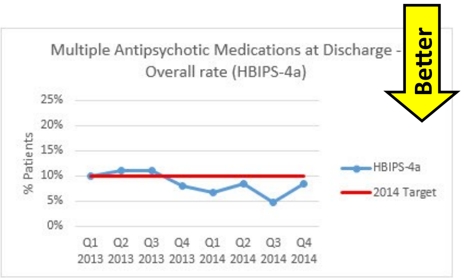
- 2014 Overall Results
  - 0% (0 of 67) patients with elective vaginal delivery or elective cesarean section with ≥37 or <39 weeks gestation completed (PC-01)
  - 17.9% (34 of 190) nulliparous women with a term, singleton baby in a vertex position were delivered by cesarean section (PC-02)
  - 100% (5 of 5) patients at risk of preterm delivery at 24-32 weeks gestation received antenatal steroids prior to delivering preterm newborn (PC-03)
  - 9.1% (3 of 33) high risk newborns diagnosed with septicemia or bacteremia (PC-04)
  - 46.5% (193 of 415) newborns were fed breast milk only since birth (PC-05)
- PI Activity
  - Clinical Documentation Integrity (CDI) team performed secondary review on all failed cases
  - PSQ and CDI developed educational materials to help providers appropriately document when septicemia/ bacteremia was present at birth or ruled out. The CDI team delivered the provider education.
  - Quarterly data presented at bimonthly Breast Feeding Council and discussed importance of appropriate documentation as it relates to allowable reason for providing baby one or more formula feedings after mother declares exclusive breastfeeding preference.
  - Supported efforts to implement program for donor breast milk on inpatient units.
- Future Impact
  - 2015: The Joint Commission requires the Perinatal Care measure set because there are >300 live births each year (PC-01, PC-02, PC-03, PC-04, PC-05).

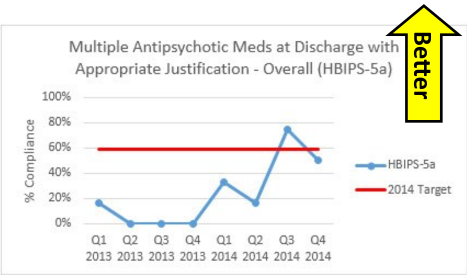
# PUBLIC REPORTING & INCENTIVES

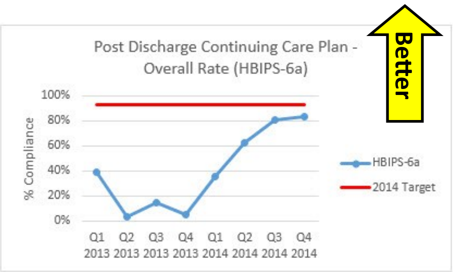
## CORE MEASURES– BEHAVIORAL HEALTH

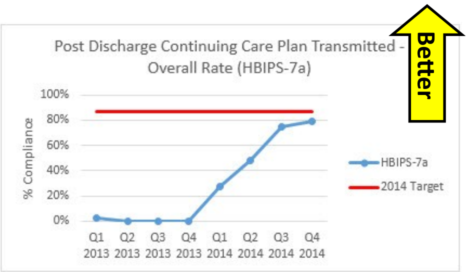










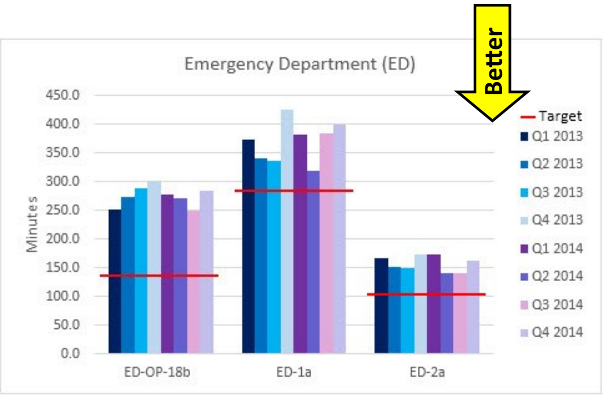


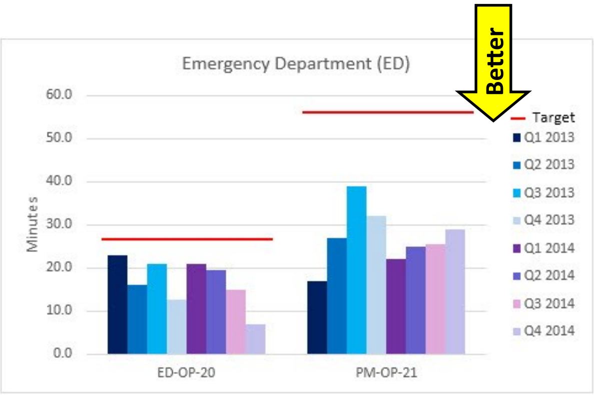
### Hospital-Based Inpatient Psychiatric Services (HBIPS)

- 2014 Overall Results
  - ◊ 0.57 hours in physical restraints per 1000 psychiatric inpatient hours (HBIPS-2a)
  - ◊ 0.60 hours in seclusion per 1000 psychiatric inpatient hours (HBIPS-3a)
  - ◊ 7.2% (23 of 321) psychiatric inpatients were discharged on multiple antipsychotic medications (HBIPS-4a)
  - ◊ 42.1% (8 of 19) psychiatric inpatients discharged on multiple antipsychotic medications had appropriate justification (HBIPS-5a)
  - ◊ 66.7% (384 of 576) psychiatric inpatients were discharged with a continuing care plan (HBIPS-6a)
  - ◊ 58.2% (335 of 576) psychiatric inpatients had the post discharge continuing care plan transmitted to the next level of care (HBIPS-7a)
- PI Activity
  - ◊ Created standard work document outlining required elements in the continuing care plan and identified departments (provider, nursing, clinical social work) responsible for completing each element. Revised documentation screens to include elements for method of transmission of continuing care plan
  - ◊ Worked with providers and pharmacy to streamline medication reconciliation process.
- Future Impact
  - ◊ CMS continues to monitor the HBIPS measures.
  - ◊ 2015: The Joint Commission offers HBIPS as a ORYX measure set but DHHA does not participate.

# PUBLIC REPORTING & INCENTIVES

## CORE MEASURES—EMERGENCY DEPARTMENT & AMBULATORY SURGERY





### Emergency Department (ED)

- 2014 Overall Results
    - 372 minutes is the median time from ED arrival to ED departure for patients admitted to the hospital (ED-1a)
    - 155 minutes is the median time from admit decision to ED departure for patients admitted to the hospital (ED-2a)
    - 271 minutes is the median time from ED arrival to ED departure for patients discharged from the ED (ED-OP-18b)
    - 16 minutes is the median time to provider contact for ED patients (ED-OP-20)
    - 25 minutes is the median time to pain management in the ED for long bone fractures (PM-OP-21)
- PI Activity
    - In mid 2014, DHHA launched the product of intensive planning on ED flow. The redesign work was focused on reducing the time from presentation to evaluation. The new processes rolled out in late June, 2014 and resulted in dramatic reductions in time to provider contact. This is evident in the improvement seen in ED-OP-20 above.
- Future Impact
    - CY2015: DHHA chose chart-abstraction for The Joint Commission ED measure set (ED-1 and ED-2).

### Hospital Outpatient (HOP)

- ORYX Measure set offered by The Joint Commission which is composed of 11 ED and ambulatory surgery measures

| Measure ID | Measure Name | 2014 Results |
|---|---|---|
| SCIP-OP-6 | Prophylactic antibiotics initiated within 1 hour prior to surgical incision | 96.3% (207 of 215) |
| SCIP-OP-7 | Appropriate prophylactic antibiotics | 97.5% (274 of 281) |
| ED-OP-18 | Median time from ED arrival to ED departure for discharged ED patients | 271 minutes (n=322) |
| ED-OP-20 | Median time from ED arrival to provider contact | 16 minutes (n=355) |
| PM-OP-21 | Median time to pain management for long bone fracture ED patients | 25 minutes (n=265) |
| STK-OP-23 | Head CT or MRI scan results within 45 minutes of ED arrival for stroke patients | 60% (3 of 5) |

* DHHA had zero cases in 2014 for AMI-OP-1 Median time to fibrinolysis, AMI-OP-2 Fibrinolytic therapy within 30 minutes, AMI-OP-3 Median time to facility transfer for acute coronary intervention, OP-4 Aspirin at arrival for AMI/chest pain, OP-5 Median time to ECG for AMI/chest/pain

- Future Impact:
    - CMS is retiring SCIP-OP-6 and SCIP-OP-7 effective Q1 2015.
    - CY2015: DHHA will send HOP measure set to The Joint Commission.

# PUBLIC REPORTING & INCENTIVES

## HOSPITAL QUALITY INCENTIVE PROGRAM (HQIP)

The Colorado Department of Health Care Policy and Financing (HCPF) started HQIP in 2011 to incentivize hospitals for improving health care and patient outcomes. The state's Medicaid agency retains a percentage of each hospital's payment and distributes incentive payments based on each hospital's performance on selected nationally recognized measures.

In 2014, DHHA received the second largest incentive payment in the state for performance on the HQIP measures.

| Measure Name | Model Year 2013-2014 | | | Model Year 2014-2015 | | |
|---|---|---|---|---|---|---|
| | Rate/Result | Time Period | Points | Rate/Result | Time Period | Points |
| Emergency Department process | NA | NA | NA | Intervention #1: Yes<br>Intervention #2: Yes<br>Intervention #3: Yes | CY 2014 | 6 of 6 |
| Elective Delivery between 37 and 39 weeks gestation | 1.3% | CY 2012 | 10 of 10 | 0.34% | CY 2013 | 10 of 10 |
| Caesarean Section | 15.9% | CY 2012 | 5 of 10 | 19.11% | CY 2013 | 5 of 10 |
| 30-Day All Cause Readmissions (Medicaid only) | 10.92% | July 1, 2011 – June 30, 2012 | 3 of 10 | 11.83% | July 1, 2012 – June 30, 2013 | 3 of 10 |
| Postoperative Pulmonary Embolism or Deep Vein Thrombosis (PPE/DVT) | Same as statewide average | CY 2011 | 5 of 10 | Lower than statewide avg | CY 2012 | 0 of 10 |
| Central Line-Associated Blood Stream Infection (CLABSI) | Better than expected | Aug 1, 2011 - July 31, 2012 | 10 of 10 | Better than nat'l avg | Aug 1, 2012 - July 31, 2013 | NA |
| INCENTIVE PAYMENT | $2,882,251 | | 33 of 50 | $4,067,042 | | 24 of 46 |

# PUBLIC REPORTING & INCENTIVES

## LEAPFROG

THE LEAPFROG GROUP

| HOSPITAL SAFETY SCORE | Fall 2012 | Spring 2013 | Fall 2013 | Spring 2014 | Fall 2014 |
|---|---|---|---|---|---|
| **Denver Health** | A | A | A | B | B |

The Leapfrog Group releases Hospital Safety Scores two times per year, giving more than 2,500 hospitals a grade for their performance in safety. The score is based on 28 nationally reported measures. Data are compiled from the Leapfrog Hospital Survey, AHRQ, CDC, CMS, and the American Hospital Association's Annual Survey and Health Information Technology Supplement. Safety scores are accessible to the public via http://www.hospitalsafetyscore.org.

## COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT (CDPHE)

The CDPHE publishes Healthcare-Associated Infection (HAI) rates annually per legislation for state licensure. These HAIs include infections associated with surgeries, central lines, and dialysis treatment. Data are reported by each institution to the CDC's National Healthcare Safety Network (NHSN). The NHSN is a national web-based surveillance and reporting system.

Denver Health Healthcare-Associated Infections

| Procedure | August 2012—July 2013 | | | | August 2013—July 2014 | | | |
|---|---|---|---|---|---|---|---|---|
| | # Procedures | # Infections | SIR | Nat'l Comparison | # Procedures | # Infections | SIR | Nat'l Comparison |
| Breast Surgery | 167 | 3 | 1 | Same | 144 | 3 | 1.1 | Same |
| Colon Surgery | 147 | 18 | 1.6 | Same | 122 | 14 | 1.6 | Same |
| Hip Replacement | 111 | 4 | 2.0 | Same | 90 | 0 | 0 | Same |
| Knee Replacement | 133 | 0 | 0 | Same | 173 | 1 | 0.5 | Same |
| Abdominal Hysterectomy | 70 | 1 | 0.6 | Same | 78 | 4 | 2.2 | Same |
| Vaginal Hysterectomy | 65 | 1 | 1.1 | Same | 67 | 1 | 1.1 | Same |

*Source: CDPHE Healthcare Associated Infections in Colorado January 2015 report*

# PUBLIC REPORTING & INCENTIVES

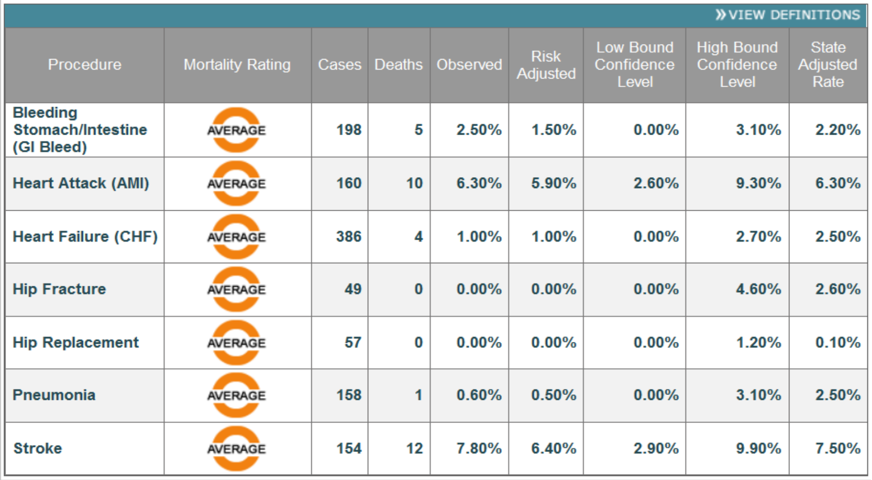
## COLORADO HOSPITAL ASSOCIATION (CHA)

The interactive Colorado Hospital Report card uses nationally endorsed quality measures to compare care amongst Colorado Hospitals. Each of the following categories are available on the report card: Procedure/Surgery, Medical Conditions, Mortality Comparisons, Low Volume Hospitals, Patient Safety, Infections, Pediatrics, Obstetrics, and Quality Report by Hospital. Examples from the CHA Report Card are shown. Report cards are accessible to the public via [http://www.cha.com/Resources/Colorado-Hospital-Report-Card.aspx](http://www.cha.com/Resources/Colorado-Hospital-Report-Card.aspx).

How to read the ratings: Average = statistically same comparison, if a hospital's risk adjusted rate is not statistically different from other hospital's rates; Above average = statistically better comparisons, if a hospital's risk-adjusted rate is statistically better than other hospital's rates; Below Average = statistically worse comparison, if a hospital's risk-adjusted rate is statistically worse than other hospital's rates for that measure.

The majority of hospitals in Colorado compare equally to DHHA and earn average ratings for many of the same measures.

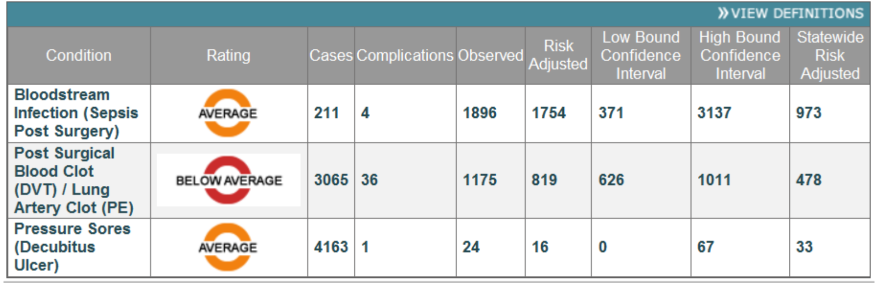
**DENVER HEALTH—Mortality Measures (2013)**



» VIEW DEFINITIONS

| Procedure | Mortality Rating | Cases | Deaths | Observed | Risk Adjusted | Low Bound Confidence Level | High Bound Confidence Level | State Adjusted Rate |
|---|---|---|---|---|---|---|---|---|
| Bleeding Stomach/Intestine (GI Bleed) | AVERAGE | 198 | 5 | 2.50% | 1.50% | 0.00% | 3.10% | 2.20% |
| Heart Attack (AMI) | AVERAGE | 160 | 10 | 6.30% | 5.90% | 2.60% | 9.30% | 6.30% |
| Heart Failure (CHF) | AVERAGE | 386 | 4 | 1.00% | 1.00% | 0.00% | 2.70% | 2.50% |
| Hip Fracture | AVERAGE | 49 | 0 | 0.00% | 0.00% | 0.00% | 4.60% | 2.60% |
| Hip Replacement | AVERAGE | 57 | 0 | 0.00% | 0.00% | 0.00% | 1.20% | 0.10% |
| Pneumonia | AVERAGE | 158 | 1 | 0.60% | 0.50% | 0.00% | 3.10% | 2.50% |
| Stroke | AVERAGE | 154 | 12 | 7.80% | 6.40% | 2.90% | 9.90% | 7.50% |

**DENVER HEALTH—Patient Safety Measures (2013)**



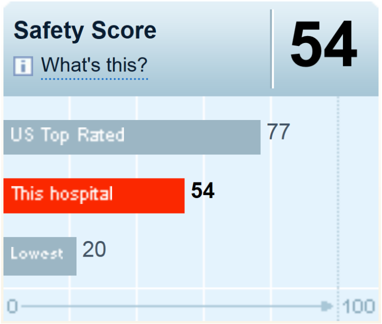
» VIEW DEFINITIONS

| Condition | Rating | Cases | Complications | Observed | Risk Adjusted | Low Bound Confidence Interval | High Bound Confidence Interval | Statewide Risk Adjusted |
|---|---|---|---|---|---|---|---|---|
| Bloodstream Infection (Sepsis Post Surgery) | AVERAGE | 211 | 4 | 1896 | 1754 | 371 | 3137 | 973 |
| Post Surgical Blood Clot (DVT) / Lung Artery Clot (PE) | BELOW AVERAGE | 3065 | 36 | 1175 | 819 | 626 | 1011 | 478 |
| Pressure Sores (Decubitus Ulcer) | AVERAGE | 4163 | 1 | 24 | 16 | 0 | 67 | 33 |

## CONSUMER REPORTS

Consumer Reports created a Safety Score to grade hospitals based on publicly available data. Safety metric categories include from Patient Outcomes, Patient Experience, Hospital Practices, and Heart Surgery. DHHA's score is currently a 54.

**Denver Health 2015**



# NATIONAL COLLABORATIVES

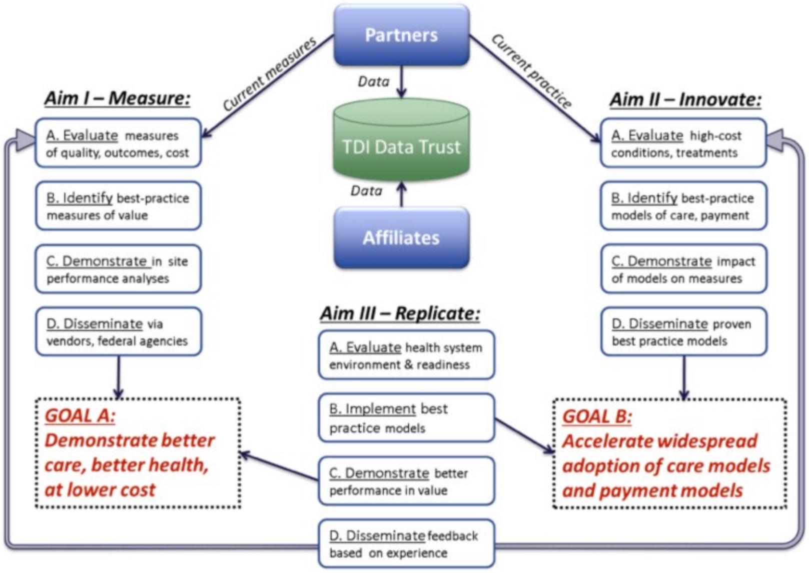
## HIGH VALUE HEALTHCARE COLLABORATIVE (HVHC)

"The mission of the HVHC is to improve healthcare value—defined as quality and outcomes over costs, across time—for its service population, in a sustainable manner, while serving as a model for national healthcare reform." Specific aims are to: Measure, Innovate, and Replicate.

**Hip and Knee Shared Decision Making:** Denver Health was engaged in an improvement collaborative though a CMMI grant awarded to HVHC in 2012. As part of the grant, decision aid videos which describe the risks and benefits of surgery versus non-surgical treatments are offered to patients who are considering joint replacement surgery . Web based questionnaires gather information regarding patient preferences, values and knowledge about their decision. Various patient outcomes are collected. As of the end of 2014, the trial was ongoing and results had not yet been released.

**Sepsis Improvement:** Treatment of septicemia and sepsis is optimized through the implementation of a bundle of interventions with improvement strategies. DHHA is the leading site in HVHC for a sepsis improvement project. Toyota Lean methodologies are used to implement evidence-based care with early goal directed therapy for sepsis. HVHC goals for the sepsis collaborative are to improve care, improve health, and reduce costs by 5% over a three year period. Standardized early directed care for sepsis was implemented in the emergency department. In late 2014, work began to develop an electronic alert system for identifying at risk patients. This system should lead to more timely sepsis care, improved sepsis documentation, and a reduced mortality rate.

**Diabetes Patient Engagement:** Diabetic patients with multiple comorbidities are provided care coordination, care planning, education, shared decision making and motivational interviewing. Remote patient management is offered to patients with uncontrolled diabetes and depression screening is also assessed.


Partners
Current measures
Current practice
Data
TDI Data Trust
Data
Affiliates
Aim I – Measure:
A. Evaluate measures of quality, outcomes, cost
B. Identify best-practice measures of value
C. Demonstrate in site performance analyses
D. Disseminate via vendors, federal agencies
GOAL A: Demonstrate better care, better health, at lower cost
Aim II – Innovate:
A. Evaluate high-cost conditions, treatments
B. Identify best-practice models of care, payment
C. Demonstrate impact of models on measures
D. Disseminate proven best practice models
GOAL B: Accelerate widespread adoption of care models and payment models
Aim III – Replicate:
A. Evaluate health system environment & readiness
B. Implement best practice models
C. Demonstrate better performance in value
D. Disseminate feedback based on experience

http://highvaluehealthcare.org/

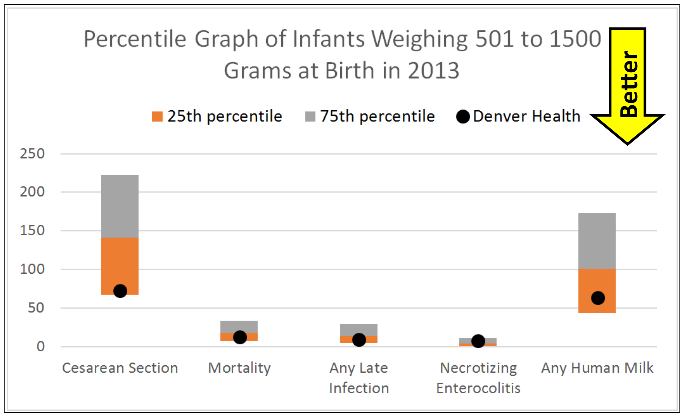
# NATIONAL COLLABORATIVES

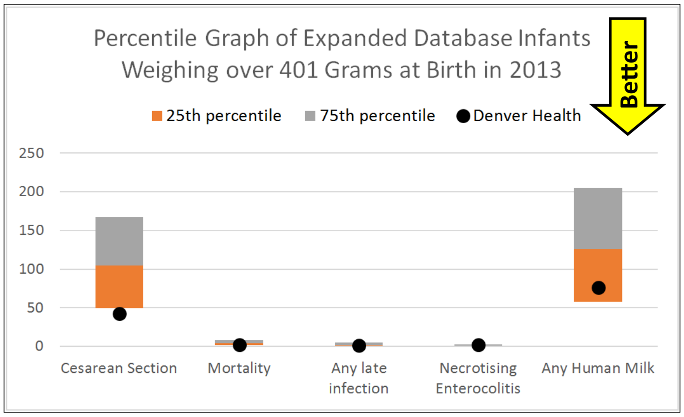
## VERMONT OXFORD NETWORK (VON)

The Vermont Oxford Network (VON) is a voluntary collaborative focused on improving the quality and safety of medical care for newborn infants and their families through a coordinated program of research, education and quality improvement projects.  VON provides reports which benchmark center specific data to neonatal centers from around the world.

VON offers two comparative databases and DHHA participates in both options.  The very low birthweight (VLBW) database is for infants born between 401 and 1500 grams.  The expanded database includes infants weighing over 401 grams at birth and who were admitted to a Neonatal Intensive Care Unit (NICU).  The 2014 VON Annual report includes data collected between 1/1/2013 – 12/31/2013.

Data are used to analyze the care and outcomes of high-risk newborn infants for quality management, process improvement, internal audit, peer review, outcomes research, randomized clinical trials , and epidemiological studies. Findings are important for the development of educational materials and programs for health care professionals, policy makers, families of high-risk infants, and the public.


Percentile Graph of Infants Weighing 501 to 1500 Grams at Birth in 2013


Percentile Graph of Expanded Database Infants Weighing over 401 Grams at Birth in 2013

## HOSPITAL ENGAGEMENT NETWORK (HEN)

The Hospital Engagement Network (HEN) led by Intermountain Healthcare is a program funded by The Center for Medicare and Medicaid Innovation (CMMI) developed to improve safety and quality across partner delivery systems. Goals: Reduce avoidable healthcare acquired conditions and readmissions, disseminate knowledge gained by member institutions and to provide feedback reports on a quarterly basis with meaningful comparisons. Targeted Patient Safety Areas include: Adverse Drug Events, Central Line Associated Blood Stream Infections, Surgical Site Infections, Venous Thrombo-Embolism, Ventilator-Associated Pneumonia, Catheter-Associated Urinary Tract Infections, Preventable Readmissions, Pressure Ulcers, Obstetrical Trauma, and Patient Falls and Immobility.

# INPATIENT NURSING SENSITIVE INDICATORS

## HOSPITAL-ACQUIRED PRESSURE ULCERS (HAPU)

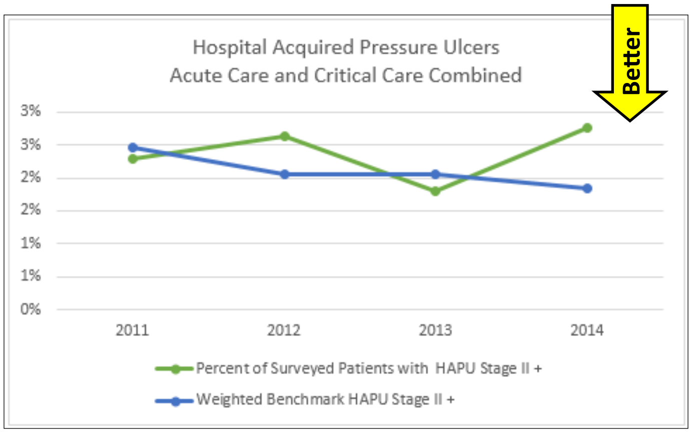
**Pressure Ulcer Performance Improvement (PUPPI) Champion Program**

Quarterly National Database of Nursing Quality Indicators (NDNQI) Point Prevalence Pressure Ulcer Outcomes, Stage II and above

**Benchmark:** NDNQI provides benchmarks based on unit type. Analysis of hospital-wide and divisional performance against weighted benchmarks. Weighted benchmarks are calculated by combining NDNQI published benchmarks in proportion to the relative number of DHHA patients surveyed per NDNQI unit type. NDNQI unit types include: Medical, Med-Surg, Rehab, Surgical, Critical Care, and Stepdown.

**Target:** Outperformance of the previous quarter's weighted benchmark.

**Accomplishments:** Conducted 4 quarterly NDNQI Pressure Ulcer Prevalence Surveys. Prevalence surveys were led by DHHA's Wound Care team in collaboration with the Nursing Outcomes, Research and Evidence-Based Practice (NORE) department. The Acute Care and Critical Care combined Hospital-Acquired Pressure Ulcers Stage II and above rates were below the weighted benchmark for 2 out of 4 quarters in 2014.



In Q2 2014, NDNQI Pressure Ulcer Prevalence Survey was expanded to include Pediatrics, Pediatric ICU, and Neonatal ICU. Wound Care RNs collaborated with Nursing Informatics to implement a suspected pressure ulcer alert and also a Braden Score report to track patients with at risk Braden scores in LifeLink.

In Q3 2014 and Q4 2014, an A3 was conducted after each prevalence survey to identify areas of improvement and waste. Areas of opportunity that were implemented included: providing brief education for unit wound champions prior to data collection, streamlining and automating data collection sheets, communicating preliminary Hospital-Acquired Pressure Ulcer findings next-day, and debriefing with Wound Care RNs one week after the survey. These modifications were successful in improving the efficiency of the quarterly data collection process by reducing the lag time between data collection and data reporting, and also providing short root cause analyses of all Hospital-Acquired Pressure Ulcers Stage II and above found.

Wound Care RNs developed bed signs for Braden Score Interventions and Turning Schedules. These signs act as a visual reminder to staff to reposition the patient and also to implement prevention measures such as heel protectors, moisture barriers, and foam dressings when needed.

Wound Care Tip Sheets were developed to educate staff about pressure ulcers and also pressure ulcer prevention and treatment. The following tip sheets were developed in 2014:

- Assessment and Treatment of Stage I – IV Pressure Ulcers, Unstageable Pressure Ulcers, and also Deep Tissue Injuries
- Wound Care Products Used to Prevent or Treat Pressure Ulcers
- Pressure Relieving Beds and Devices
- Wound Care RNs began teaching about wound care in Acute Care New Hire classes

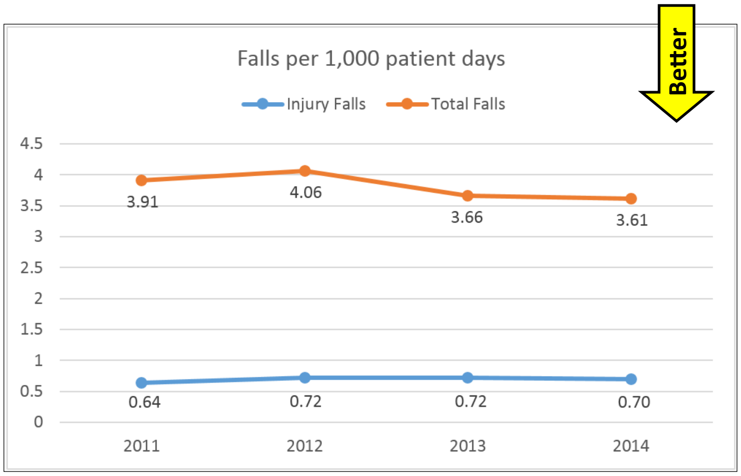
## FALLS

**Performance Measure (Indicator): Falls per 1,000 patient days, injury falls per 1,000 patient days**

**Definition of a Fall:** DHHA uses NDNQI definitions to facilitate comparison with benchmarks: "A sudden unintentional descent,

# INPATIENT NURSING SENSITIVE INDICATORS

with or without injury to the patient, that results in the patient coming to rest on the floor or against some other surface, on another person, or an object." Inclusion criteria: patient falls that occur on an eligible reporting nursing unit, including patient rooms, hallways, and other areas. When a patient rolls off of a low bed on a mat or is found on a surface where you would not expect to find a patient, this is considered a fall. All unassisted and assisted falls are reported, including falls attributable to physiological factors such as fainting. Exclusion criteria: Falls that occur outside the boundaries of an eligible nursing unit (e.g., in the elevator or cafeteria), suspected intentional falls, and "developmental falls" (e.g., a toddler falls while learning to walk).



**Definition of an Injury Fall:** All as defined above that results in any physical injury to the patient meeting NDNQI's definition of "minor injury" or greater. Minor injury is defined as resulting in application of ice or dressing, cleaning of a wound, limb elevation, topical medication, continued pain that requires treatment, bruise, or abrasion.

**Benchmark:** NDNQI Benchmark by Unit type

**Target Value:** Outperformance of benchmark

- A relational falls database was built to allow for automated reports and querying. These features increased the accuracy and timeliness of reports, and also provided the tools required to run custom queries to gain further insight into fall patterns and characteristics.
- Fall count charts were developed to illustrate the total number of falls that occurred on a unit in a given month. These charts are meaningful to the bedside nurse because the chart shows a concrete number, rather than a rate. Thus, this chart provides actionable data and also a means to develop a target number of falls for each unit to work towards.
- A 'Weekly Falls Report' was developed. The report includes elements such as fall description, fall risk score prior to fall and injury level, and also a summary of the weekly, monthly, and quarterly fall counts.
- An analysis was conducted on the Acute Care Fall Risk Assessment Scoring Tool to examine the sensitivity and specificity of the modified Morse risk assessment scoring tool. Results showed that the modified Morse risk assessment tool was able to identify a fall patient approximately 89% of the time and patients who will not fall approximately 23% of the time. This analysis was an initial look at the fall risk tool and was used as a platform to inform discussions about changing the fall risk scoring tool used by Acute Care.
- Falls Prevention Stakeholders Committee recommended that the Hester-Davis Fall Risk Assessment Tool become the fall risk assessment tool built into Epic.
- eHS completed improvements/updates to fall risk assessment usability in LifeLink, which included a link to fall risk clinical guidelines and a carryover of "Date of Last Fall" to future fall risk assessments.
- The NORE department, with the support of Acute Care leadership, created a Quality Champions program. The program aimed to engage bedside nurses on improving nursing indicators. After an orientation, Quality Champions performed one monthly 'mini root cause analysis' on an Acute Care inpatient fall that occurred plus 'fall prevention QA audits' to determine what education the patient received about their fall risk, and what prevention measures were documented/in place for highest risk patients.
- Fall Prevention Committee members collaborated with nurse managers from the University of Colorado Hospital to discuss fall prevention efforts, program development, and strategies for success in preventing inpatient falls.
- Began to develop the elements needed in order to offer a weekly patient safety meeting report-out on falls. This led to the development of an automated safety Huddle Report in the Falls Database.

# INPATIENT NURSING SENSITIVE INDICATORS

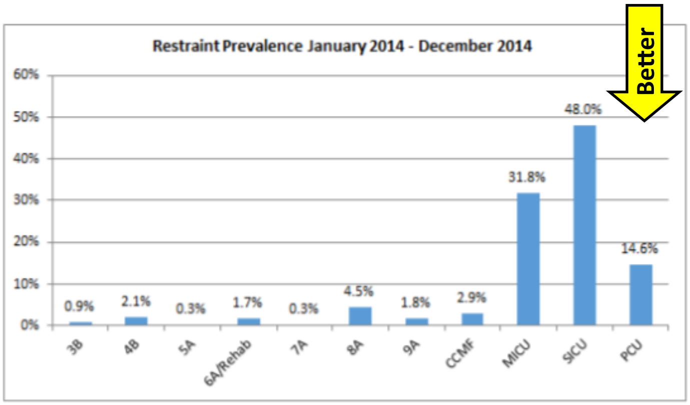
- Created a "Falls Stakeholders Committee" sub-group to the Fall Prevention Committee. The committee met several times in 2014 to discuss the need for new measures of fall performance, development of new reports to engage a broader audience on fall prevention efforts, and to develop a weekly falls report and patient safety meeting report.
- Quarterly trophies were awarded to the Critical Care unit with the most improved fall rate and to the Acute Care unit for the lowest fall rate.
- The SICU went 296 days without a fall!

## RESTRAINTS

**Important Process/Activity/Service:**
Restraint Performance Improvement, non-violent, non-self-destructive patients

**Performance Measure (Indicator):**
Critical Care: Percentage of charts in each unit with restraint documentation entirely complete.
Emergency Department: Percentage of charts with complete restraint documentation per required charting element.
Acute Care: Percentage of charts with complete restraint documentation per required charting element.

**Definitions:**
Physical Restraint: "Any manual method, physical, or mechanical device, material, or equipment that immobilizes or reduces the ability of a patient to move his or her arms, legs, body, or head freely" (DHHA Policy P-1.514).

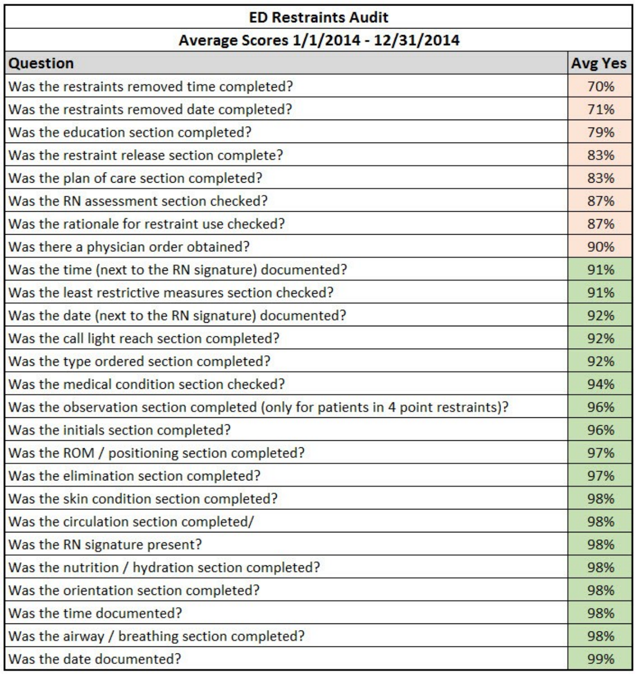


*Restraint prevalence = Total # restraints / total census

## ACCOMPLISHMENTS

- Triennial Joint Commission Survey completed with no findings related to restraint care
- Restraint Audit Standard Work development for areas where non-behavioral restraints are used
  - ◊ Emergency Department standard work was completed and approved in August 2014.
  - ◊ Acute Care and Pediatrics/PICU standard work development was initiated and still in progress at the end of 2014.
- Developed new drill down reports for Critical Care which showed audit results specific to each Staff RN.
- NORE and Critical Care transitioned visual observation of restraint use for audits from NORE staff to Critical Care designees. Restraint charting audits will still be completed by NORE.

# INPATIENT NURSING SENSITIVE INDICATORS

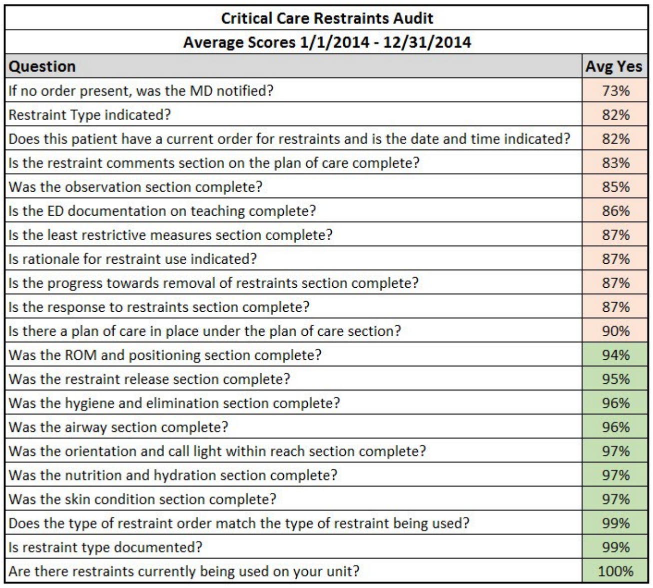


**ED Restraints Audit**

**Average Scores 1/1/2014 - 12/31/2014**

| Question | Avg Yes |
|---|---|
| Was the restraints removed time completed? | 70% |
| Was the restraints removed date completed? | 71% |
| Was the education section completed? | 79% |
| Was the restraint release section complete? | 83% |
| Was the plan of care section completed? | 83% |
| Was the RN assessment section checked? | 87% |
| Was the rationale for restraint use checked? | 87% |
| Was there a physician order obtained? | 90% |
| Was the time (next to the RN signature) documented? | 91% |
| Was the least restrictive measures section checked? | 91% |
| Was the date (next to the RN signature) documented? | 92% |
| Was the call light reach section completed? | 92% |
| Was the type ordered section completed? | 92% |
| Was the medical condition section checked? | 94% |
| Was the observation section completed (only for patients in 4 point restraints)? | 96% |
| Was the initials section completed? | 96% |
| Was the ROM / positioning section completed? | 97% |
| Was the elimination section completed? | 97% |
| Was the skin condition section completed? | 98% |
| Was the circulation section completed/ | 98% |
| Was the RN signature present? | 98% |
| Was the nutrition / hydration section completed? | 98% |
| Was the orientation section completed? | 98% |
| Was the time documented? | 98% |
| Was the airway / breathing section completed? | 98% |
| Was the date documented? | 99% |

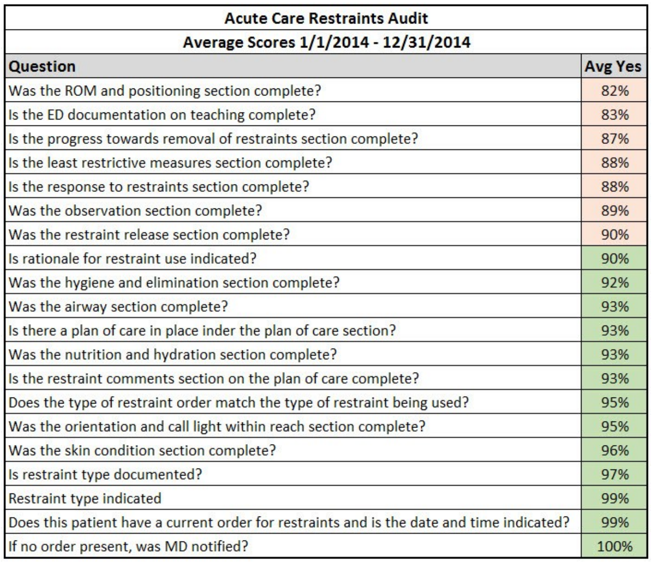
Pink indicates values below 90% and green indicates values above 90%



**Critical Care Restraints Audit**

**Average Scores 1/1/2014 - 12/31/2014**

| Question | Avg Yes |
|---|---|
| If no order present, was the MD notified? | 73% |
| Restraint Type indicated? | 82% |
| Does this patient have a current order for restraints and is the date and time indicated? | 82% |
| Is the restraint comments section on the plan of care complete? | 83% |
| Was the observation section complete? | 85% |
| Is the ED documentation on teaching complete? | 86% |
| Is the least restrictive measures section complete? | 87% |
| Is rationale for restraint use indicated? | 87% |
| Is the progress towards removal of restraints section complete? | 87% |
| Is the response to restraints section complete? | 87% |
| Is there a plan of care in place under the plan of care section? | 90% |
| Was the ROM and positioning section complete? | 94% |
| Was the restraint release section complete? | 95% |
| Was the hygiene and elimination section complete? | 96% |
| Was the airway section complete? | 96% |
| Was the orientation and call light within reach section complete? | 97% |
| Was the nutrition and hydration section complete? | 97% |
| Was the skin condition section complete? | 97% |
| Does the type of restraint order match the type of restraint being used? | 99% |
| Is restraint type documented? | 99% |
| Are there restraints currently being used on your unit? | 100% |



**Acute Care Restraints Audit**

**Average Scores 1/1/2014 - 12/31/2014**

| Question | Avg Yes |
|---|---|
| Was the ROM and positioning section complete? | 82% |
| Is the ED documentation on teaching complete? | 83% |
| Is the progress towards removal of restraints section complete? | 87% |
| Is the least restrictive measures section complete? | 88% |
| Is the response to restraints section complete? | 88% |
| Was the observation section complete? | 89% |
| Was the restraint release section complete? | 90% |
| Is rationale for restraint use indicated? | 90% |
| Was the hygiene and elimination section complete? | 92% |
| Was the airway section complete? | 93% |
| Is there a plan of care in place inder the plan of care section? | 93% |
| Was the nutrition and hydration section complete? | 93% |
| Is the restraint comments section on the plan of care complete? | 93% |
| Does the type of restraint order match the type of restraint being used? | 95% |
| Was the orientation and call light within reach section complete? | 95% |
| Was the skin condition section complete? | 96% |
| Is restraint type documented? | 97% |
| Restraint type indicated | 99% |
| Does this patient have a current order for restraints and is the date and time indicated? | 99% |
| If no order present, was MD notified? | 100% |

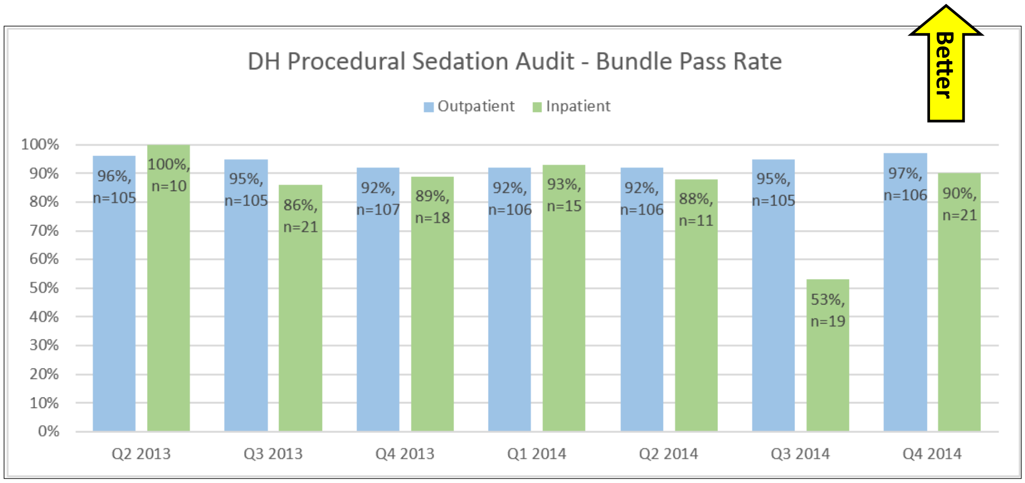
# PATIENT SAFETY & QUALITY IMPROVEMENT PROJECTS

## PROCEDURAL SEDATION

Procedural Sedation is a high-risk intervention that requires well written guidelines for practice, physician, nurse and respiratory therapy training, and ongoing competency. Documentation is analyzed to facilitate and support practice as well as to follow-up for performance improvement.

The Procedural Sedation Committee reviews data and makes recommendations to ensure ongoing performance improvement.

The graph displays a summary of the quarterly data that is reviewed. The data demonstrates sustainment of a variety of measures over the past twenty-four months and indicates a low percentage of safety events related to procedural sedation.

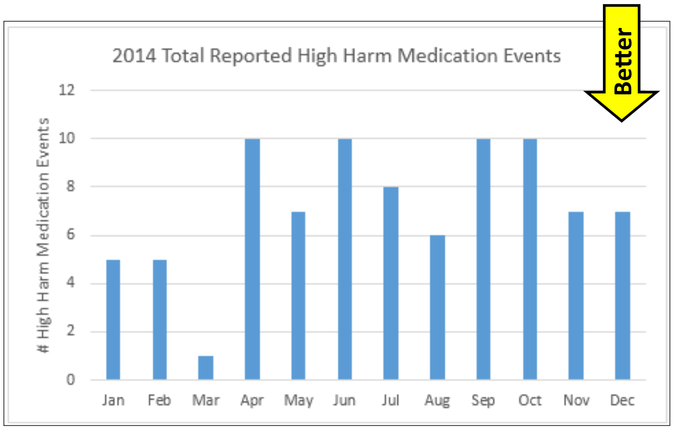


## EVALUATION OF MEDICATION EVENTS:

Medication administration is a high-risk activity that requires technology, strong communication, decision support, standardization, staff vigilance and continuous monitoring. DHHA has defined high harm medication events as those events with a harm score ≥5, i.e. the event reached the patient and additional treatment was required. All events are self-reported into DHHA's electronic occurrence reporting system, Patient Safety Intelligence (PSI). High-Harm events undergo a multidisciplinary review by DPSQ and Pharmacy to determine root causes or system failures. Adjudicated results are reported to the Executive Staff.

## ACCOMPLISHMENTS

- Pain order set created.
- Communication and education for providers surrounding medication reconciliation list related to specific events reported.
- Enhanced the multidisciplinary review process for high harm medication events.



**High Harm Medication Events—2014**

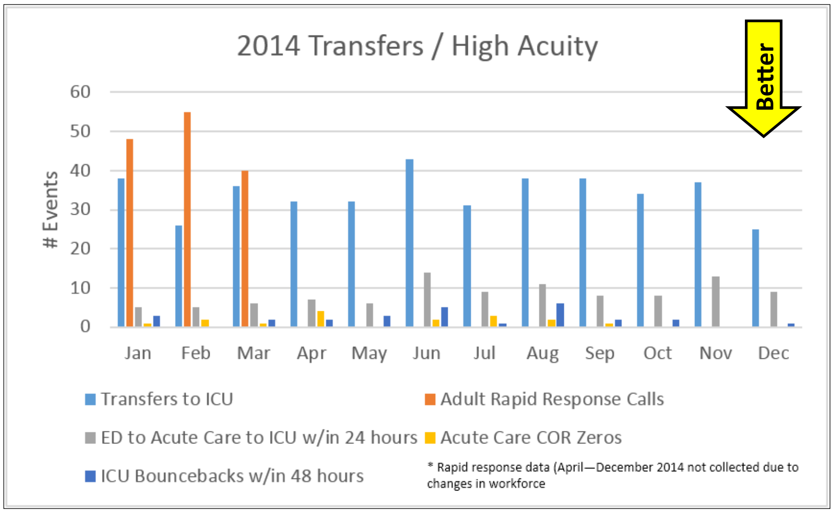
| YEAR | CASES | OCCURRENCES | % of OCCURRENCES |
|---|---|---|---|
| 2012 | 5,300 | 36 | 0.72% |
| 2013 | 5,400 | 30 | 0.66% |
| 2014 | 5,885 | 20 | 0.34% |

# HIGH ACUITY CARE

DPSQ continues to evaluate and/or track the following metrics related to patient deterioration:

1. Adult acute care COR Zeros (cardiopulmonary arrests)
2. Rapid Response Calls (#, clinical triggers, delays, shift, physician response, need for escalation)
3. Bouncebacks to ICU within 48 hours
4. Transfers to the ICU
5. Transfers from the ED to Acute Care to ICU within 24 hours

This information is available on the DHHA electronic Quality Scorecard and provided to nursing leadership on a quarterly basis.



* Rapid response data (April—December 2014 not collected due to changes in workforce

## COR ZEROS

A coordinated review of all medical emergencies and surrounding processes related to Cor Zero/Medical Emergency response is conducted by the Cor Zero Committee. The committee reports to the Medical Staff through the Medical Staff Executive Committee (MSEC) twice a year.

DHHA is a teaching institution, which provides in-house residents and interns 24 hours a day, 7 days a week, therefore it was decided to institute a variation of the Rapid Response Team (RRT) that better suited the needs of the institution and would avail a timely and thorough assessment and plan for patients who are starting to deteriorate.

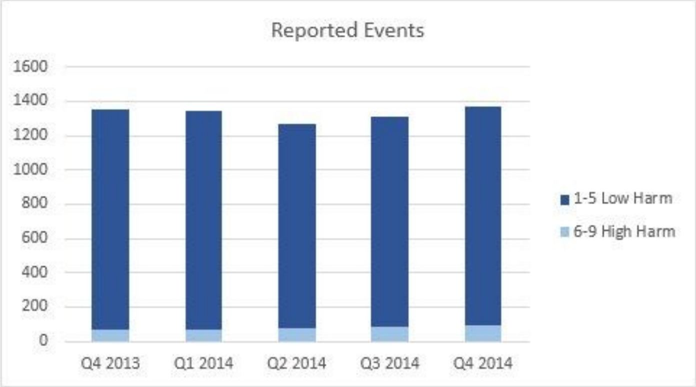
Through the implementation of the Clinical Triggers Program, DHHA has experienced a decrease in the number of patients who reach the level of Cor Zero initiation.

## DAILY PATIENT SAFETY BRIEFING

In May 2014, we launched the Daily Patient Safety Briefing, which is an enterprise-wide meeting focused on patient safety. Approximately 20-50 participants gather every weekday at 10am, either in person or on a conference call, to review all significant events in the previous 24 hours and any anticipated events for the coming days. The facilitator elicits reports from 20 departmental representatives and responses to specific events are defined on the call or delegated to a separate group.

## PATIENT SAFETY INTELLIGENCE (PSI) REPORTING

- In February 2014, DHHA changed their voluntary occurrence reporting system from Patient Safety Net (PSN) to Patient Safety Intelligence (PSI).
- All events are categorized according to UHC Safety Intelligence Event types and harm scored using AHRQ's Common Format.
- Overall harm score reporting as well as the proportion of high harm scores remained consistent from 2013 to 2014.



# INFECTION CONTROL & PREVENTION

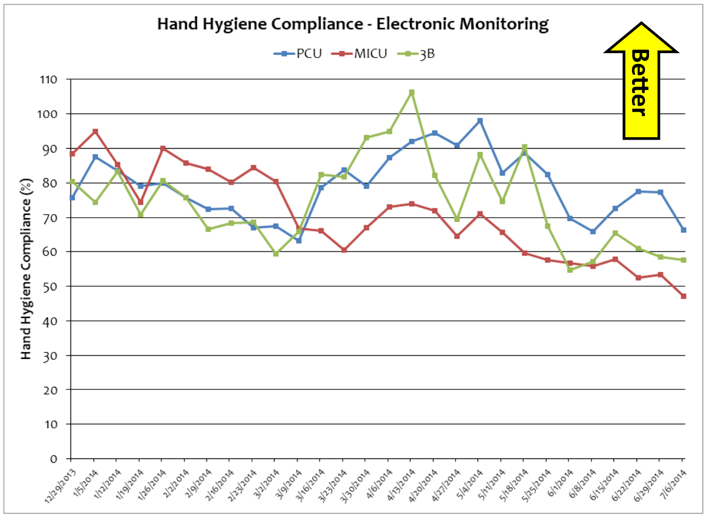
The mission of the Infection Prevention (IP) and Antimicrobial Stewardship (AS) programs is to support DHHA in providing the highest quality and safest health care by:

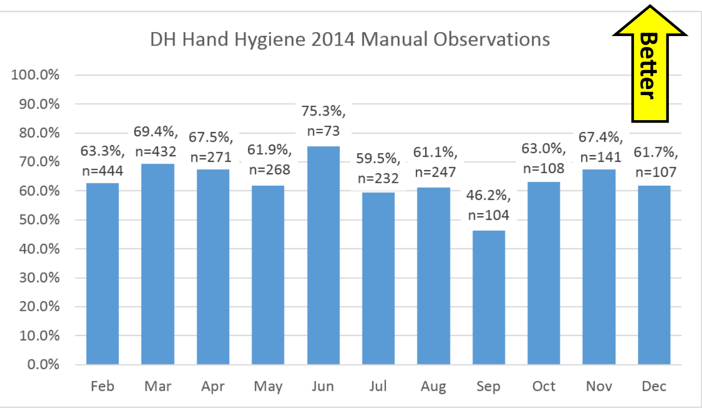
1. Reducing the risk of acquiring and transmitting infections in both the inpatient and outpatient settings.
2. Ensuring the optimal antibiotic choice, dose, and duration of therapy for each patient to maximize the opportunity for a favorable outcome, and minimize unnecessary antibiotic use.
3. Decreasing infection-related costs.
4. Engaging in research aimed at furthering knowledge of preventing healthcare associated infections (HAI) and the optimal use of antibiotics.
5. Providing leadership in community and national infection prevention and stewardship initiatives.

## INFECTION PREVENTION 2014 GOALS

**Goal #1. Improve hand hygiene compliance.** In 2014 the IP team continued to focus efforts on the hand hygiene program in both DHHA's inpatient and outpatient settings. A trial of an automated monitoring technology was conducted for approximately 6 months on 3 floors. The study focused on the concept of daily real time data feedback and intensive education on the 5 Moments of Hand Hygiene. Manual observation data collection was used as a validation point. The initial trial period showed promising results with increased compliance rates around 80% and staff engagement. Additional strategies to improve hand hygiene compliance were employed in 2014:

- Hand hygiene rates were discussed at clinic huddles, staff meetings and Gemba walks.
- Increased the number of hand hygiene trained champions to collect audits on various floors and clinics.
- Engaged leadership in the data collection process with the intent that they intervene at the time of observation to do just in time coaching.





**Goal #2. Decrease the rate of device-related infections.** Central venous catheters, endotracheal tubes, and urinary catheters increase a patient's risk for Healthcare Associated Infections (HAI). The following interventions were continued or implemented to decrease the risk for infection from these devices in 2014:

- Participated successfully as an active learner in the CMMI HEN and the Colorado Foundation for Medical Care (CFMC) initiatives for prevention of Catheter Associated Urinary Tract Infections (CAUTI)
- Implemented unit CAUTI Champions and ongoing education programs that targeted CAUTI reduction best practices.
- Implemented universal decolonization in our critical care units and step down units and daily chlorhexidine gluconate (CHG) bed bathing in all adult inpatient units.
- Provided monthly line listings of CAUTIs, Central Line Associated Blood Stream Infections (CLABSIs), and Ventilator Associated Pneumonias (VAPs) to each unit.
- The dedicated Peripherally Inserted Central Catheter (PICC) team continued to expand and are key players in staff education, process audits and product selection in addition to being highly trained dedicated staff in charge of insertion, maintenance, and removed off all PICC lines.
- Implemented Curos Port Protectors for passive disinfection of intravenous ports in 2014 for use on all central lines.

# INFECTION CONTROL & PREVENTION

**Central-line associated bloodstream infections (CLABSI):** Bundled prevention interventions are ongoing and have resulted in sustained low rates for the most part. In the SICU during the 2nd quarter of 2014 there was a slight increase in CLABSI rates but no cause was determined. DHHA's CLABSI rates over the last 5 years, and the corresponding National Healthcare Surveillance Network (NHSN) percentiles are shown to the right.

Interventions championed by Infection Prevention (IP), Patient Safety and Quality (PS&Q), Healthcare Infection Prevention Performance Improvement (HIPPI) champions, unit directors, and most importantly—front line staff—included a "CLABSI bundle" with the following key elements:

- Hand hygiene
- Maximal barrier precautions
- Chlorhexidine/EtOH antisepsis of catheter insertion site except VLBW infants
- Non-femoral vein catheter insertion in adults
- Daily review of line necessity; prompt removal of unnecessary lines
- Chlorhexidine patch at line site
- Curos caps on all ports
- Checklist
- Line cart
- Annual training for inserters

**CLABSI per 1000 central line days**

| | 2010 | 2011 | 2012 | 2013 | 2014 | 2014 NHSN percentile |
|---|---|---|---|---|---|---|
| MICU | 1.0 | 0.0 | 1.2 | 0.9 | 0.6 | 25—50% |
| SICU | 0.8 | 1.7 | 0.4 | 0.3 | 1.9 | 50—75% |
| PCU | 2.7 | 0.9 | 0.0 | 0.8 | 0.9 | 50—75% |
| PICU | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10% |
| NICU | 0.0 | 2.5 | 1.2 | 2.4 | 1.8 | 50—75% |
| Acute Care | 1.1 | 0.9 | 0.3 | 1.9 | 1.0 | 25—50% |

Note: Lower percentiles are preferred.

Evaluation of our central line use **revealed lower utilization of central lines in our Medical Intensive Care Unity (MICU), Surgical Intensive Care Unit (SICU), and Progressive Care Unit (PCU) (top 25-50%) compared to comparable units reporting nationally through NHSN,** which may in part explain low rates of CLABSI in these units as well. Findings are described in the table to the right.

**Central Venous Catheter Utilization Ratio***

| | 2010 | 2011 | 2012 | 2013 | 2014 | 2014 NHSN Percentile |
|---|---|---|---|---|---|---|
| MICU | 0.47 | 0.42 | 0.50 | .052 | 0.53 | 25—50% |
| SICU | 0.51 | 0.50 | 0.46 | 0.54 | 0.37 | 10—25% |
| PCU | 0.20 | 0.22 | 0.28 | 0.32 | 0.29 | 50—75% |
| PICU | 0.18 | 0.19 | 0.18 | 0.17 | 0.14 | 10% |
| Med/SURG | 0.12 | 0.13 | 0.14 | 0.13 | 0.11 | 25—50% |

* line days / patient days
Note: Lower percentiles are preferred.

**Ventilator-Associated Pneumonia (VAP):** Rates in the MICU, SICU, and PCU were monitored and benchmarked against national mean rates for comparable units. DHHA VAP rates over the last 5 years, and the corresponding NHSN percentile, are shown below.

Interventions championed by the Infection Prevention, Patient Safety and Quality, HIPPI champions, unit directors, and most importantly—front line staff—included a "VAP bundle" with the following key elements:

- Minimize duration of ventilation
- Daily assessment of readiness to wean
- Daily interruption of sedation
- Elevate head of bed
- Regular oral care
- Continuous aspiration of subglottic secretions

**VAP per 1000 ventilator days**

| | 2010 | 2011 | 2012 | 2013 * | 2014 | 2014 NHSN percentile |
|---|---|---|---|---|---|---|
| MICU | 1.34 | 1.3 | 0.7 | 0.3 | 0.0 | 10% |
| SICU | 3.02 | 6.5 | 3.7 | 4.4 | 1.2 | 25—50% |
| PCU | 0.0 | 3.7 | 4.9 | 1.3 | 2.8 | 90% |

*Due to the significant changes in the surveillance definition in 2013 by the CDC, it is difficult to compare to the previous year's rates as a sign of performance change.
Note: Lower percentiles are preferred.

# INFECTION CONTROL & PREVENTION

**Catheter-Related Urinary Tract Infections (CAUTI):** Surveillance for CAUTIs was expanded to house-wide in 2014. Although this is a low morbidity/mortality infection, it is a priority for infection prevention because a) CAUTI tends to be caused by more antibiotic resistant pathogens, b) non-reimbursement by CMS for CAUTI, and c) strong nursing sensitive indicator. DHHA CAUTI rates over the last 5 years, and the corresponding NHSN percentile are shown below:

**Urinary Catheter Utilization Ratio***

| | 2010 | 2011 | 2012 | 2013 | 2014 | 2014 NHSN Percentile |
|---|---|---|---|---|---|---|
| MICU | 0.64 | 0.69 | 0.72 | 0.77 | 0.71 | 25—50% |
| SICU | 0.90 | 0.85 | 0.86 | 0.80 | 0.77 | 25—50% |
| PCU | 0.58 | 0.64 | 0.58 | 0.50 | 0.43 | 75—90% |
| PICU | 0.20 | 0.25 | 0.22 | 0.15 | 0.10 | 10—25% |
| REHAB | 0.25 | 0.28 | 0.10 | 0.15 | 0.13 | 75—90% |
| MED/SURG | 0.14 | 0.13 | 0.14 | 0.14 | 0.11 | 10—25% |

* catheter days / patient days

Note: Lower percentiles are preferred.

**CAUTI per 1000 catheter days**

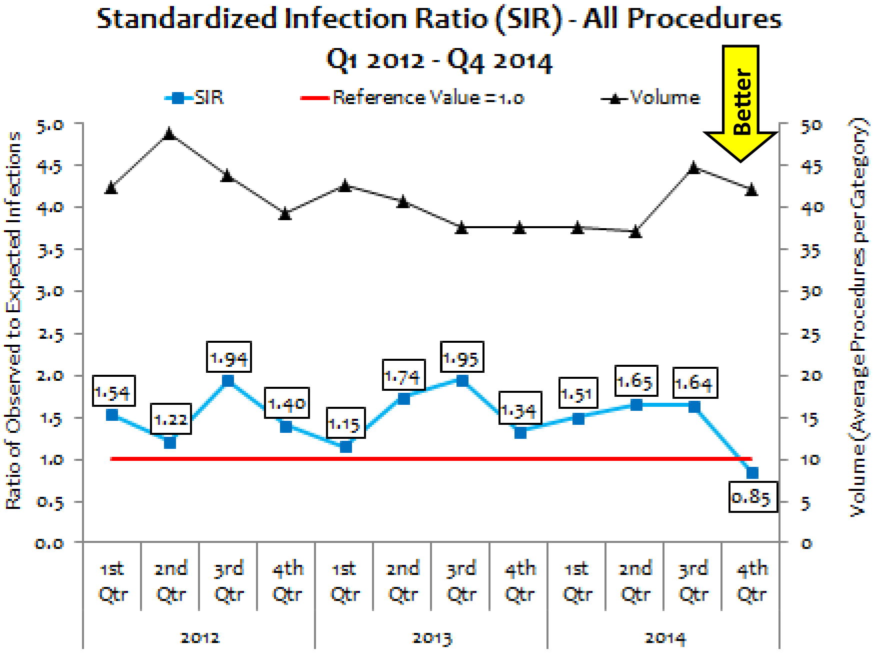
| | 2010 | 2011 | 2012 | 2013 | 2014 | 2014 NHSN percentile |
|---|---|---|---|---|---|---|
| MICU | 2.7 | 4.3 | 1.7 | 1.6 | 2.7 | 50—75% |
| SICU | 2.8 | 1.7 | 2.1 | 2.7 | 3.5 | 50—75% |
| PCU | — | 4.6 | 1.0 | 3.2 | 5.5 | 90% |
| Rehab | — | 2.8 | 0.0 | 7.7 | 15.6 | 90% |
| MED/SURG | — | — | 3.9 | 4.3 | 3.8 | 75—90% |

Note: Lower percentiles are preferred.

CAUTI rates increased over the past 2 years exceeding the NHSN 50th percentile of NHCN benchmark data in all areas. An intensive review of each case was conducted and no significant clinical trends were noted. Additionally in 2014, as part of participation in CAUTI initiatives and an ongoing hospital CAUTI improvement program, the Infection Prevention team conducted a series of point prevalence studies looking at key opportunities in catheter care. The results were shared with front line staff and used as drivers for educational opportunities to improve catheter care.

**Goal #3. Decrease surgical site infection (SSI) rates.**

DHHA SSI rates over the last 5 years, and the comparison to NHSN pooled mean rates along with the Standardized Infection Ratio (observed/expected infection rate based on individual patient risk) are shown in the table to the right:



General interventions to decrease rates of infection included:

- Avoidance of hypothermia
- Appropriate perioperative antibiotics
- Avoidance of shaving
- Cutaneous antisepsis
- Wound care education
- Outpatient follow-up
- Environmental services best practices
- Medical optimization

Infection Prevention supplemented CMS chart abstractor monitoring on all SSI cases. As SCIP metrics are being discontinued over 2014 and 2015, the IP team

# INFECTION CONTROL & PREVENTION

will continue to monitor these indicators as part of the routine SSI surveillance.

We continued to refine and improve the SSI algorithm in order to further reduce manual chart review. The algorithm electronically identifies surgical cases likely to be associated with infection, incorporating microbiological data, infection treatment data, and follow-up visit data to screen cases. In 2013, it was expanded to include colon and open reduction of fracture procedures. The algorithm was found to be 94% sensitive for these procedures, identifying 61 of 65 SSI in a cohort of procedures performed from 2011 through 2013. Validation was completed in 2014. The algorithm performed less well for colon procedures, thus we continue to perform full manual chart review for these procedures. Because of the high sensitivity of the algorithm in identifying SSI in open reduction of fracture procedures, these are no longer subject to full manual review.

The IP Department uses these SSI data to generate a surgeon specific report to submit for their Ongoing Physician Performance Evaluations (OPPE) biannually. This report continues and has been in place to fulfill a Joint Commission requirement as well as to provide important feedback to surgeons about their infection data.

SSI per 100 Operations

| | 2010 | 2011 | 2012 | 2013 | 2014 | 2014 NHSN comparison | 2014 SIR<br>*significant |
|---|---|---|---|---|---|---|---|
| Knee Arthroplasty | 2.1 | 3.4 | 1.5 | 0.0 | 0.6 | 25—50th percentile risk index 2,3 procedures | 0.6 |
| Hip Arthroplasty | 1.2 | 0.0 | 3.3 | 2.0 | 2.0 | 50—75th percentile risk index 2,3 procedures | 1.2 |
| Abdominal Hysterectomy | 3.8 | 0.0 | 4.1 | 1.4 | 4.8 | 50—75th percentile risk index 2,3 procedures | 2.0 |
| Vaginal Hysterectomy | 1.8 | 1.8 | 3.7 | 1.4 | 2.9 | 75—90th percentile risk index 1,2,3 procedures | — |
| Craniotomies | 3.1 | 2.4 | 1.2 | 4.1 | 2.5 | 50—75th percentile risk index 0,1 procedures | 0.6 |
| Thoracic/Lumbar Spinal Fusions | 5.3 | 2.8 | 6.9 | 4.2 | 1.4 | 10—25th percentile risk index 2,3 procedures | 0.5 |
| Gastric Surgery | 4.5 | 0.0 | 0.0 | 5.7 | 4.8 | 50—75th percentile risk index 2,3 procedures | 2.0 |
| Herniorraphy | 1.0 | 0.5 | 1.0 | 1.2 | 1.8 | Below pooled mean for risk index 2,3 procedures | 1.7 |
| Colon Surgery | — | 4.4 | 8.2 | 14.5 | 9.8 | 75—90th percentile risk index 2 procedures | 1.5 |
| Breast Surgery | — | 2.3 | 2.2 | 1.8 | 0.8 | Below pooled mean for risk index 2,3 procedures | 0.4 |
| Prostate and Nephrectomy Surgery | — | 4.9 | 3.0 | 0.0 | 6.8 | Above pooled mean for risk index 2,3 procedures | — |
| Open reduction fracture | — | — | 2.8 | 2.6 | 2.3 | Below pooled mean for risk index 2,3 procedures | 2.7* |

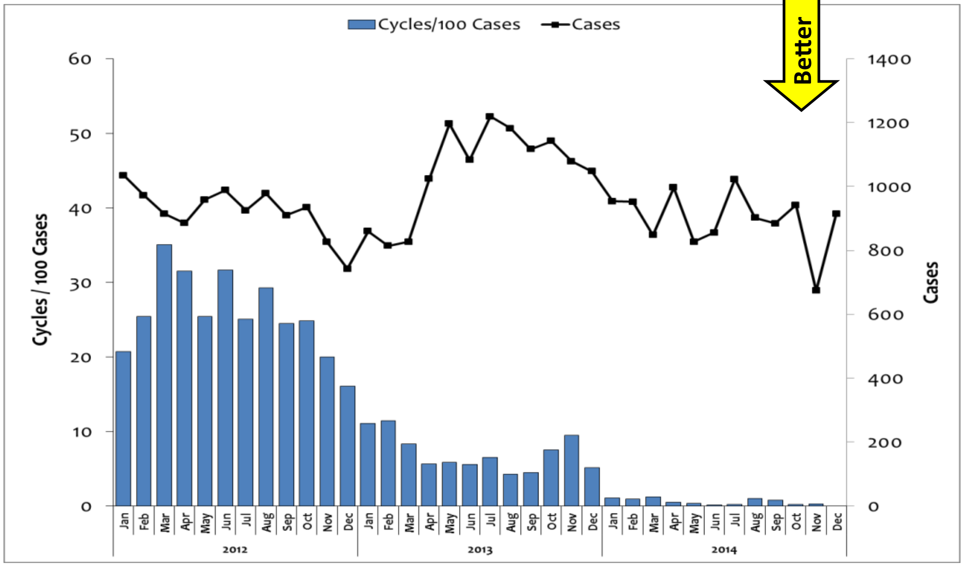
Because of our vertically integrated system, we have the advantage of doing thorough post-discharge infection surveillance that most hospitals are unable to do. The ability to do thorough surveillance may make rates appear higher than other hospitals reporting to NHSN.

Six surgical categories have a SIR greater than 1.0, possibly indicating a higher than expected number of infections given our patient and institutional risk factors. However only one of these 6 categories had a SIR that was statistically significantly higher than expected. The other 5 categories were statistically no different than expected. A great deal of focus and work went into reviewing these surgeries to determine areas of opportunity for improvement. This resulted in the lowest SSI rates for 4th quarter 2014 that DH has had over the past 3 years.

# INFECTION CONTROL & PREVENTION

**Sterile Processing Department (SPD):** During 2014, the direct management of the SPD was transferred back to the Peri-operative service line with continued direct front line management from an outsourced company. This transition back to Peri-op has been closely monitored and has been beneficial to help continue improvement in the services proved by SPD. The IP leadership continues to have close oversight and involvement with the department on a daily basis as well as monthly formal reports through the SPD Steering Committee and quarterly reports to the Infection Prevention Committee.

**SPD Immediate Use Sterilization Cycle Rate**



Several key quality metrics are tracked in SPD including: tray errors, dirty instruments, unprocessed trays, OR frictions (set errors), staffing, several areas of improvement have been noted in 2014. Most significantly the change in the work flow and resulting decreased Immediate Use Steam Sterilization (IUSS) rates.

Other procedure specific interventions:

- Standardization and increased use of CHG/alcohol skin prep in all surgeries that are indicated for use.
- Continued pre-operative MRSA screening and decolonization in select surgical patients.
- Enhanced colon prevention bundle
- Developed an orthopedic surgery monthly care conference that includes representatives from Orthopedics, Infection Disease, Radiology and Pathology to discuss complex orthopedic patients.
- Pre-operative antibiotics Clinical Care Guideline (CCG) was approved and posted in ORs. These guidelines outlined clear responsibility to anesthesia for administration, always given in OR and not in the pre-operative area to minimize opportunity to miss appropriate timing.

**Goal #4. Decrease healthcare transmission of multi-drug resistant organisms (MDRO) and ensure containment of organisms of significance.**

Our goal is to minimize hospital-associated spread of MDROs and other organisms identified as significant at DHHA. We continue efforts to increase compliance and understanding of transmission-based precautions through the following methods:

- Education of patient transporters, inpatient nursing staff, physical therapy and departments that care for patients especially in the area of contact precautions.
- Education at nursing and new physician orientation.
- Consultation with other clinical departments to provide in-services to their employees and to aid them in establishing education programs as part of the department education for new employees.
- Education of patients regarding their MDROs using patient information sheets.
- Education of visitors regarding standard and transmission-based precautions, especially when visiting patients in isolation.

# INFECTION CONTROL & PREVENTION

**Rates of MDROs and other organisms of significance per 1000 patient days**

| | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|
| Aspergillus | 0.08 | 0.16 | 0.11 | 0.03 | 0.03 |
| *Acinetobacter baumanni* | 0.13 | 0.13 | 0.11 | 0.09 | 0.07 |
| Carbapenem Resistant *Pseudomonas aeruginosa* | 0.10 | 0.04 | 0.12 | 0.04 | 0.06 |
| Carbapenem-resistant *Enterobacteriaceae* (CRE) - previous noted at KPC | 0.01 | 0.03 | 0.00 | 0.01 | 0.00 |
| Extended spectrum beta lactamases (ESBLs) | 0.41 | 0.40 | 0.60 | 0.15 | 0.08 |
| Methicillin-resistant *Staphylococcus aureus* (MRSA)* | 0.59* | 0.39 | 0.40 | 0.15 | 0.27 |
| Vancomycin-resistant *enterococci* (VRE) | 0.44 | 0.19 | 0.28 | 0.35 | 0.25 |
| *Clostridium difficile* | 0.82 | 1.04 | 0.64 | 0.44 | 0.54 |
| Influenza** | 0.13 | 0.55 | 0.64 | 1.06 | 0.95 |

*Surveillance definitions revised to include only healthcare associated MRSA
**Inpatient rate per 1000 patient-days (includes community-onset and hospital-onset cases)
Daily monitoring of significant labs are generated electronically to minimize paper waster, improve efficiency for tracking, and minimize data entry burden for staff. We review these data daily, weekly, and monthly to identify clusters that may indicate an outbreak situation.

### Goal #5. Decrease the risk of HAI related to construction and ensure that the design of new or remodeled facilities optimizes infection prevention.

- The IP personnel continued to attend meetings starting with predesign and preconstruction, including a weekly meeting where all on-going projects are discussed.
- Routine walk-throughs were done in all construction areas.
- Infection Control Risk Assessments (ICRAs) were done prior to the start of any construction and the contractors are in-serviced about the infection prevention concerns related to hospital construction.
- Rates of Aspergillus isolated in clinical cultures also were reviewed each week by IPC.
- No increases in clinical isolates were noted from these surveillance data.

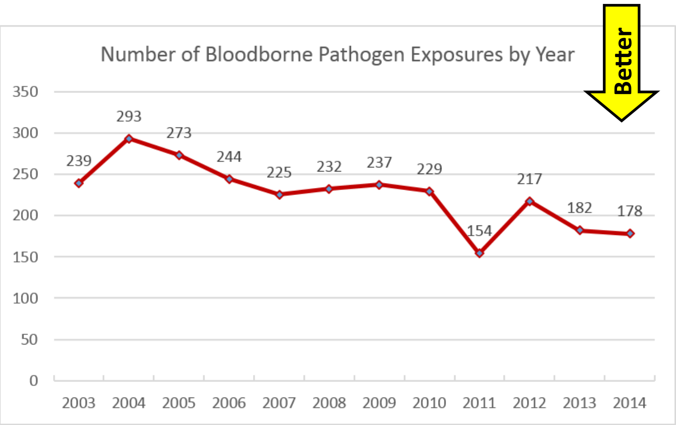
### Goal #6. Collaboration with Center for Occupational Safety & Health (COSH) to decrease occupational infection related hazards.

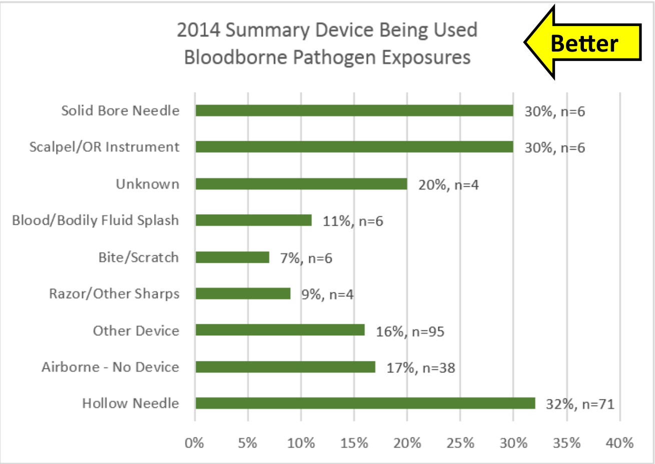
Infection Prevention worked closely with COSH in 2014 to decrease occupational infection related hazards through the following processes:

- Collaborated to implement the annual employee influenza vaccination program.
- Updated annual competency training on subject of reporting of bloodborne pathogen exposures.
- Collaborated with COSH following potential exposure of employees to an infectious illness to consult on prophylaxis or therapy decisions.
- Served on the Products Committee for the evaluation of new devices that could enhance exposure prevention to employees.
- Promoted universal respiratory etiquette as part of standard precautions, which directs the employee to treat all patients presenting with a febrile respiratory illness of unknown etiology as potentially infectious.

COSH upgraded their exposure database in 2014 to include more details regarding each exposure event. The additional details allow better direction of the education opportunities. These data are presented at the IP Committee meetings. During these discussions, input from experts and front line staff are gathered on how to formalize interventions and better prevent these exposures in the future. Below are a few of the data tables now available from COSH.

# INFECTION CONTROL & PREVENTION

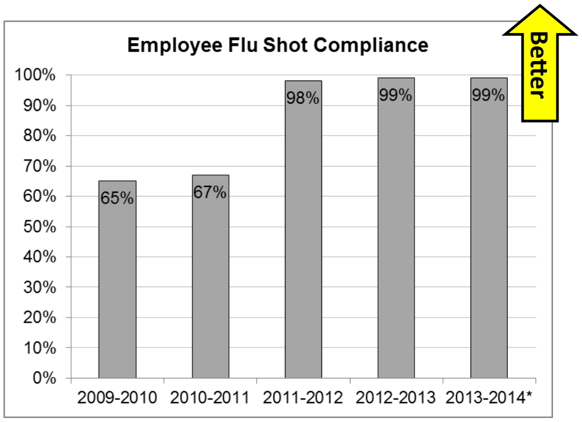




## Influenza Vaccination

DHHA has mandated employee influenza vaccination since the 2011-2012 influenza season. Over the past 4 years of the program, we have successfully implemented an electronic tracking system that allows managers to track the real time status of their employee as well as the IP team to track and report data as needed. The developed tracking system, HANDI has been recognized by the CDC as a superior tool for mass vaccination clinics and the development team has received national awards.

DHHA has successfully partnered with other academic teaching facilities in the Denver area to assure all residents and faculty have been vaccinated. **Ultimately, DHHA has vaccinated >98% of all employees/contractors against seasonal influenza in the four years of this policy. There was a ~2% exemption rate for those medical contraindications or religious waivers each year.**



*The 2014-2015 season is not finalized until 3/31/15 per CDPHE reporting requirements.

## Goal #7. Collaboration with Environmental Services to decrease potential environmental exposures to staff and patients.

IP continues to work closely with the Environmental Services (EVS) program to focus on environmental cleaning protocols. 2014 Initiatives included:

- Created standard work that delineates what EVS will be responsible for cleaning and what the nursing unit's roles will be in cleaning.
- Expanded use of the adenosine triphosphate (ATP) surface monitoring and use of that data to drive educational opportunities.
- Expanded the use of ultraviolet machines to enhance the cleaning protocols in high risk areas.
- Participated in monthly EVS rounds to assure compliance with cleaning protocols throughout the organization.

## Goal #8. Ebola Preparation.

The 2014 Ebola epidemic in West Africa has been the largest in history with over 25,000 cases to date and over 10,000 deaths. With the first imported case into the US, our Ebola preparation activities were put into place, and we quickly completed a comprehensive plan to safely care for Ebola patients at DH. As part of our preparation we completed and continue to do drills, staff training and education. Our Ebola plan and preparation work was validated by The Colorado Department of Public Health and Environment (CDPHE) as well as the CDC, and DH was approved to be an Ebola Treatment Center on the CDC website. We successfully treated a Person Under Investigation (PUI) which allowed us to further refine our plan and enhance the work plan we had in place with our local and state health partners.

# ANTIBIOTIC STEWARDSHIP

In 2014, the AS Program maintained the following surveillance and interventions with goals of promoting optimal antibiotic use, reducing unnecessary use of broad-spectrum antibiotics, and facilitating the selection of cost-effective treatment regimens.

- Quarterly antibiotic utilization and cost surveillance with quarterly reporting to the IP Committee and the Chief Quality Officer.
- Development of hospital, ICU-specific, and pediatric antibiograms with an analysis of antimicrobial resistance trends at DHHA.
- Formulary restriction and pre-authorization (via the Antimicrobial Stewardship pager) for broad spectrum, potentially toxic, or high-cost antibiotics.
- Prospective case reviews and provider feedback and prescribing recommendations.
- Development, implementation, and maintenance of Clinical Care Guidelines for common infections.
- Expansion and maintenance of the Antimicrobial Stewardship sub site on the hospital intranet.
- Maintenance of an active Antimicrobial Subcommittee of Pharmacy and Therapeutics (P&T).

## FOUR NEW INITIATIVES

### Goal 1. Improve antibiotic selection, dose, and duration of therapy at the transition from inpatient to outpatient care.

In 2014, with mentorship and input from the AS team, a retrospective cohort study of 300 patients who were prescribed an oral antibiotic at the time of hospital discharge was completed. The results yielded important information regarding opportunities to improve antibiotic prescribing at this transition in care:

- 60% of the antibiotics prescribed at hospital discharge were for three common infections: community acquired pneumonia, urinary tract infection, and skin infection.
- Half of the antibiotics prescribed were agents with a broad spectrum of gram-negative activity, despite the fact that DHHA treatment guidelines do not advocate these agents for most infections.
- After independent review by two Infectious Diseases physicians, over half of the antibiotic prescriptions were judged to be inappropriate, most commonly because of an excessive duration of therapy with respect to DHHA treatment guidelines.

Based on these data, the AS Program developed and implemented an intervention to improve antibiotic prescribing at the time of hospital discharge. The intervention included the following components:

- **Development of specific DHHA guidance for antibiotic use at the time of hospital discharge:** This guidance was made available to providers in multiple formats including laminated pocket cards, a smartphone web application, and via the Antimicrobial Stewardship sub site of the Pulse.
- **Provider education:** Data were reviewed from the above study and discussed appropriate prescribing strategies at house staff conferences.
- **Peer champion advocacy:** Representatives from Hospital Medicine discussed the intervention and prescribing recommendations at their staff meetings.
- **Prospective audit of discharge prescriptions and real-time provider feedback:** Pharmacists from the Discharge Pharmacy received training to review all antibiotic prescriptions and assess for concordance with DHHA guidance. In cases where the prescription was discordant from institutional guidance, the Infectious Diseases pharmacist was notified. When appropriate, the study doctor contacted prescribers to revise prescriptions in accordance with the DHHA guidance.

The AS Program is currently in the process of evaluating the impact of this multifaceted intervention on antibiotic selection, dosing, and duration of therapy as well as clinical outcomes.

### Goal 2. Develop an antibiotic utilization surveillance tool for the ED or Adult Urgent Care Center (AUCC) and implement a new intervention to improve antibiotic prescribing.

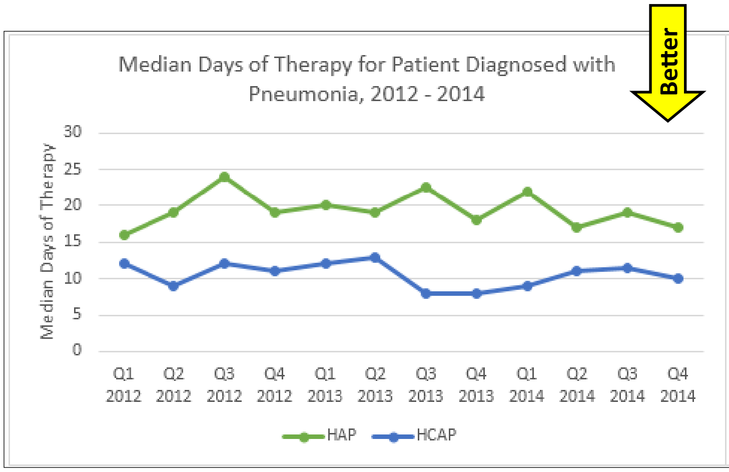
The AS Program collaborated with an ED attending, residents, and a pharmacist to develop a smartphone web application containing DHHA antibiotic utilization guidance. The smartphone application was distributed to ED house staff on August 1, 2014. **Within only 6 weeks, 305 unique users had accessed the prescribing guidance on the smartphone application.** Most commonly for skin and soft tissue infections, urinary tract infections, and pneumonia. Preliminary data demonstrated that adherence to DHHA prescribing guidance for UTIs increased from 32% prior to the smartphone application to 64% after release of the application. Based on the positive responses to this tool, the AS Program has expanded the prescribing guidance in the smartphone application and subsequently distributed it to all DHHA providers. We are in the process of measuring institution wide use of the application and developing an approach to determine the impact of the tool on antibiotic prescribing.

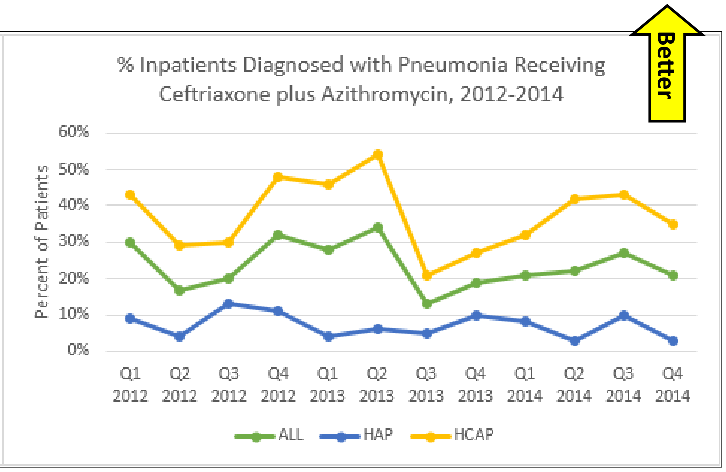
### Goal 3. Develop, implement, and measure the impact of a Clinical Care Guideline (CCG) for healthcare-associated and hospital-acquired infections at DH.

With input from relevant stakeholders including Hospital Medicine, Pulmonary/Critical Care, Pharmacy, and Infectious Diseases, the AS Program led the development of a CCG for the management of healthcare–associated (HCAP) and hospital-acquired pneumonia (HAP). The goals of this guidance were to standardize antibiotic selection, promote use of narrower-spectrum antibiotic regimens in appropriate clinical scenarios, and shorten treatment durations. The CCG was approved in September 2014, and a number of steps have been taken to promote uptake of the prescribing guidance:

- E-mail communication to providers regarding the availability of the new CCG.
- Incorporation of the treatment recommendations in a paper order set used by ED providers to initiate antibiotic therapy for these conditions.
- Incorporation of the treatment recommendations in the point-of-care smartphone web application.
- Peer champion advocates from Hospital Medicine who discussed the new management recommendations at their department meetings.

From a surveillance standpoint, it is difficult to identify patients with HCAP or HAP because ICD-9 codes are not specific for classifications of pneumonia. Since performing chart reviews to distinguish cases of HCAP or HAP from other types of pneumonia is not feasible over the long term, the AS Program has been working on the development of novel surveillance tools to electronically identify cases of HCAP and HAP and monitor two key prescribing metrics, the duration of therapy and use of ceftriaxone plus azithromycin (a narrow-spectrum antibiotic regimen). If the prescribing guidance in the CCG is followed, we expect to see a reduction in the average duration of therapy for HCAP and HAP and an increase in the proportion of cases where ceftriaxone plus azithromycin is utilized. Below are examples of the surveillance tools under development.





# ANTIBIOTIC STEWARDSHIP

**Goal 4. Expand antimicrobial stewardship collaborations within the Community.**

Beginning in August 2014, Dr. Tim Jenkins has been working with the Colorado Hospital Associate as one of the lead faculty in the development of a statewide antimicrobial stewardship collaborative. The collaborative will focus on improving antibiotic use for two of the most common infections treated in the hospital, urinary tract infections and skin infections. DHHA collaborated with the medical director of 14 nursing homes in the metropolitan Denver area on a project to improve the evaluation and treatment of nursing home residents with skin infections.

During the course of this project, records of residents from 12 nursing homes were reviewed to describe the epidemiology, clinical evaluation, and antibiotic treatment of skin infections. This revealed that most antibiotics for skin infections in nursing home residents are prescribed upon receipt of a telephone call from a nurse, without a clinical evaluation by a prescriber. In approximately 40% of cases, a medical provider did not clinically evaluate the resident within 48 hours of the start of antibiotic therapy. Furthermore, although national guidelines recommend short courses of therapy (5-7 days) for skin infections, such as cellulitis, over 40% of patients received 10 days or more of antibiotic therapy. This collaboration is now participating in the planning stages of an intervention to address antimicrobial stewardship opportunities highlighted by this initial project: improving timely clinical evaluations for residents with possible skin infections and shortening treatment durations.

# ACCREDITATION

## THE JOINT COMMISSION

In May 2014, Denver Health underwent a successful survey by The Joint Commission for Inpatient Hospital services and Life Safety. There were two surveyors for five days and one surveyor for four days. There were nine recommendations for improvement (RFI) identified and follow up interventions were implemented within requested timeframes. There were four RFIs in Environment of Care, two RFIs in Provision of Care, Treatment and Services, one RFI in Leadership, one RFI in Record of Care, and one RFI in Medication Management. Denver Health remains fully accredited for three years.

## FAILURE MODES AND EFFECTS ANALYSIS (FMEA)

The Joint Commission requires under the Leadership Chapter (LD.04.04.05: EP 10) that at least every 18 months, the hospital selects a high-risk process and conducts a pro-active risk assessment. The assessment format Denver Health has selected is the Failure Modes and Effects Analysis (FMEA).

**Infant Security Failure Modes and Effects Analysis (FMEA):** In the fall of 2014, Denver Health received staff reports of incidents when newborn infants left the Mom-Baby floor in Pavilion C with a parent prior to receiving appropriate discharge or escort. None of these incidents were the result of an attempted abduction or deliberate elopement. The Department of Patient Safety and Quality in collaboration with Maternal Child leadership, Security and Engineering conducted an FMEA on the process of newborn infant security from birth to discharge to address the following:

- Identify and assess the effects of potential error or system failure
- Predict outcomes of weakness
- Adopt system change to minimize potential harm

**Failure modes identified:** banding process, mother, family and visitor education/teaching, transporting of infants, access to unit by staff and visitors, security training, frequency of abduction drills and the discharge process.

**Possible effects of failure:** Purposeful abduction of an infant, elopement of mother with infant, wrong infant given to mother, loss of reputation in the community and serious legal implications.

**Strategies to reduce risk focused on:** Education to staff and patients on units that care for infants, revision of staff competencies to include increased focus on infant security, development of a Pavilion C security “cheat sheet”, allocation of additional resources during high volume times at the security check in desk, clarification of processes (visitor management and discharge) and delineate responsibilities, involvement of engineering to optimize current security and camera surveillance, provide signage that increases awareness of infant security and perform a risk assessment to determine if current system is secure or needs an added layer to the electronic system.

## CONTINUAL READINESS

Denver Health maintains a continual state of readiness for any surveyors who come to DHHA. There is a Continual Readiness Steering Committee which consists of appropriate individuals throughout the organization who oversee and assist with adherence to all Joint Commission, CMS and other voluntary partnerships requirements. The Continual Readiness Committee meets monthly and on a quarterly basis provides information and feedback to The Continual Readiness Task Force. The Task Force members are in management and leadership positions so that they understand and disseminate the information to their respective areas. This model engages everyone and therefore communication remains fluid and current.

## TRACERS

Tracers are a method to engage front line staff in order to prepare, educate and encourage direct two way communication concerning new quality of care initiatives, Joint Commission Standards, CMS or State Regulations. The Patient Safety, Quality and Regulatory Department conduct tracers and encourages nursing and ancillary leadership to conduct them as well.

# ACCREDITATION

## OUTPATIENT BEHAVIORAL HEALTH SURVEYS

- January 2014, Outpatient Behavioral Health Services (OBHS)

OBHS was required to prepare a complete action plan to adjust documentation to meet new rules established in November 2013. A full plan was submitted and successfully completed. OBHS retained full licensure.

- April 2014, Signal Behavioral Health Network site visit

OBHS received a passing site-visit. Additional training was provided to staff to ensure service data and payer type was accurately entered into Signal's web-based portal.

- May 2014, Joint Commission

OBHS received a finding regarding medication reconciliation. An action plan was submitted and we achieved our measure of success. Our medication reconciliation process is current and sustainable.

- May 2014, Drug Enforcement Administration (DEA)

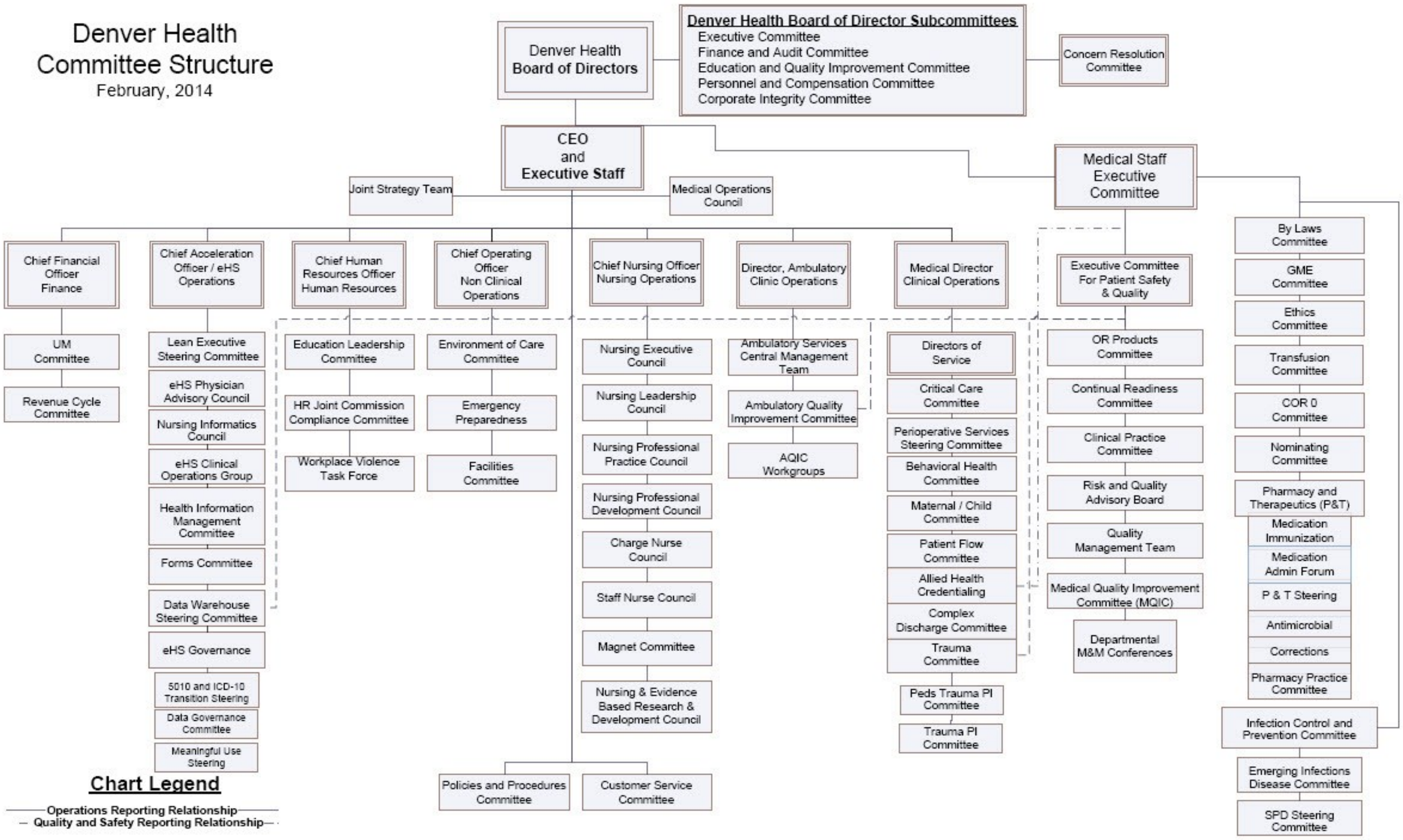
OBHS had the wrong address on our 222 forms, our biennial inventory was missing and some 222 forms were missing dates. This was corrected.

- June 2014, Office of Behavioral Health Controlled Substance License

OBHS received a provisional license pending action on response to DEA, organizational chart of individuals with access to controlled substance. Full licensure issued.

- July 2014, SAMHSA Center for Substance Abuse Treatment Visit to review the Joint Commission's 2014 survey. Certificate of appreciation provided.

# COMMITTEE STRUCTURE


Denver Health
Committee Structure
February, 2014
Denver Health Board of Directors
Denver Health Board of Director Subcommittees
Executive Committee
Finance and Audit Committee
Education and Quality Improvement Committee
Personnel and Compensation Committee
Corporate Integrity Committee
Concern Resolution Committee
CEO and Executive Staff
Joint Strategy Team
Medical Operations Council
Medical Staff Executive Committee
Chief Financial Officer Finance
UM Committee
Revenue Cycle Committee
Chief Acceleration Officer / eHS Operations
Lean Executive Steering Committee
eHS Physician Advisory Council
Nursing Informatics Council
eHS Clinical Operations Group
Health Information Management Committee
Forms Committee
Data Warehouse Steering Committee
eHS Governance
5010 and ICD-10 Transition Steering
Data Governance Committee
Meaningful Use Steering
Chief Human Resources Officer Human Resources
Education Leadership Committee
HR Joint Commission Compliance Committee
Workplace Violence Task Force
Chief Operating Officer Non Clinical Operations
Environment of Care Committee
Emergency Preparedness
Facilities Committee
Policies and Procedures Committee
Customer Service Committee
Chief Nursing Officer Nursing Operations
Nursing Executive Council
Nursing Leadership Council
Nursing Professional Practice Council
Nursing Professional Development Council
Charge Nurse Council
Staff Nurse Council
Magnet Committee
Nursing & Evidence Based Research & Development Council
Director, Ambulatory Clinic Operations
Ambulatory Services Central Management Team
Ambulatory Quality Improvement Committee
AQIC Workgroups
Medical Director Clinical Operations
Directors of Service
Critical Care Committee
Perioperative Services Steering Committee
Behavioral Health Committee
Maternal / Child Committee
Patient Flow Committee
Allied Health Credentialing
Complex Discharge Committee
Trauma Committee
Peds Trauma PI Committee
Trauma PI Committee
Executive Committee For Patient Safety & Quality
OR Products Committee
Continual Readiness Committee
Clinical Practice Committee
Risk and Quality Advisory Board
Quality Management Team
Medical Quality Improvement Committee (MQIC)
Departmental M&M Conferences
By Laws Committee
GME Committee
Ethics Committee
Transfusion Committee
COR 0 Committee
Nominating Committee
Pharmacy and Therapeutics (P&T)
Medication Immunization
Medication Admin Forum
P & T Steering
Antimicrobial
Corrections
Pharmacy Practice Committee
Infection Control and Prevention Committee
Emerging Infections Disease Committee
SPD Steering Committee
Chart Legend
Operations Reporting Relationship
Quality and Safety Reporting Relationship

# GLOSSARY OF TERMS AND ABBREVIATIONS

## A-B

| | |
|---|---|
| AHRQ | Agency for Healthcare Research and Quality |
| AMC | Academic Medical Center |
| AMI | Acute Myocardial Infarction |
| AS | Antimicrobial Stewardship |
| ATP | Adenosine Triphosphate |
| AUCC | Adult Urgent Care Center |

## C

| | |
|---|---|
| CABG | Coronary Artery Bypass Graft |
| CAUTI | Catheter Associated Urinary Tract Infection |
| CCG | Clinical Care Guideline |
| CLABSI | Central Line Associated Blood Stream Infection |
| CDC | Centers for Disease Control and Prevention |
| CDI Team | Clinical Documentation Integrity Team |
| CDPHE | Colorado Department of Public Health and Environment |
| CFMC | Colorado Foundation for Medical Care |
| CHA | Colorado Hospital Association |
| CHG | Chlorhexidine Gluconate |
| CMS | The Centers for Medicare and Medicaid Services |
| CMMI | Center for Medicare & Medicaid Innovation |
| COPD | Chronic Obstructive Pulmonary Disease |
| COR Zero | Cardiac or Respiratory Zero |
| COSH | Center for Occupational Safety & Health |
| CRE | Carbapenem-Resistant *Enterobacteriaceae* |

## D

| | |
|---|---|
| DEA | Drug Enforcement Administration |
| DHHA | Denver Health and Hospital Authority |
| DRG | Diagnosis-Related Group |
| DPSQ | Department of Patient Safety and Quality |

## E

| | |
|---|---|
| ED | Emergency Department |
| EP | Eligible Professionals |
| ESBL | Extended Spectrum Beta Lactamases |
| EVS | Environmental Services |

## F

| | |
|---|---|
| FMEA | Failure Modes and Effects Analysis |

## G

| | |
|---|---|
| GPRO | Group Practice Reporting Option |

## H

| | |
|---|---|
| HAC | Hospital Acquired Condition |
| HAP | Hospital Acquired Pneumonia |
| HAPU | Hospital Acquired Pressure Ulcer |
| HAI | Healthcare Associated Infections |
| HBIPS | Hospital-Based Inpatient Psychiatric Services |
| HCAP | Healthcare Associated Pneumonia |
| HCC | Hierarchical Condition Category |
| HCPF | Colorado Department of Health Care Policy and Financing |
| HEN | Hospital Engagement Network |
| HF | Heart Failure |
| HIPPI | Healthcare Infection Prevention Performance Improvement |
| HQIP | Hospital Quality Incentive Program |
| HVHC | High Value Healthcare Collaborative |

## I-L

| | |
|---|---|
| ICRA | Infection Control Risk Assessments |
| ICU | Intensive Care Unit |
| IMM | Immunization |
| IP | Infection Prevention |
| IPC | Infection Prevention Committee |
| IUUC | Immediate Use Steam Sterilization |

## M

| | |
|---|---|
| Medicare FFS | Medicare Fee-For-Service |
| MDRO | Multi-drug Resistant Organisms |
| MICU | Medical Intensive Care Unit |
| MRSA | Methicillin Resistant *Staphylococcus aureus* |
| MSEC | Medical Staff Executive Committee |

## N

| | |
|---|---|
| NDNQI | National Database of Nursing Quality Indicators |
| NHSN | National Healthcare Safety Network |
| NICU | Neonatal Intensive Care Unit |
| NORE | Nursing Outcomes, Research, and Evidence-Based Practice Department |

## O

| | |
|---|---|
| OBHS | Outpatient Behavioral Health Services |
| OPPE | Ongoing Physician Performance Evaluations |
| OR | Operating Room |

## P

| | |
|---|---|
| PC | Perinatal Care Conditions |
| PCU | Progressive Care Unit |
| PFS | Physician Fee Schedule |
| PICC | Peripherally Inserted Central Catheter |
| PM | Pain Management |
| PN | Pneumonia |
| PQRS | Physician Quality Reporting System |
| PSQ | Patient Safety and Quality |
| PSI | Patient Safety Intelligence Reporting |
| PSI | Patient Safety Indicator |

# GLOSSARY OF TERMS AND ABBREVIATIONS

| | |
|---|---|
| P&T | Pharmacy and Therapeutics |
| PUI | Person Under Investigation |
| PUPPI | Pressure Ulcer Performance Improvement Champion Program |
| PY | Program Year |
| **Q** | |
| QA | Quality Assurance |
| Q&A | Quality and Accountability |
| QRUR | Quality and Resource Use Report |
| **R** | |
| RFI | Recommendation For Improvement |
| RN | Registered Nurse |
| RRT | Rapid Response Team |
| **S** | |
| SAMHSA | Substance Abuse and Mental Health Services Administration |
| SCIP | Surgical Care Improvement Project |
| SICU | Surgical Intensive Care Unit |
| SIR | Standardized Infection Ratio |
| SPD | Sterile Processing Department |
| SSI | Surgical Site Infection |
| **T** | |
| THA/TKA | Total Hip and Total Knee Arthroplasty |
| **U** | |
| UHC | University Health System Consortium |
| UTI | Urinary Tract Infection |
| **V-Z** | |
| VAP | Ventilator Associated Pneumonia |
| VBP | Value-Based Purchasing |
| VLBW | Very Low Birth Weight |
| VM | Value-Based Payment Modifier |
| VON | Vermont Oxford Network |
| VRE | Vancomycin-resistant *enterococci* |
| VTE | Venous Thromboembolism |

# CONTACT INFORMATION AND ACKNOWLEDGEMENTS

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Level One Care for ALL

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