2015 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 *2015 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

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EXECUTIVE SUMMARY

The list below represents a summary of key outcomes in 2015 and areas of opportunity.

- Denver Health and Hospital Authority (DHHA) was recognized as a Joint Commission Top Performer on Key Quality Measures for 2015.

- DHHA achieved 4 out of 5 stars on the University HealthSystem Consortium (UHC) Inpatient Quality and Accountability Annual Scorecard.
    - ◊ We have achieved at least 4 stars (~top 1/3) for 10 straight years.
    - ◊ This year's score includes Top 10 rankings in the areas of mortality and efficiency.

- DHHA achieved 4 out of 5 stars on the inaugural UHC Ambulatory Care Quality and Accountability Scorecard
    - ◊ This ranking is focused on quality, access, and appropriate utilization of specialty care and ED service
    - ◊ This includes a rank of #1 for the domain of "Quality and Efficiency."

- DHHA ranked #1 among safety net hospitals on the UHC Supply Chain Performance Excellence Scorecard. This achievement takes cooperation from every single part of DHHA and is a wonderful tribute to the constant work of our organization to manage expenses.

- Tamara Swigert, RN was recognized by the Rocky Mountain Association of Diabetes Educators (state chapter of the American Association of Diabetes Educators) as their 2015 Diabetes Educator of the Year. This is a tremendous honor for Tammy and validates the excellence many of us have witnessed when she is teaching staff and patients at DHHA.

- Successful implementation of PolicySTAT, a new document control system resulting in one centralized location with automatic reminders for all policies, procedures, and guidelines.

- For the Federal Fiscal Year 2016 CMS Hospital-Acquired Conditions Reduction Program, DHHA received a 1% payment reduction due to infections in 2013-2014 and postoperative complications in 2012-2014.

- For the Federal Fiscal Year 2016 CMS Readmissions Reduction Program, DHHA experienced a very small penalty (0.03% of Medicare fee-for-service hospital payments), amounting in a reduction of less than $15,000 (out of approximately $1.5 million at risk).

- Adverse event reduction was measured through our Target Zero Metric and our events decreased by 14% compared to the prior year.

- The Ambulatory Care Services (ACS) department orchestrated improvements across all ambulatory care sites in the ambulatory bundle metric, significantly exceeding the established target. This includes measures of diabetes care, hypertension care, cancer screening, asthma care, pediatric dental care, and prenatal services.

- DHHA demonstrated a substantial improvement in inpatient hand hygiene adherence rate from 64% in 2014 to 74% in 2015. Observations by the Infection Prevention Team as well as by nursing unit leadership increased from 2,667 in 2014 to 4,254 in 2015.

EXECUTIVE SUMMARY

- DHHA's performance on the state of Colorado's Hospital Quality Incentive Payment Program (HQIP) in 2015 resulted in the third highest incentive payment in Colorado at $5.86M. The award includes measures of emergency department processes of care, perinatal care, patient satisfaction, and readmissions.

- In 2015, all CMS-defined Emergency Department timing metrics either improved throughout the year or remained better than target for the entire year.

- In preparation for the 2016 Baby Friendly Hospital site review, DHHA experienced a significant increase in the CMS-defined exclusive breast milk feeding measure, exceeding the target for the last half of the year.

- In response to a single adverse event, DHHA underwent a significant redesign and improvement initiative of the informed consent process.

- DHHA's Community Health Centers were recognized by the Centers for Disease Control and Prevention as part of the Million Hearts Champion Awards for helping our patients control their blood pressure and in preventing heart attacks and strokes.

DHHA STRATEGIC PILLARS

DHHA PILLARS OVERVIEW

In 2015, Patient Safety and Quality remained as one of Denver Health and Hospital Authority's (DHHA) Strategic Pillars. Research and Education was announced as the seventh pillar. All Pillars are supported by the foundational strategy of service. 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, enhanced inpatient quality of care, and improvement in specific ambulatory and medication-related care processes. The efforts and results are stratified into 3 domains: Culture of Patient Safety, Harm Reduction, and Quality Improvement.

2015
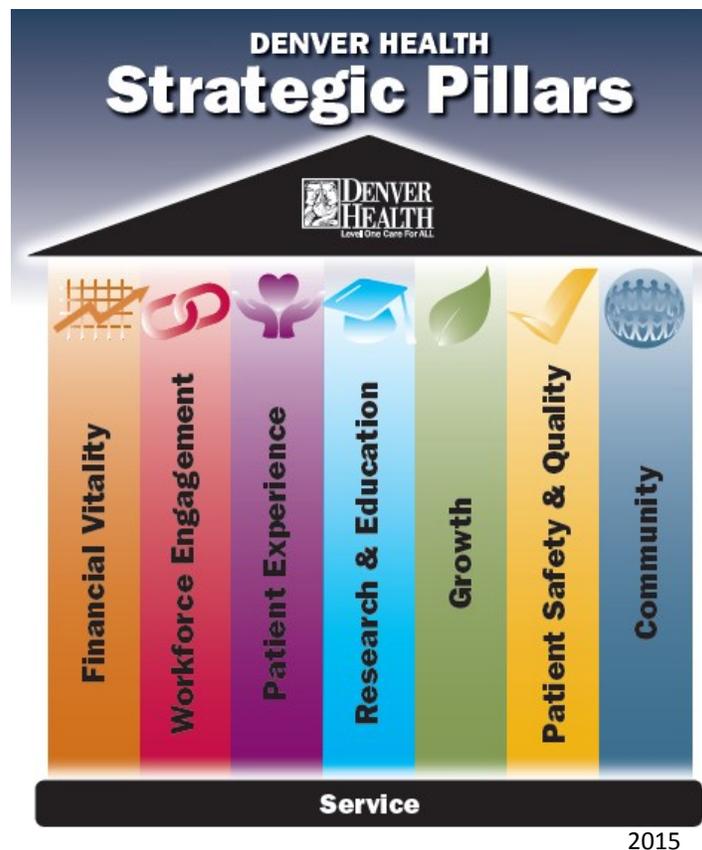
PATIENT SAFETY & QUALITY PILLAR METRICS

CULTURE OF PATIENT SAFETY

DHHA has created a culture of safety where staff are not only encouraged to work toward change but to take action when needed. Leaders are visibly committed to change and provide opportunities for staff to openly share safety information. Without such a culture, staff members are often unwilling to report unsafe conditions and adverse events because they fear reprisal or believe reporting never results in any change.

Colorado's state legislature created the Hospital Quality Incentive Program (HQIP) in 2011 to recognize hospitals that provide services which improve health care outcomes for patients. Hospitals receive incentive payments based on the quality of their care compared to other hospitals in Colorado. HQIP incorporated Culture of Safety as an optional measure in 2015 and a mandatory measure in 2016. The components of this measure consist of a Patient and Family Advisory Council, Leadership Safety Rounds, Leadership Safety Huddles, Patient Safety Survey, and Safety Unit Briefings.

Patient and Family Advisory Council

DHHA established a Patient Family Advisory Council (PFAC) in October of 2015. The council consists of ten members, nine members who are existing or former patients of DHHA, as well as one member who is currently not a patient. Meetings occur every other month. PFAC's primary objectives are to bring together patient and family advisors to foster a culture of patient and family centered care; to share ideas in the implementation of new and existing programs across the hospital; and to identify and articulate the patient and family perspective with regard to improving the patient experience.

The council discussed improving the patient experience and what was important to the members, as well as ideas and feedback on a bereavement cart for families going through a difficult time or having lost someone. Based on the PFAC's recommendations, DHHA implemented a bereavement cart as well as a comfort cart for family members in November of 2015. Plans were initiated to add a hospitality cart for family members and guests visiting the hospital in January 2016.

Leadership Safety Rounds

DHHA leadership performed weekly rounds with staff promoting a safe environment. Dr. Art Gonzalez, Chief Executive Officer, personally sets aside an hour each day for rounding on both staff and patients. He also leads weekly Gemba rounds which focus on system issues.

Leadership Safety Huddles

In 2015, DHHA expanded the Daily Patient Safety Briefings to weekends. These short, daily meetings are attended by hospital executives, senior leaders, department managers, and front line staff. Through these huddles, all employees have a venue to report events that have occurred within the prior 24 hours or to discuss any potential safety concerns for the ensuing 24 hours. Through this collaboration, patient safety issues are concurrently identified and addressed seven days a week.

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PATIENT SAFETY & QUALITY PILLAR METRICS

CULTURE OF PATIENT SAFETY

The Joint Commission requires all hospitals gather data regarding the staff's perceptions of their organization's safety culture at least every 24 months. However, biannual results did not provide ample opportunities for change. DHHA recognized that in order to continually improve our safety culture, more frequent surveys were required. Beginning in 2014, a three-item survey was sent via SurveyMonkey to clinical employees twice a year. The first survey was sent in January to all participants to determine the baseline rates. Ten percent (10%) of clinical employees were randomly selected each month to receive their second survey. All responses were anonymous, allowing the employees to be open and honest with their answers.

The graph below demonstrates that DHHA is making positive improvements on two of the three questions. As we witness positive improvements overall, an area of opportunity is the statement, "Staff do not feel like their mistakes are held against them." One potential reason debated for the lagging outcome is that this statement is negatively worded and research has shown that these types of questions cause respondent confusion. This question is from the Agency for Healthcare Research and Quality (AHRQ) Patient Safety Culture survey so rewording the question would impact our ability to benchmark results. DHHA engaged Press Ganey to administer a new Employee Engagement and Patient Safety Survey in the fall of 2015 so this question will be worded differently but have the same intent.

NOTE: The target line for each metric is denoted in the same color as the metric.
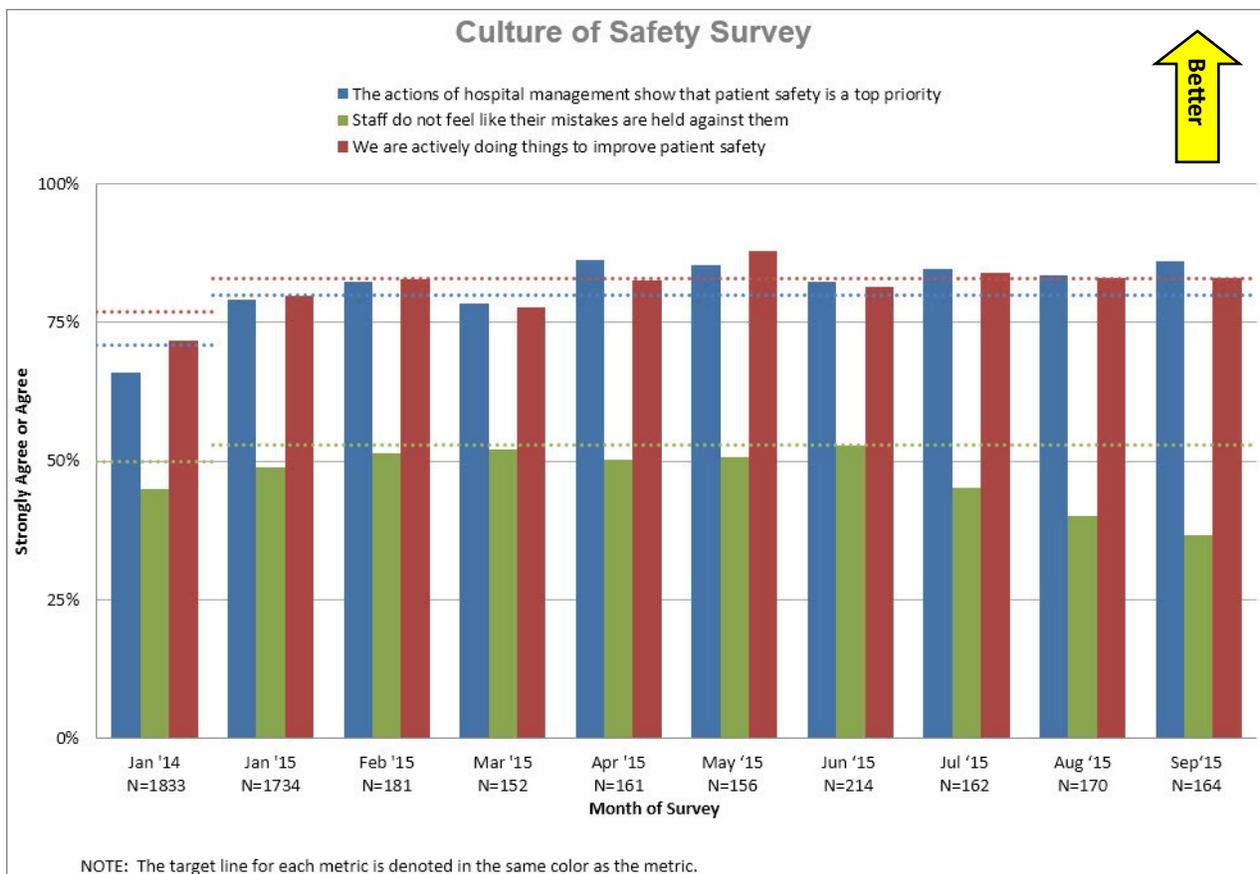
PATIENT SAFETY & QUALITY PILLAR METRICS

CULTURE OF PATIENT SAFETY

In October 2015, DHHA rolled out a new employee engagement survey vendor and the patient safety culture survey was included to streamline the process and to reduce survey fatigue from our employees. Two separate surveys were distributed, one for employees and one for providers. Below are the questions for each group with a comparison to the National Healthcare Percentile.

Employee Engagement Survey 2015	% Positive Responses	National Healthcare Percentile	
My work unit works well together.	84%	53	🟡
Different work units work well together at this organization.	64%	46	🟡
There is a climate of trust within my work unit.	74%	81	🟢
I am involved in decisions that affect my work.	68%	73	🟡
This organization provides high-quality care and service.	82%	20	🔴
This organization makes every effort to deliver safe, error-free care to patients.	86%	20	🔴
My work unit is adequately staffed.	54%	52	🟡
In my work unit, we discuss ways to prevent errors from happening again.	85%	21	🟡
The amount of job stress I feel is reasonable.	66%	79	🟢
I would recommend this organization to family and friends who need care.	74%	8	🔴
I can report patient safety mistakes without fear of punishment.	85%	45	🟡
Communication between physicians, nurses, and other medical personnel is good in this organization.	71%	39	🟡
Important information is effectively communicated during shift changes.	79%	-	-
Communication between work units is effective in this organization.	66%	-	-
Employees will freely speak up if they see something that may negatively affect patient care.	81%	-	-
Employees feel free to question the decisions or actions of those with more authority.	58%	-	-
When a mistake is repeated it feels like the focus is on solving the problem, not writing up the person.	71%	-	-
Mistakes have led to positive changes here.	75%	-	-
We are actively doing things to improve patient safety.	88%	-	-
Senior management (Executive Staff) provides a work climate that promotes patient safety.	78%	-	-
I feel free to raise workplace safety concerns.	85%	-	-
Where I work, employees and management work together to ensure the safest possible working conditions.	82%	-	-
There is effective teamwork between physicians and nurses at this hospital.	76%	-	-

Note: Colors represent the corresponding quartile. Red is the lower quartile,
yellow is the middle two quartiles, and green is the upper quartile.

Source: Press Ganey 2015

PATIENT SAFETY & QUALITY PILLAR METRICS

CULTURE OF PATIENT SAFETY

Provider Engagement Survey 2015			
	% Positive Responses	Nat'l UHC Physician Percentile	
I would recommend Denver Health to family and friends who need care.	61%	10	🔴
There is good teamwork between providers and nurses at this hospital.	88%	90	🟢
There is effective communication between the nursing staff and providers regarding patient care.	85%	86	🟢
This hospital seems appropriately staffed to provide high-quality care to patients.	49%	28	🟡
Different departments work well together at this hospital.	63%	56	🟡
There is a climate of trust in this clinic/group.	87%	99	🟢
This clinic/group cares about quality improvement.	90%	97	🟢
This clinic/group provides high-quality care and service.	91%	60	🟡
This clinic/group makes every effort to deliver safe, error-free care to patients.	94%	95	🟢
I am satisfied with the effectiveness of communication between hospital & staff physicians regarding patient care.	84%	-	-
There is a climate of trust in this hospital.	48%	-	-
This hospital cares about quality improvement.	81%	-	-
This hospital provides high-quality care and service.	77%	-	-
This hospital makes every effort to deliver safe, error-free care to patients.	82%	-	-
I am satisfied with the teamwork demonstrated between the operating room services nursing staff & technical staff.	66%	-	-
There is good teamwork between physicians and staff at this clinic/group.	88%	-	-
There is effective communication between the staff and providers regarding patient care.	88%	-	-
The amount of job stress I feel is reasonable.	54%	-	-

Source: Press Ganey 2015

Note: Colors represent the corresponding quartile. Red is the lower quartile,
yellow is the middle two quartiles, and green is the upper quartile.

PATIENT SAFETY & QUALITY PILLAR METRICS

HARM REDUCTION

In 2013, the clinical and executive leadership of the enterprise identified five distinct harm event types that were a) fully adjudicated by staff in the Department of 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 2015, we set a target of reducing the raw number of target zero events by 20% compared to 2014. While we did not achieve the target, we did experience a significant reduction (14%) from the prior year baseline. Improvement efforts are described in future report sections. In 2016, catheter associated urinary tract infections will be added to the Target Zero metric.
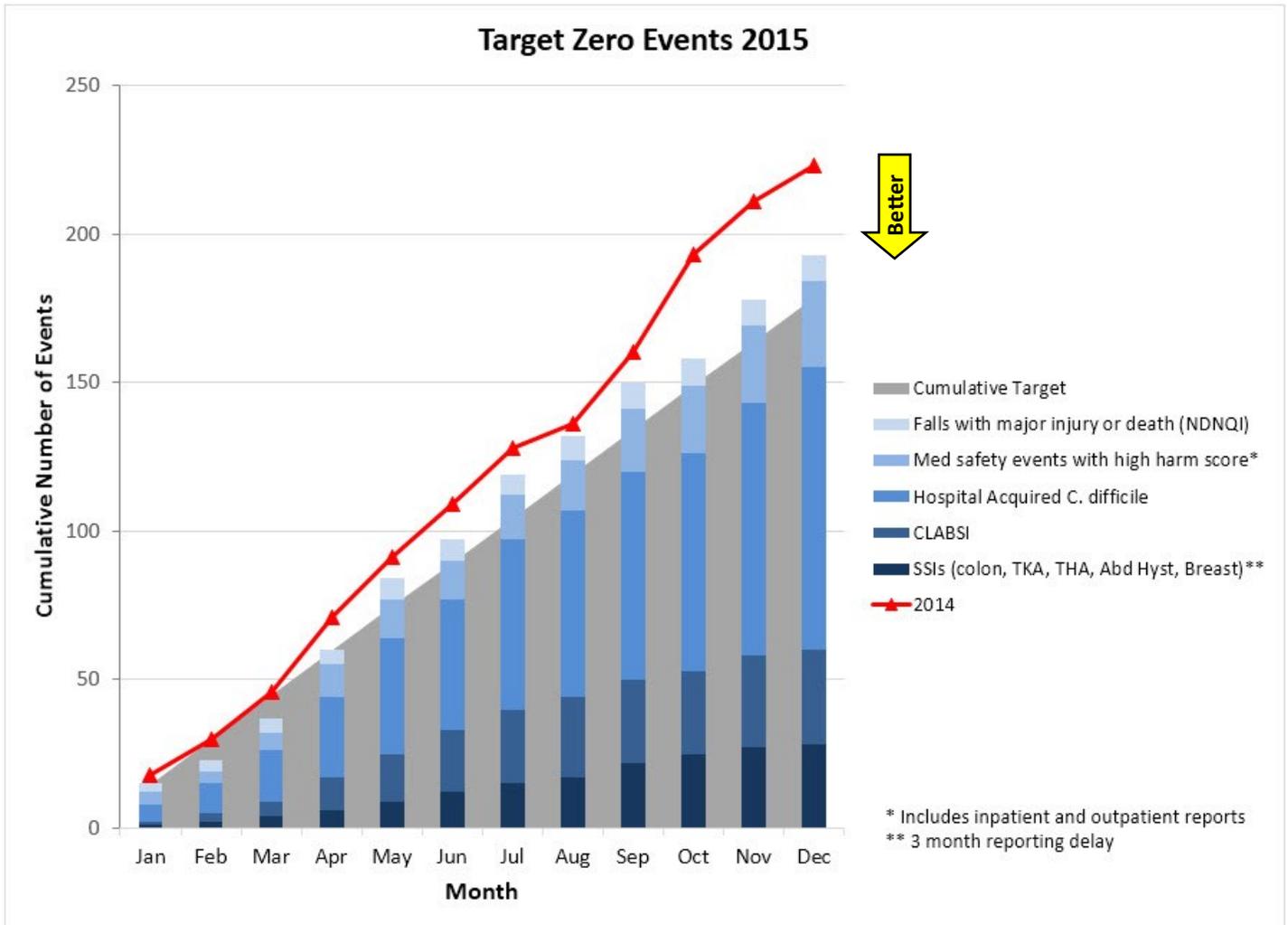
PATIENT SAFETY & QUALITY PILLAR METRICS

QUALITY IMPROVEMENT

The clinical and executive leadership of the enterprise selected three broad metrics for quality improvement for 2015: 1) Rank in the annual University HealthSystem Consortium (UHC) Inpatient Quality and Accountability study, 2) Improvement on the ambulatory bundle comprised of six primary care performance measures, and 3) ambulatory medication reconciliation performance.

UHC Inpatient Quality and Accountability (Q&A) Study

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 2015, DHHA received high rankings for the domains of mortality, equity, and efficiency. DHHA received 4 of 5 stars and improved its ranking from the previous year. DHHA has placed in the best ~1/3 of approximately 100 AMCs for 10 consecutive years. However, the 2015 ranking was lower than the DHHA 2015 target of "top 10."

Denver Health UHC Star Ratings
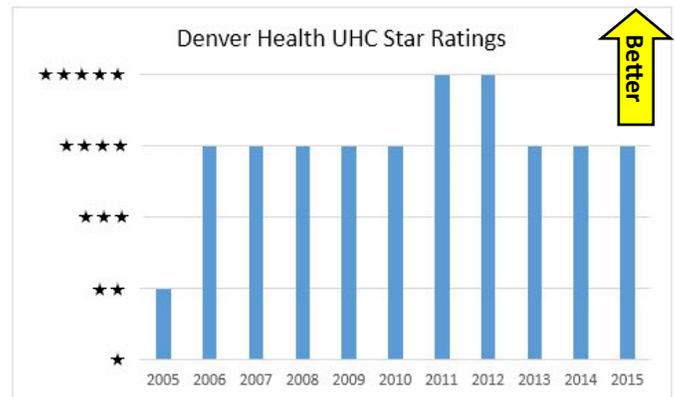
2015 Quality and Accountability Performance Scorecard

Star Rating	Overall Rank	Overall Score
★★★★	31	66.07%

Domain Performance

Mortality 16.88% of 25%
Equity 5.00% of 5%
Efficiency 6.48% of 10%
Patient Centeredness 7.08% of 15%

Overall Score 66.07%

Safety 15.00% of 25%
Effectiveness 15.63% of 20%

Color based on domain rank

| 01 - 10 | 11 - 20 | 21 - 30 | 31 - 40 | 41 - 50 | 51 - 60 | 61 - 70 | 71 - 80 | 81 - 90 | 91 - 102 |

Source UHC (2015)
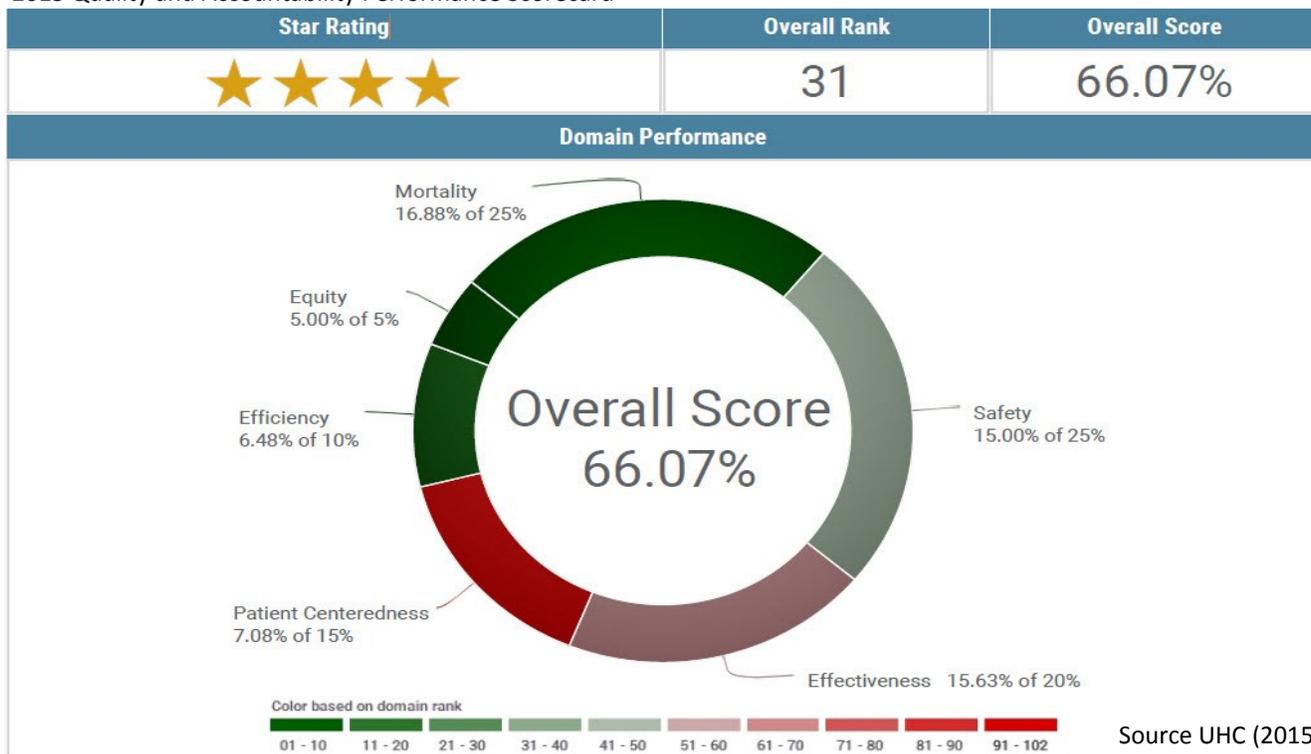
PATIENT SAFETY & QUALITY PILLAR METRICS

AMBULATORY QUALITY BUNDLE

The Department of Ambulatory Care Services (ACS) constructed a bundle to measure quality performance across six domains of care (cancer screening, pediatric dental care, diabetes, prenatal care, hypertension, and asthma) by 16 primary care teams. A methodology was created to score teams' relative performance against aggressive targets. Despite continued influx of new patients into the primary care panels in 2015 related to the Affordable Care Act, which had negatively impacted performance on this metric in 2014, the primary care teams achieved impressive improvement in this primary care bundle in 2015. Across the enterprise, performance significantly exceeded the established target which was sustained for the last seven months of the year.

Ambulatory Quality Scorecard Summary
Strategic Metrics | December 2015

		Cervical Cancer Screening 85 %	Dental Visit or Fluoride Application 75 %	Diabetes A1c <=9 77 %	First Trimester Entry into Prenatal Care 70 %	Hypertension BP Controlled 75 %	Persistent Asthma on Controller Meds 90 %	Strategic Bundle Score
CHS	Overall	79.0 % 31,207	86.3 % 772	71.5 % 8,467	70.6 % 3,588	68.3 % 19,233	95.0 % 1,767	71.6
Family Practice Division	Overall	79.9 % 12,728	84.9 % 279	71.4 % 3,251	71.1 % 1,310	66.4 % 7,062		68.0
General Internal Medicine Division	Overall	79.5 % 14,730	82.1 % 28	72.2 % 5,124	80.7 % 119	69.6 % 12,053		62.8
General Pediatric Division	Overall		87.7 % 463				95.5 % 1,450	100.0
School Health Division	Overall						92.7 % 317	100.0
Womens Care Division	Overall	73.9 % 3,738			69.7 % 2,157			66.7

CHS Overall Strategic Metric Bundle
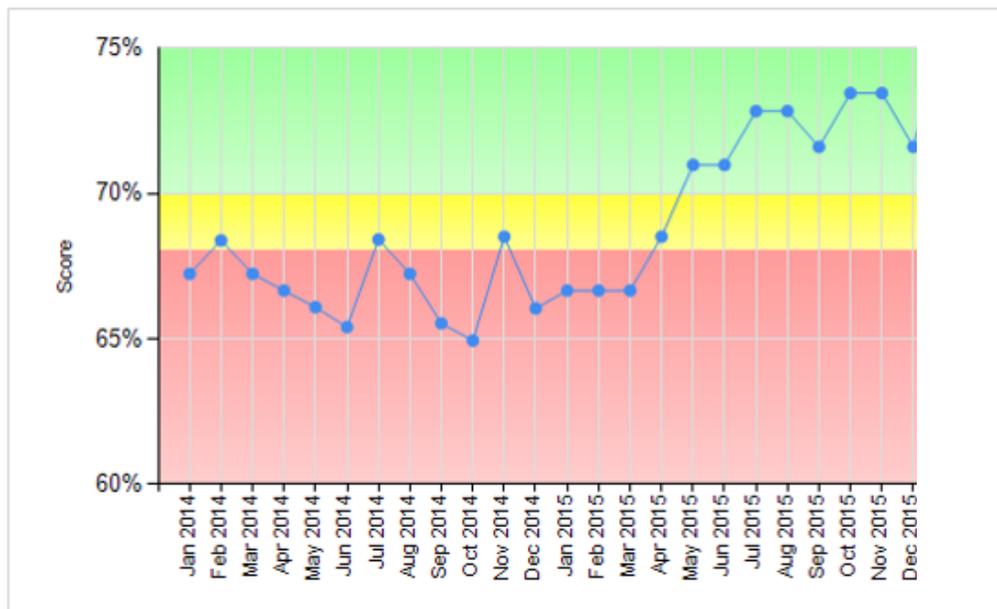
PATIENT SAFETY & QUALITY PILLAR METRICS

MEDICATION RECONCILIATION

Medication Reconciliation is a National Patient Safety Goal and improves continuity of care and safety for patients. Every hospitalized patient who is going home on medications is provided with a list of reconciled medications at discharge. The inpatient metric excludes patients who die, leave against medical advice, or are discharged from the newborn nursery. DHHA exceeded our goal of 90% consistently throughout the year. In the ambulatory environment, medication reconciliation is expected at every visit where medications are added, changed, or deleted. In 2015, significant process improvement efforts were implemented in both primary and specialty practices resulting in achievement of a very aggressive goal as shown below.

Monthly Discharge Medication Reconciliation

Performance by Discharge Nurse Station

2015
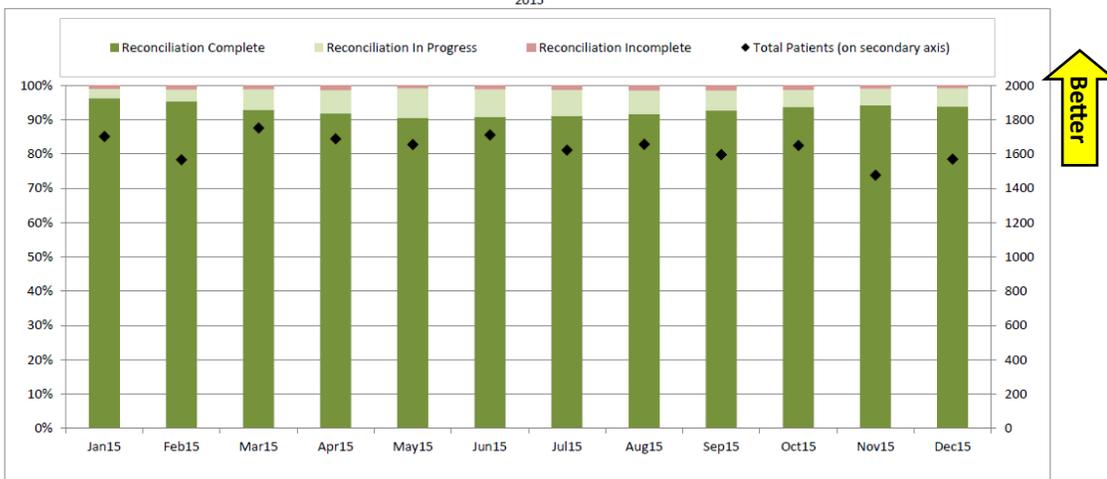
Current Methodology:

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.

Medication Reconciliation—Ambulatory Care Services

Discharge Medication Reconciliation

Percent, Adjusted and Weighted

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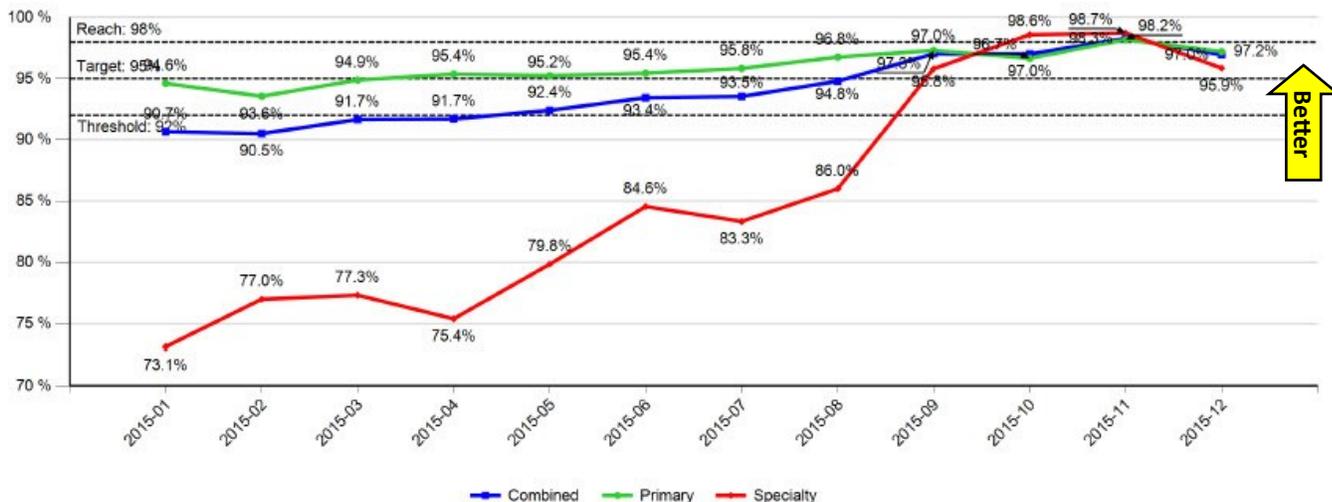
RECOGNITION

JOINT COMMISSION AWARD

DHHA was recognized as part of The Joint Commission's 2015 annual report "America's Hospitals: Improving Quality and Safety," for attaining and sustaining excellence in accountability measure performance for Heart Attack, Heart Failure, Pneumonia, Surgical Care, Immunization and Perinatal Care. The Top Performer program recognizes hospitals for improving performance on evidence-based interventions that increase the chances of healthy outcomes for patients with certain conditions. DHHA is one of only 1,043 hospitals out of more than 3,300 eligible hospitals in the United States to achieve the 2014 Top Performer distinction.
DHHA is proud to be named a Top Performer as it recognizes the knowledge, teamwork and dedication of our entire hospital staff.

DIABETES EDUCATOR OF THE YEAR

Tamara Swigert MSN, RN, CDE was awarded the Rocky Mountain Association of Diabetes Educators (RMADE) 2015 Diabetes Educator of the Year award. Tamara is a Diabetes Educator working in the Department of Patient Safety and Quality. This is particularly impressive given that Tammy is new to Colorado within the last 3 years. She teaches diabetes management classes for newly diagnosed patients, educates nursing and physician staff on state-of-the-art inpatient diabetes care, provides one-on-one care to complex ambulatory patients in the endocrinology clinic, and mentors aspiring diabetes educators at DHHA.

UHC AMBULATORY CARE QUALITY AND ACCOUNTABILITY PERFORMANCE

For the first time ever, UHC released a scorecard on ambulatory care. DHHA ranked #6 out of 46 academic medical centers on a variety of performance indicators across the ambulatory enterprise. This study and ranking provided a holistic view of ambulatory performance to enable institutions to deliver high-quality, accessible, and cost efficient care.

UHC ★★★★

2015 Ambulatory Care Quality and Accountability (AQA) Performance Scorecard

Denver Health

This document presents the measures evaluated in the 2015 UHC Ambulatory Care Quality and Accountability ranking. This scorecard provides a comparison of your organization's performance with that of other academic medical centers. The data were obtained from existing UHC data resources, including the Faculty Practice Solutions Center (Q2 2014 – Q1 2015), the Access Initiative (Q2 2014 – Q1 2015), Core Measures Data Base (Q2 2014 – Q4 2014), and the Operational Data Base (Q2 2014 – Q1 2015). Data from the most recent CMS Quality Resource Use Report (Mid-Year QRUR) was also used. The goal of the Ambulatory Care Quality and Accountability ranking is to assess organizational performance across a broad spectrum of high-priority dimensions using measures developed by UHC, national organizations or the federal government. The 2015 scoring and ranking cover the domains of access to care, quality and efficiency, equity, continuum of care and capacity management and throughput. Refer to the methodology white paper (available at www.uhc.edu) for specifics regarding the metrics, scoring, and data sources used.

Overall Composite Performance	Rank (*denotes ties)	Overall	Your Weighted Score	AQA Top Score	AQA Median Score
Overall (Based on Domain Performance)	6	61.4%	61.4%	65.0%	56.6%
Domain (Weight)	Rank (*denotes ties)	Your Score	Your Weighted Score	AQA Top Score	AQA Median Score
Access to Care (30%)	26*	55.3%	16.6%	20.0%	16.7%
Includes performance on new patient visits, new patient visit schedule lag and provider-initiated bump rates for various medical and surgical subspecialties.					
Continuum of Care (10%)	6*	63.8%	6.4%	7.4%	5.8%
Includes performance on Joint Commission Hospital Core Measures ED-1b and ED-OP-18b (median time); ED patients that are low acuity and ED frequent fliers.					
Quality & Efficiency (25%)	1	73.4%	18.4%	18.4%	14.1%
Includes select CMS Value-Based Payment Modifier Quality and Cost measures at the medical group-level and CT-scan utilization for specific ED patient populations.					
Capacity Management & Throughput (30%)	42	50.3%	15.1%	20.5%	16.6%
Includes encounters per physician per session and utilization of exisitng capacity for select medical and surgical subspecialties and high cost imaging throughput. Also includes an information-only metric on encounters per room per hour for select medical and surgical subspecialties.					
Equity (5%)	1*	100.0%	5.0%	5.0%	5.0%
Includes access to care measures on appointment schedule lag by payer class (Medicaid and Medicare) for select medical and surgical subspecialties and ED length of stay (ED-1b) by gender and race.					

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RECOGNITION

UHC SUPPLY CHAIN PERFORMANCE EXCELLENCE AWARD

For the eighth consecutive year, DHHA was awarded the UHC Supply Chain Performance Excellence Award for the #1 Public Safety Net Hospital. Numerous factors, including pricing, standardization, utilization, and operating practices, contribute to the variation in hospitals' performance in managing supply expenses. By providing high-quality care focused on patient safety, DHHA can achieve excellence in supply chain-related activities.

UHC 2015 Supply Chain Performance Excellence Scorecard

Denver Health (8)

This document is designed to help you identify your organization's strengths and opportunities for improvement at the overall hospital level as well as the 5 largest supply consuming functional areas. The time period for this information is 2Q14-1Q15 (April 2014 – March 2015). Information about the initiative and the methodology can be found on the Supply Chain Performance Excellence Scorecard (SCPES) informational page. If you have questions about your performance, contact your UHC Supply Chain Account Executive.

Key Performance Measures	Unit of Measure	% Weight	Relative Performance	Hospital Value	Best Quartile	UHC Median	Rank
Facility-Wide Supply Use							
Supply Expense(less drugs, less organs, less blood)/SIS2 Supply Adjusted Discharge	($/pt)	30	⊙	$1,156	$1,130	$1,265	16/46
Major Department Supply Use							
IP Drug Exp/Rx Intensity-Weighted Discharge	($/pt)	20	⊙⊙	$186	$326	$377	1/46
Cardiology Medical Supply Expense/Amb Pay Classifications	($/APC)	10	●	$53	$31	$34	46/46
Surgical Services Medical Supply Expense/Case	($/Case)	20	⊙	$1,693	$2,132	$2,422	6/46
Imaging Medical Supply Expense/Amb Pay Classifications	($/APC)	10	⊙⊙	$5.8	$7.3	$9.9	3/46
Laboratory Services (Clinical Operation) Medical Supply Expense/CMI-Weighted Lab Adj Disch	($/pt)	10	⊙	$62	$60	$77	15/45

Legend

⊙⊙ Substantially better than best quartile range   ◖ Worse than best quartile range   ⊗ Outlier

⊙ Within best quartile range   ● Substantially worse than best quartile range   ⊘ No data or incomplete data from your institution

Supply Expense(less drugs, less organs, less blood)/SIS2 Supply Adjusted Discharge

UHC 2015 Supply Chain Performance Excellence Rank: 1 for Safety Net

PUBLIC REPORTING & INCENTIVES

CMS HOSPITAL READMISSIONS REDUCTION PROGRAM—FFY2015 & FFY2016

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 starting in federal fiscal year (FFY) 2013. CMS utilizes claims data to determine readmissions within 30 days of discharge from the same or another inpatient hospital.

- Applicable Conditions — acute myocardial infarction (AMI), heart failure (HF), pneumonia (PN), acute exacerbation of chronic obstructive pulmonary disease (COPD), elective 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 one 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:
    - ◊ 3% maximum payment reduction.
    - ◊ Reduction applies to the Base Operating DRG payment amount (including wage-adjustment and new technology amounts) for discharges of Medicare FFS patients.
    - ◊ Actual reimbursement reduction for FFY 2015 discharges at DHHA (10/1/14—9/30/15) is 0.01% or -$3,200. Projected reimbursement reduction for FFY 2016 discharges at DHHA (10/1/15—9/30/16) is 0.03% or -$15,000.

30-Day Readmission Measures	AMI	HF	PN	COPD	THA/TKA	DHHA Payment Adjustment Factor
Federal Fiscal Year 2015 Performance period 07/01/10—06/30/13 Payment reduction applied to discharges 10/01/14—09/30/15						
Number of Eligible Discharges	32	78	36	58	27	—
Excess Readmission Ratio	0.9658	1.0071	0.9850	0.9464	0.9311	0.9999
Federal Fiscal Year 2016 Performance period 07/01/11—06/30/14 Payment reduction applied to discharges 10/01/15—09/30/16						
Number of Eligible Discharges	39	82	34	61	24	—
Excess Readmission Ratio	0.9532	1.0263	0.9748	0.9308	0.9928	0.9997

Better

0.01% reduction

0.03% reduction
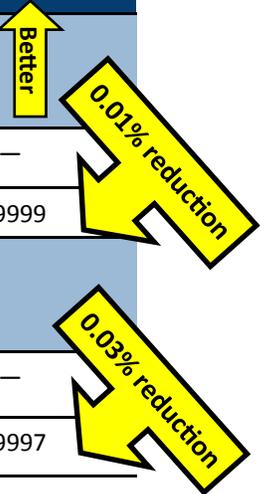
Next Steps:
- Educate the medical staff about discharge status documentation and the importance of indicating a planned readmission.
- Educate the coding staff to utilize the planned readmission discharge status options if applicable.
- Focus on heart failure patients since this is the only cohort with higher than expected readmission rates.

Future Impact:
- FY 2017: Additional cohort of coronary artery bypass graft (CABG) surgery. Expands the pneumonia cohort to include patients with a principal diagnosis of aspiration pneumonia and patients with a principal diagnosis of sepsis who also have a secondary diagnosis of pneumonia present on admission.

PUBLIC REPORTING & INCENTIVES

## CMS HOSPITAL-ACQUIRED CONDITIONS (HAC) REDUCTION PROGRAM— FFY2016

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 lowest-performing quartile with respect to risk-adjusted HAC quality measures will receive a payment reduction beginning in FFY 2015. CMS began publicly reporting hospital-specific results on Hospital Compare in December 2015.

- Patient Safety Domain — Agency for Healthcare Research and Quality (AHRQ) Patient Safety Indicator Composite measure (PSI 90) is a weighted average of the risk- and reliability-adjusted versions of eight PSIs. CMS is using version 4.5a of the AHRQ PSI software, and hospitals' Medicare FFS claims for 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 FFY 2016 if total HAC score above 75th percentile (i.e. 6.75 points)
  - ◊ 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
  - ◊ Projected reimbursement reduction for FFY 2016 (discharges 10/1/15—9/30/16) is -$375,000

	Result	Points
Patient Safety Domain (25% of score) Performance period 07/01/12—06/30/14		*0 is best*
AHRQ PSI 90 Composite	1.1193	10 of 10
Healthcare-Associated Infections Domain (75% of score) Performance period 01/01/13—12/31/14		
Central Line-Associated Bloodstream Infection (CLABSI) SIR	0.358	5 of 10
Catheter-Associated Urinary Tract Infection (CAUTI) SIR	1.006	6 of 10
Surgical Site Infection - colon and abdominal hysterectomy SIR	1.637	9 of 10
Total HAC Score		**7.50 of 10**

1% reduction
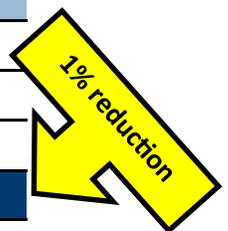
Next Steps:
- DHHA's Clinical Documentation Improvement (CDI) team reviews all PSI events to determine if the event was due to a coding error, inaccurate documentation, or true HAC. For efforts to reduce HAIs, see the Infection Prevention section of this report.

Future Impact:
- FFY 2017: expands to Methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia and *Clostridium difficile* infections
- FFY 2018: program further expands to include CAUTI/CLABSI in non-ICU units

PUBLIC REPORTING & INCENTIVES

CMS HOSPITAL VALUE-BASED PURCHASING (VBP) PROGRAM — FFY 2016

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.

- Financial Impact
    - ◊ 1.75% payment withholding with ability to earn back up to 3% based on performance.
    - ◊ Payment reduction applies to the Base Operating DRG payment amount for Medicare FFS discharges.
    - ◊ Projected net reimbursement reduction for DHHA for FFY 2016 (discharges 10/1/15—9/30/16) is -$175,000 (0.52%).

Clinical Process of Care Domain (10%) Data Source: CMS Core Measures		Baseline Rate (01/01/12-12/31/12)	Performance Rate (01/01/14-12/31/14)	Improvement Points	Achievement Points	Domain Score
SCIP-Inf-2	Prophylactic antibiotic selection for surgical patients	99.1%	97.8%	0	0	
SCIP-Inf-3	Prophylactic antibiotics discontinued within 24 hours after surgery end time	92.5%	99.1%	8	5	
SCIP-Inf-9	Urinary catheter removal on postoperative day 1 or postoperative day 2	95.9%	95.7%	0	0	
PN-6	Initial antibiotic selection for CAP in immunocompetent patient	83.3%	95.1%	7	0	60
AMI-7a	Fibrinolytic therapy received within 30 minutes of hospital arrival	—	—	—	—	
IMM-2	Influenza immunization	83.6%	95.7%	7	6	
SCIP-Card-2	Surgery patients on beta-blocker prior to arrival & receive perioperative	91.5%	100.0%	9	10	
SCIP-VTE-2	VTE prophylaxis within 24 hours prior to surgery to 24 hours after surgery	96.3%	100.0%	9	10	

Patient Experience of Care Domain (25%) Data Source: HCAHPS	Baseline Rate (01/01/12-12/31/12)	Performance Rate (01/01/14-12/31/14)	Improvement Points	Achievement Points	Domain Score
Communication with nurses	74.0%	73.1%	0	0	
Communication with doctors	77.7%	77.8%	0	0	
Responsiveness of hospital staff	58.7%	57.4%	0	0	
Pain management	64.6%	65.4%	0	0	15 (1 base point + 14 consistency points)
Communication about medicines	60.9%	63.1%	1	1	
Cleanliness and quietness of hospital environment	62.2%	63.8%	0	0	
Discharge information	84.9%	83.9%	0	0	
Overall rating of hospital	69.2%	68.7%	0	0	

Outcome Domain (40%) Data Sources: AHRQ, NHSN		Baseline Rate (MORT 10/1/10-6/30/11 AHRQ 10/15/10-6/30/11 NHSN 1/1/12-12/31/12)	Performance Rate (MORT 10/1/12-6/30/14 AHRQ 10/15/12-6/30/14 NHSN 1/1/14-12/31/14)	Improvement Points	Achievement Points	Domain Score
MORT-30-AMI	Acute Myocardial Infarction (AMI) 30-day mortality rate	0.847	0.866	—	—	
MORT-30-HF	Heart Failure (HF) 30-day mortality rate	0.884	0.889	—	4	
MORT-30-PN	Pneumonia (PN) 30-day mortality rate	0.888	0.895	—	—	
PSI-90	AHRQ complication/patient safety composite	0.711	0.580	5	2	20
CAUTI	Catheter-Associated Urinary Tract Infection	0.651	1.233	0	0	
CLABSI	Central Line-Associated Blood Stream Infection	0.212	0.440	0	1	
AbdHyst	Surgical Site Infection—Abdominal Hysterectomy	—	—	—	—	
Colon	Surgical Site Infection—Colon Surgery	1.510	1.665	0	0	

Efficiency and Cost Reduction Domain (25%) Data Source: CMS Claims		Baseline Rate 01/01/12-12/31/12	Performance Rate (01/01/14-12/31/14)	Improvement Points	Achievement Points	Domain Score
MSPB	Medicare spending per beneficiary	0.942	0.936	0	3	30

Future Impact:

- Up to 2.0% possible reduction beginning in FFY 2017.
- FFY 2017: Domains restructured & weights changed. Patient Experience & Efficiency weights unchanged.
    - Clinical Care Process (5%) — Keep AMI-7a and IMM-2. Add PC-01.
    - Clinical Care Outcomes (25%) — 30-day survival rate for AMI, HF, and PN
    - Safety (20%) — PSI-90, CAUTI, CLABSI, SSI (AbdHyst and colon). Added *Clostridium difficile* and MRSA bacteremia.
- FFY 2018: Process domain removed. PC-01 moved to Safety domain and weight increased to 25%.

0.52% Penalty

PUBLIC REPORTING & INCENTIVES

CMS PHYSICIAN QUALITY REPORTING SYSTEM (PQRS)—PY2015

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) in outpatient settings. 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
    - ◊ -2.0% payment reduction to services performed in calendar year (CY) 2017 for not successfully reporting PQRS measures in Program Year (PY) 2015 (i.e. 2017 PQRS Penalty).
    - ◊ Payment reductions apply to the total Part B PFS allowed charges for covered professional services.
    - ◊ Quality and cost performance for PY 2015 measures will determine the 2017 Value-Based Modifier Payment.
    - ◊ DHHA exceeded the mean national performance on all selected measures and hence avoided approximately $100,000 in payment reduction in CY 2017.

Measure Number	Measure Name	Eligible Cases	Performance Rate	National Rate (mean ± std dev)
Clinical Care				
39	Screening or therapy for osteoporosis for women aged 65 years and older	693	45.2%	44.3% ± 29.6%
112	Breast cancer screening	836	54.2%	—
113	Colorectal cancer screening	1,731	52.2%	47.5% ± 31.3%
Population Health				
110	Preventive Care and Screening: Influenza immunization	1,778	59.5%	47.8% ± 31.2%
111	Pneumonia Vaccination Status for Older Adults	1298	72.8%	50.2% ± 30.5%
Patient Safety				
145	Exposure time reported for procedures using fluoroscopy	229	83.4%	77.9% ± 25.0%
192	Complications within 30 days following cataract surgery requiring additional surgical procedures	52	0.0% (lower is better)	2.0% ± 10.2%
388	Cataract Surgery with Intra-Operative Complications (Unplanned Rupture of Posterior Capsule requiring unplanned vitrectomy)	113	0.0% (lower is better)	—
Communication and Care Coordination				
225	Radiology: Reminder System for Screening Mammograms	382	100%	88.3% ± 24.6%

Next Steps:
- Determine group practice reporting option (GPRO) method and metrics for PY 2016

Future Impact:
- PY 2016: no changes
- PY 2017: PQRS program ends. Its incentives and penalties will be consolidated into the Merit-Based Incentive Payment System (MIPS).

PUBLIC REPORTING & INCENTIVES

CMS VALUE-BASED PAYMENT MODIFIER AND QUALITY TIERING (VM) - PY2014

- 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.
- 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):
    ◊ -2% automatic payment reduction to services performed in CY 2016 if not participating in PQRS program in PY 2014 (i.e. 2016 Value Modifier Penalty).
    ◊ -2% to 3% payment adjustment in 2016 based on quality and cost performance if participate in optional quality tiering program in PY 2014 (i.e. 2016 Quality Tiering Adjustment).
    ◊ DHHA was in the most favorable cost/quality quadrant and yet was neither penalized nor rewarded for the Quality Tiering program.
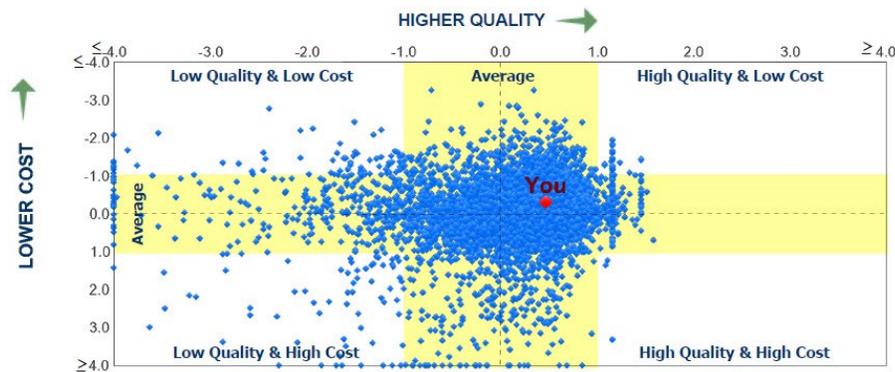
Quality Composite

Measure Name	Eligible Cases	Performance Rate	Target
Screening or Therapy for Osteoporosis	689	46.9%	65.2%
Pneumococcal Vaccination for Older Adults	1,198	71.7%	76.4%
Influenza Immunization	1,434	60.3%	68.6%
Colorectal Cancer Screening	1,654	49.8%	77.2%
Hepatitis C patients: Hepatitis A vaccination	61	78.7%	88.9%
Fluoroscopy exposure time reported	289	76.5%	100%
Cataract complications within 30 days of surgery requiring additional procedures	108	0.93%	0%
Mammogram reminder system	274	100.0%	100%

Cost Composite

Measure Name	Eligible Cases	Performance Rate	Target
Hospitalization rate per 1,000 beneficiaries			
Acute conditions	519	3.67	1.81
Chronic conditions	171	63.45	26.19
All-Cause Hospital Readmissions	56	14.33%	14.55%
Per Capita Costs			
All Attributed Beneficiaries	417	$8,209	$8,292
Beneficiaries with Diabetes	83	$12,751	$11,774
Beneficiaries with COPD	37	$15,838	$17,938
Beneficiaries with CAD	60	$16,954	$13,470
Beneficiaries with Heart Failure	34	$22,954	$20,044
Medicare Spending per Beneficiary	813	$19,582	$20,476

Future Impact:

- PY 2015: -4% reduction in CY2017 if not successfully reporting PQRS measures in PY 2015 (i.e. 2017 Value Modifier Penalty)
    -4% to 5% payment adjustment in CY2017 based on mandatory quality tiering in PY 2015 (i.e. 2017 Quality Tiering).
- PY 2016: No change in financial adjustments. Expands providers to include Nurse Practitioner, Physician Assistant, Certified Nurse Anesthetist, Nurse Specialist, and Certified Nurse Midwife.
- CMS sunsetted the VM program after PY 2016. Its incentives and penalties will be consolidated into the Merit-Based Incentive Payment System (MIPS).

PUBLIC REPORTING & INCENTIVES

CORE MEASURES OVERVIEW

CMS INPATIENT QUALITY REPORTING (IQR) PROGRAM

The Inpatient Prospective Payment System (IPPS) was established by the Social Security Act to pay for the operating costs of acute care hospital inpatient stays under Medicare Part A based on prospectively set rates. The Inpatient Quality Reporting (IQR) program provides financial incentives to hospitals to report the quality of their services. Hospitals that fail to report will face a 2 percentage point reduction in the annual market basket update. DHHA has always fully participated in the program.

In November 2015, DHHA was randomly selected by the CMS IQR Program for validation of chart-abstracted and healthcare-associated infection measures for the FFY 2018 payment determination. All clinical process measure sets except for perinatal care will be included. CLABSI and CAUTI events reported to NHSN will be validated along with SSI cases from Medicare claims data for patients who had colon surgeries or abdominal hysterectomies. A CMS contractor will validate 18 medical charts per quarter for third quarter 2015, fourth quarter 2015, first quarter 2016, and second quarter 2016. DHHA will use the validation scores and educational feedback for future performance improvement (PI) activity. Hospitals that fail validation will lose the annual market basket update.

Future Impact
- For the FFY 2018 payment determination, there are 47 required measures (9 chart-abstracted, 24 claims-based, 6 NHSN, 1 survey, 4 structural measures, 4 electronic).
- Beginning in CY 2016, hospitals must report a minimum of 4 of the available 28 electronic clinical quality measures (eCQMs) in order to satisfy the FFY 2018 IQR program.

CMS EHR INCENTIVE PROGRAM (a.k.a. MEANINGFUL USE)

The American Recovery and Reinvestment Act of 2009 established incentive payments to eligible hospitals (EHs) to promote the adoption and meaningful use (MU) of interoperable health information technology (HIT) and qualified electronic health records (EHRs). EHs must attest to a single set of objectives and measures plus submit a selection of nine eCQMs. Hospitals can participate in both the Medicare and Medicaid programs. In FFY 2015, DHHA received incentive payment of $865,000 from Medicare and $900,301 from Medicaid for participation in PY 2014. As of PY 2015, Medicaid incentive payments ended and Medicare penalties began. By participating in PY 2015, DHHA estimates a Medicare incentive payment of $603,000 in FFY 2016 and avoidance of a Medicare penalty of $359,000 in FFY 2017.

Future Impact
- PY 2017: Medicare incentives end. CMS planning to retire many eCQMs.

The Joint Commission's ORYX initiative integrates outcomes and other performance measures into the accreditation process. Hospitals have flexibility in meeting the ORYX requirements by selecting their six measure sets and their reporting mechanism (chart-abstracted, electronic, or a combination). In 2015, DHHA selected the chart-abstraction option due to constraints with our electronic medical record. The measure sets chosen were Stroke, Venous Thromboembolism, Immunization, Perinatal Care, Emergency Department, and Hospital Outpatient. Hospitals that fail to participate will lose their accreditation.

Future Impact
- CY 2016: Change reporting mechanism and measure sets because we will be implementing a new electronic health record.

PUBLIC REPORTING & INCENTIVES

CORE MEASURES—HOSPITAL INPATIENT
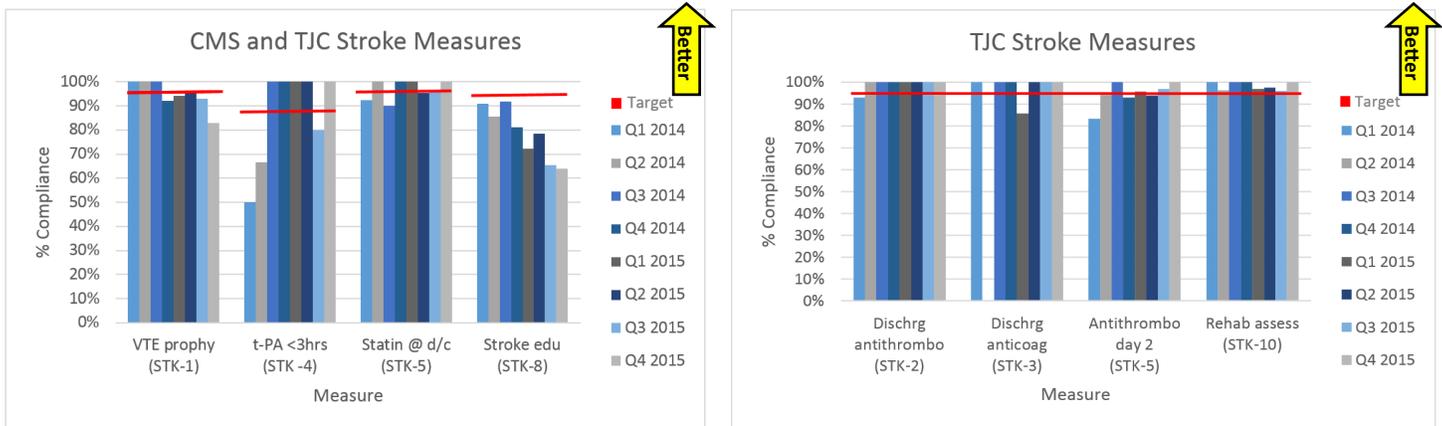
Stroke Measures (STK)

- 2015 Overall Results
  - ◊ 92% of 149 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)
  - ◊ 93% of 15 acute ischemic stroke patients who arrived at the hospital within 2 hours of last known well time received intravenous t-PA within 3 hours of last known well time (STK-4)
  - ◊ 98% of 90 ischemic stroke patients were discharged on statin medication (STK-6)
  - ◊ 71% of 89 ischemic or hemorrhagic stroke patients were given educational materials at discharge addressing required stroke education elements (STK-8)
  - ◊ 100% of 129 ischemic stroke patients were discharged on antithrombotic therapy (STK-2)
  - ◊ 95% of 19 ischemic stroke patients with atrial fibrillation/flutter were prescribed anticoagulation therapy at hospital discharge (STK-3)
  - ◊ 96% of 103 ischemic stroke patients received antithrombotic therapy by the end of hospital day 2 (STK-5)
  - ◊ 97% of 146 ischemic or hemorrhagic stroke patients were assessed for rehabilitation services (STK-10)
- PI Activity
  - ◊ The greatest area for opportunity is in the provision of educational materials at discharge. This should be enhanced by the deployment of our new electronic health record in 2016.
  - ◊ Clinical Documentation Improvement (CDI) team performed secondary review of cases with potential coding queries.
  - ◊ Case level communication with care team
- Future Impact
  - ◊ CMS and The Joint Commission are retiring all chart-abstracted stroke measures except STK-4 effective Q1 2016
  - ◊ CY 2016 CMS IQR program (manual): STK-4 is only required chart-abstracted measure
  - ◊ CY 2016 CMS IQR program (electronic): DHHA selected STK-4 and STK-6 as eCQMs
  - ◊ CY 2016 CMS MU EH: DHHA chose to report as eCQMs STK-2, STK-3, STK-5, STK-6, STK-8, and STK-10
  - ◊ CY 2016 The Joint Commission: DHHA selected chart-abstraction for the Stroke measure set (STK-4)

PUBLIC REPORTING & INCENTIVES

CORE MEASURES—HOSPITAL INPATIENT
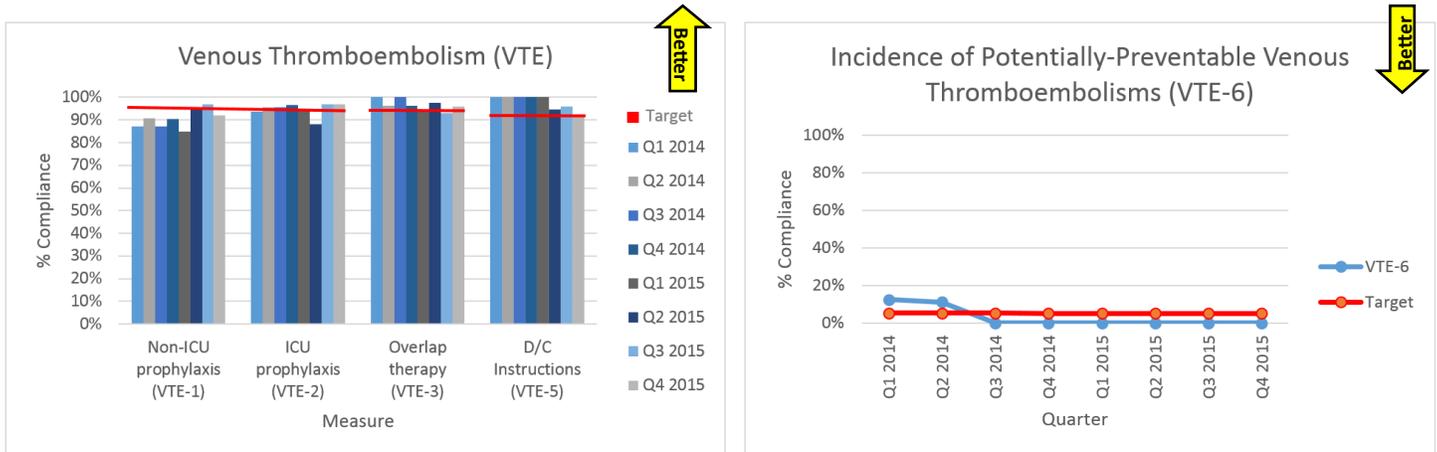
Venous Thromboembolism (VTE)

- 2015 Overall Results
    - ◊ 92% of 341 patients received VTE prophylaxis by end of hospital day 2 (VTE-1)
    - ◊ 95% of 136 ICU patients received VTE prophylaxis within one day of ICU admission (VTE-2)
    - ◊ 95% of 130 VTE patients received an overlap of parenteral anticoagulation and warfarin therapy (VTE-3)
    - ◊ 96% of 113 VTE patients on warfarin received written discharge instructions with warfarin education (VTE-5)
    - ◊ 0% of 40 patients not receiving VTE prophylaxis developed a VTE during hospitalization (VTE-6)
- PI Activity
    - ◊ Provider education focused on patients admitted to the inpatient short-stay unit (with emphasis on patients admitted for urgent dialysis) and to the Electrodiagnostic Unit (EDU)
- Future Impact
    - ◊ CMS is retiring VTE-1, VTE-2, and VTE-3 effective Q1 2016
    - ◊ CY 2016 CMS IQR program (manual): VTE-5 and VTE-6 are required chart-abstracted measures
    - ◊ CY 2016 CMS MU EH: DHHA chose to report as eCQMs VTE-3 and VTE-5
    - ◊ CY 2016 The Joint Commission: DHHA selected chart-abstraction for the VTE measure set (VTE-5 and VTE-6)

Influenza Immunization (IMM-2)

- 96% of 506 patients received their influenza immunization in 2015
- PI Activities are described in the Infection Prevention section of this report
- Future Impact
    - ◊ CY 2016 CMS IQR program (manual): IMM-2 is required chart-abstracted measure.
    - ◊ CY 2016 The Joint Commission: DHHA selected chart-abstraction for IMM-2
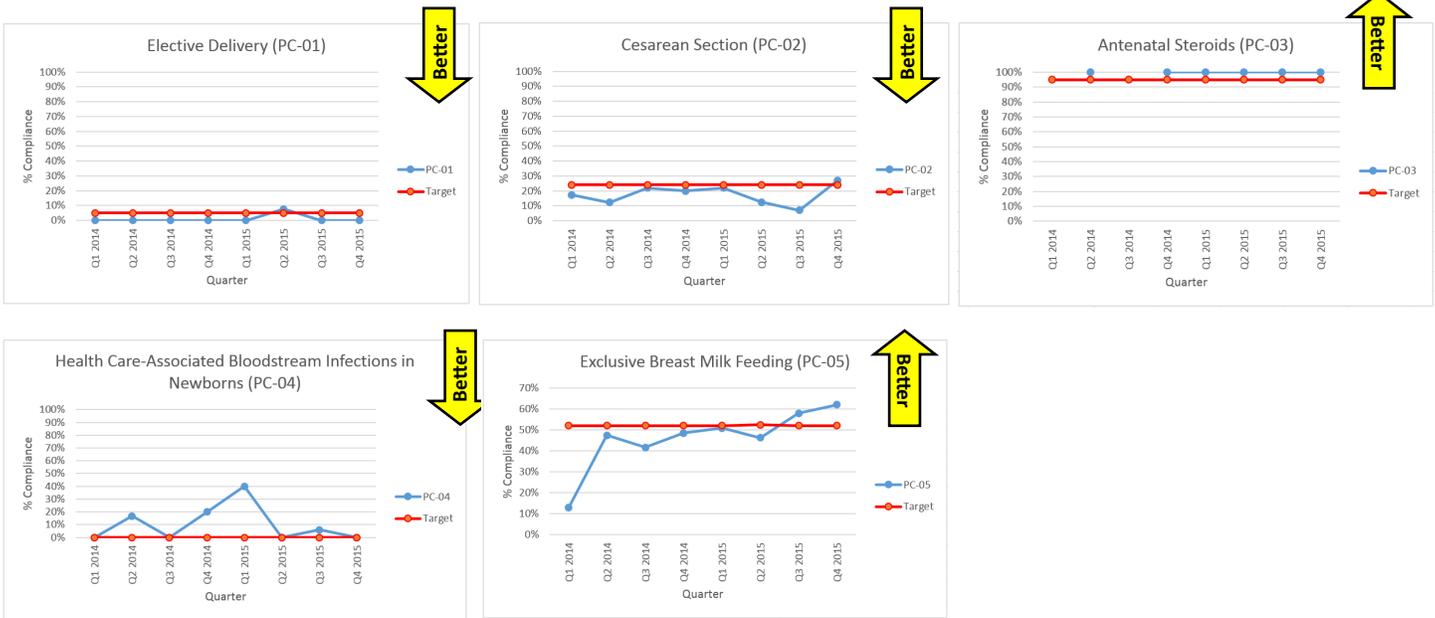
PUBLIC REPORTING & INCENTIVES

CORE MEASURES—HOSPITAL INPATIENT

Severe Sepsis and Septic Shock (SEP)

- Early Management Bundle for Severe Sepsis and Septic Shock (SEP-1) began on October 1, 2015
- Quarter 4 2015 Results
    - ◊ 38% of 26 patients passed all applicable measures in the early management bundle
    - ◊ 78% of 18 were identified with sepsis in the ED
    - ◊ 6% of 18 of the failed cases were the result of missing the initial lactate measure in the time window
    - ◊ 22% of 18 of the failed cases were the result of antibiotic administered later than the time window
    - ◊ 12% of 18 of the failed cases were the result of blood cultures drawn outside the time window
    - ◊ 12% of 18 of the failed cases were the result of antibiotics being administered before blood cultures were obtained
    - ◊ 18% of 18 of the failed cases were the result of remeasure lactate drawn outside the time window if initial lactate was greater than 2.0 mmol/dL
    - ◊ 12% of 18 of the failed cases were the result of no 30 cc/kg of fluid given to patient within time window
    - ◊ 22% of 18 of the failed cases were the result of missing elements in physicians reassessment of volume status
- PI Activity
    - ◊ Failed cases were discussed with the care team and sepsis physician champion
    - ◊ Created a sticker to document all elements for physician reassessment of volume status after fluid bolus
    - ◊ Educated ED physicians to complete this sticker when it is placed on the back of flowsheets
    - ◊ Educated MICU residents and interns on documenting the required sepsis elements in their History and Physical (H&P) assessments since the majority of the H&Ps are written within 360 minutes of ED triage time
    - ◊ Educated MICU residents and interns on documenting in progress notes if new undiagnosed sepsis is detected
    - ◊ Implemented a real-time screening instrument in the ED to identify patients whom meet severe sepsis or septic shock criteria based off the Surviving Sepsis Campaign inclusion criteria
    - ◊ Collaborated with Epic team to develop best practice alerts for detection of severe sepsis and septic shock as well as guidance for physicians in documenting key elements required by CMS
- Future Impact
    - ◊ CMS will continue to monitor SEP-1 without penalty until 2017

PUBLIC REPORTING & INCENTIVES

CORE MEASURES—HOSPITAL INPATIENT

Elective Delivery (PC-01)

Cesarean Section (PC-02)

Antenatal Steroids (PC-03)

Health Care-Associated Bloodstream Infections in Newborns (PC-04)

Exclusive Breast Milk Feeding (PC-05)

Perinatal Care Conditions (PC)

- 2015 Overall Results
    - ◊ 1.7% of 59 pregnant women with elective delivery between 37 and 39 weeks gestation (PC-01)
    - ◊ 17% of 167 nulliparous women with a term baby in a vertex position were delivered by cesarean section (PC-02)
    - ◊ 100% of 8 pregnant women at risk of preterm delivery at 24-32 weeks gestation received antenatal steroids prior to delivering the preterm newborn (PC-03)
    - ◊ 5.7% of 53 high risk newborns diagnosed with septicemia or bacteremia (PC-04)
    - ◊ 54% of 426 newborns were fed breast milk only since birth (PC-05)
- PI Activity
    - ◊ CDI team performed secondary review on all failed cases
    - ◊ PSQ and CDI continued to develop 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.
    - ◊ PSQ provided data for the process to obtain certification as a Baby Friendly hospital.
- Future Impact
    - ◊ CY 2016 CMS IQR program (manual): PC-01 is the only required chart-abstracted measure
    - ◊ CY 2016 CMS IQR program (electronic): DHHA selected PC-05 as eCQM
    - ◊ CY 2016 The Joint Commission: DHHA required to submit Perinatal Care measure set because there are >300 live births each year (PC-01, PC-02, PC-03, PC-04, PC-05). Chart-abstraction method will be used.

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PUBLIC REPORTING & INCENTIVES

CORE MEASURES—HOSPITAL OUTPATIENT

CMS
CENTERS FOR MEDICARE & MEDICAID SERVICES

CMS HOSPITAL OUTPATIENT QUALITY REPORTING (OQR) PROGRAM

The Outpatient Prospective Payment System (OPPS) pays for services furnished to Medicare beneficiaries in hospital outpatient departments and ambulatory surgery centers. Hospitals that fail to meet the outpatient quality reporting (OQR) requirements receive a 2 percentage point reduction in payments. There are 23 measures (9 chart-abstracted, 8 web-based, 6 claims-based).

In November 2015, DHHA was randomly selected by the CMS OQR Program for validation of the CY 2017 annual payment update determination. A CMS contractor will validate 12 medical charts per quarter for the second, third, and fourth quarters of 2015. The validation will cover three chart-abstracted measures (OP-18, OP-20, and OP-21). DHHA will use the validation scores and educational feedback for future PI activity. Hospitals that fail validation will lose the annual market basket update.

Future Impact
- CY 2016 program: two new measures
     - OP-32   Facility 7-Day Risk Standardized Hospital Visit Rate After Outpatient Colonoscopy (claims-based)
     - OP-33   External Beam Radiotherapy for Bone Metastases (web-based)
- CY 2017 payment determination: reducing timeframe for payment determination to only 3 quarters of data
- CY 2018 payment determination: returning to four quarters of data for payment determination

CMS EHR INCENTIVE PROGRAM (a.k.a. MEANINGFUL USE)

The American Recovery and Reinvestment Act of 2009 established incentive payments to eligible professionals (EPs) to promote the adoption and meaningful use of interoperable HIT and qualified EHRs. EPs must attest to a single set of objectives and measures plus submit a selection of six eCQMs. EPs must select either the Medicare or Medicaid program (depending on their patient population). DHHA has only been able to show "adoption, implementation and upgrade" (AIU) of our EHR technology. Incentives for AIU are provided solely by Medicaid. For FFY 2015, DHHA received a hardship exemption from Medicare and AIU incentive payments of $2,231,250 from Medicaid for participation in PY 2014. DHHA again requested a hardship exemption from Medicare for PY 2015. By participating in PY 2015, DHHA estimates a Medicaid AIU incentive payment of $1,593,750 in FFY 2016.

Future Impact
- PY 2016: DHHA can attain meaningful user status and receive attestation payments of $3,400,000.
- PY 2017: CMS is consolidating MU EP, PQRS and VM into MIPS.

The Joint Commission

The Joint Commission's ORYX initiative integrates outcomes and other performance measures into the accreditation process. Hospitals have flexibility in meeting the ORYX requirements by selecting their six measure sets and their reporting mechanism (chart-abstracted, electronic, or a combination). In 2015, DHHA selected the chart-abstraction option for the ORYX Hospital Outpatient measure set, composed of 11 Emergency Department and Ambulatory Surgery measures. Hospitals that fail to participate will lose their accreditation.

Future Impact
- CY 2016: Change reporting mechanism and measure sets because we will be implementing a new EHR.

PUBLIC REPORTING & INCENTIVES

CORE MEASURES—HOSPITAL OUTPATIENT

Chart-Abstracted Measures

In 2015, DHHA had zero cases for the AMI measures (OP-1, OP-2, OP-3), 1 case for the chest pain measures (OP-4, OP-5), and zero cases for the stroke measure (OP-23). The three outpatient Emergency Department (ED) measures will be discussed with the two inpatient ED measures.

Web-Based Measures

These measures are submitted annually. CMS does not provide benchmarks for these measures.

ID	Measure	DH 2014	DH 2015
OP-12	Electronically Receive Laboratory Data Directly into EHR System as Discrete Searchable Data	No	Yes
OP-17	Ability to Track Clinical Results Between Visits	No	Yes
OP-22	ED-Patient Left Without Being Seen	3.9%	2.6%
OP-25	Safe Surgery Checklist Use	Yes	Yes
OP-26	Hospital Outpatient Volume Data on Selected Outpatient Surgical Procedures		
	Cardiovascular	488	556
	Eye	1476	1543
	Gastrointestinal	2252	4347
	Genitourinary	560	876
	Musculoskeletal	2535	2828
	Nervous System	1038	708
	Other	45	88
	Respiratory	642	728
	Skin	3161	2721
OP-27	Influenza Vaccination Coverage Among Healthcare Personnel	98%	98%
OP-29	Appropriate Follow-up Interval for Normal Colonoscopy in Average Risk Patients	100%	98.5%
OP-30	Colonoscopy Interval for Patients with History of Adenomatous Polyps	100%	100%

Claims-Based Measures

These measures are based on paid Medicare FFS claims. Results reported for 2015 are based on claims from Quarter 4 2013 through Quarter 3 2014.

ID	Measure	DHHA	National
OP-8	Outpatients with low-back pain who had an MRI without trying recommended treatments first	60.8%	39.9%
OP-9	Outpatients with a follow-up mammogram, ultrasound, or breast MRI within the 45 days following a screening mammogram	10.4%	8.9%
OP-10	Abdomen CT scans that were combination scans, i.e. with and without contrast	0.0%	9.4%
OP-11	Thorax CT scans that were combination scans, i.e. with and without contrast	6.1%	2.4%
OP-13	Outpatients who got cardiac imaging stress tests before low-risk outpatient surgery	2.7%	5.0%
OP-14	Outpatients with simultaneous brain and sinus CT scans	0.9%	2.8%

PUBLIC REPORTING & INCENTIVES

CORE MEASURES—EMERGENCY DEPARTMENT

CMS does not have a separate payment system or quality reporting program for Emergency Department (ED) encounters. Instead, these visits are incorporated into either the IQR and OQR program depending on a patient's final discharge disposition. Patients who are discharged home from the ED are considered outpatients whereas patients who are admitted are considered inpatients.
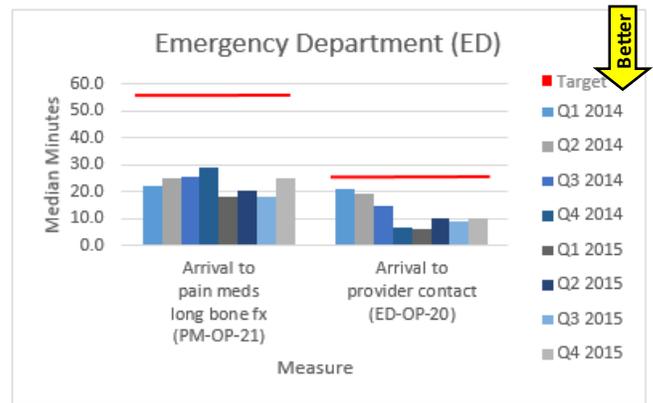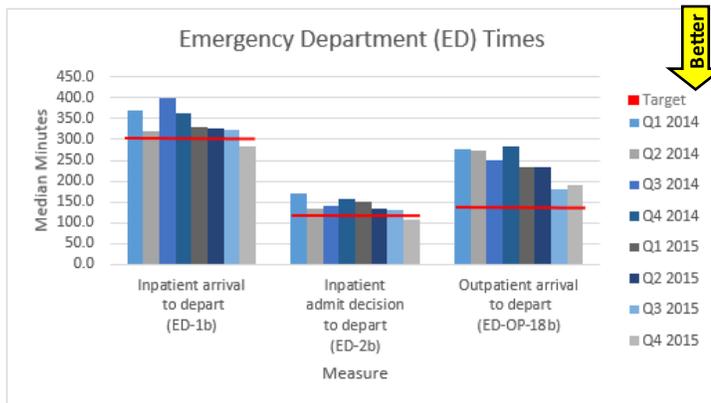
- 2015 Overall Results

ID	Measure	Cases	Median Time (minutes)
ED-1b	ED arrival to ED departure for patients admitted to the hospital	595	325
ED-2b	Admit decision to ED departure for patients admitted to the hospital	589	129
ED-OP-18b	ED arrival to ED departure for patients discharged from the ED	311	208
ED-OP-20	ED arrival to diagnostic evaluation by a qualified medical professional	351	10.5
ED-OP-21	ED arrival to pain management for ED patients with long bone fracture	242	18.5

- PI Activity
  - ◊ Provider education focused on patients admitted to the inpatient short-stay unit (with emphasis on patients admitted for urgent dialysis) and to the Electrodiagnostic Unit (EDU)
- Future Impact
  - ◊ CY 2016 CMS IQR program (manual): ED-1 and ED-2 are required chart-abstracted measures
  - ◊ CY 2016 CMS IQR program (electronic): DHHA selected ED-1 and ED-2 as eCQMs
  - ◊ CY 2016 CMS OQR program (manual): ED-OP-18, ED-OP-20, ED-OP-21 are required chart-abstracted measures
  - ◊ CY 2016 CMS MU EH: DHHA chose to report ED-OP-18 as an eCQM
  - ◊ CY 2016 The Joint Commission: DHHA selected both chart-abstraction and eCQM for ED-1 and ED-2

PUBLIC REPORTING & INCENTIVES

CMS INPATIENT PSYCHIATRIC FACILITY QUALITY REPORTING (IPFQR) PROGRAM CORE MEASURES– BEHAVIORAL HEALTH

The Inpatient Psychiatric Facilities Prospective Payment System (IPF PPS) pays for services furnished to Medicare beneficiaries in inpatient psychiatric facilities. The Inpatient Psychiatric Facility Quality Reporting (IPFQR) program provides a financial incentive to hospitals to report the quality of their services. IPFs collect aggregate data by quarter and submit to CMS annually. IPFs that do not participate or meet reporting requirements receive a 2.0 percentage point reduction of their annual payment update. There are 14 measures for the FFY 2017 payment determination.
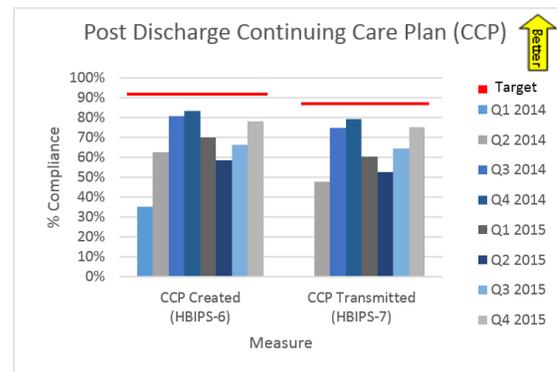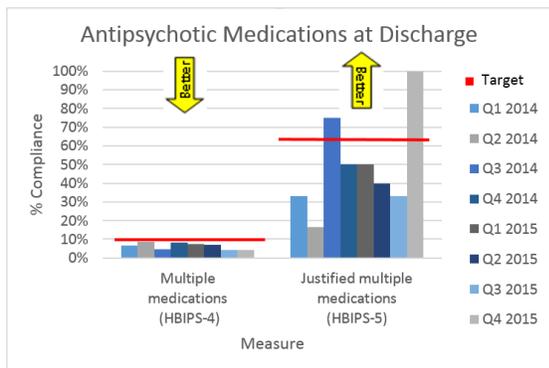
Hospital-Based Inpatient Psychiatric Services (HBIPS)

- 2015 Overall Results
  - ◊ 5.5% of 271 patients were discharged on multiple antipsychotic medications (HBIPS-4)
  - ◊ 54% of 15 patients discharged on multiple antipsychotic medications had appropriate justification (HBIPS-5)
  - ◊ 69% of 535 patients were discharged with a continuing care plan (HBIPS-6)
  - ◊ 63% of 535 patients had the post discharge continuing care plan transmitted to the next level of care (HBIPS-7)
- PI Activity
  - ◊ Met with providers and clinical social work staff to review performance rates and provide education on new CY 2016 measures.
- Future Impact
  - ◊ CY 2016: CMS removed HBIPS-4 and incorporated the data element into HBIPS-5. CMS removed HBIPS-6 and HBIPS-7 and created two new measures with similar elements (Transition Record Reviewed by Discharged Patients and Timely Transmission of Transition Record).

PUBLIC REPORTING & INCENTIVES

CORE MEASURES—BEHAVIORAL HEALTH
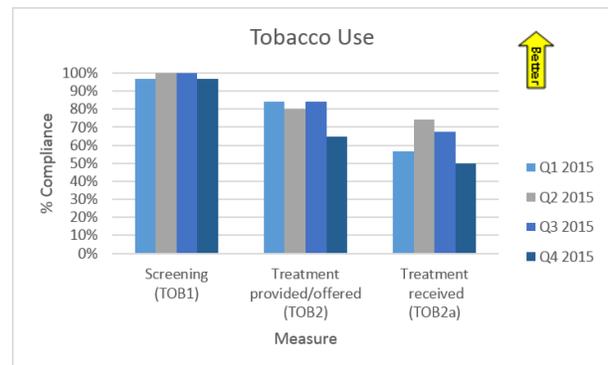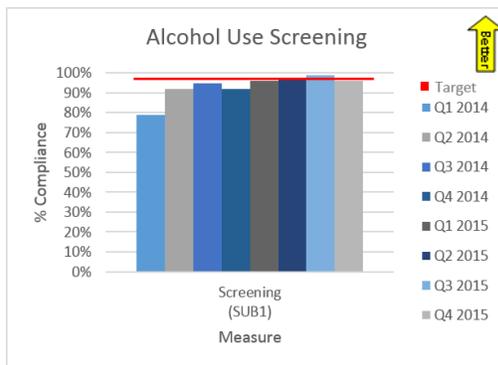
Alcohol and Tobacco Use

- 2015 Overall Results
    - ◊ 96.7% (295 of 305) psychiatric inpatients were screened for alcohol use within the first three days after admission (SUB-1)
    - ◊ 98.6% (288 of 292) psychiatric inpatients were screened for tobacco use (TOB-1)
    - ◊ 78.3% (112 of 143) psychiatric inpatients who used tobacco were provided or offered treatment (TOB-2)
    - ◊ 62.2% (89 of 143) psychiatric inpatients who used tobacco received tobacco use treatment (TOB-2a)
- PI Activity
    - ◊ Worked with nurse manager on Adult Behavioral Health to develop process of providing and documenting intervention as required to meet new substance use and tobacco use measures for CY 2016.
- Future Impact
    - ◊ CY 2016: CMS added three new measures
        Alcohol use brief intervention provided or offered / Alcohol use brief intervention received (SUB-2/SUB-2a)
        Tobacco use treatment offered at discharge / Tobacco use treatment received at discharge (TOB-3/TOB-3a)
        Screening for metabolic disorders

Claims-Based and Web-Based Measures

Submission	Measure	DH 2014	DH 2015
Web-based	Assessment of Patient Experience of Care	No	No
Web-based	Use of an Electronic Health Record and Exchange of Interoperable Health Information with a Health Information Service Provider	No	No
Web-based	Influenza Immunization (IPF-IMM-2)**	n/a	84.6%
NHSN	Influenza Vaccination Coverage Among Healthcare Personnel**	98%	98%

* Begins with Quarter 3 2014 discharges
** Begins with Quarter 4 2015 discharges

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 2015, HCPF added measures related to opiate prescribing practices in the emergency department and patient satisfaction. The venous thromboembolism measure was moved to maintenance status which indicates high statewide compliance so HCPF only monitors its status. DHHA received the third highest incentive payment in Colorado.

Measure Name	Model Year 2014-2015			Model Year 2015-2016		
	Rate/Result	Time Period	Points	Rate/Result	Time Period	Points
Emergency Department Processes: 1. List of PCPs provided if don't have a PCP 2. Info provided about nurse advice lines 3. ED visit communicated to RCCO within 24 hours 4. Policy to not replace lost, destroyed, or stolen opiate prescriptions 5. Policy that long-acting opiates are not prescribed	Intervention #1: Yes Intervention #2: Yes Intervention #3: Yes	CY 2014	6 of 6	Intervention #1: Yes Intervention #2: Yes Intervention #3: Yes Intervention #4: Yes Intervention #5: Yes	CY 2015	10 of 10
Elective Delivery between 37 and 39 weeks gestation (PC-01)	0.34%	CY 2013	10 of 10	0.00%	CY 2014	10 of 10
Caesarean Sections (PC-02)	19.11%	CY 2013	5 of 10	18.00%	CY 2014	10 of 10
30-Day All Cause Readmissions (Medicaid only)	11.83%	July 1, 2012 – June 30, 2013	3 of 10	16.00%	CY 2014	0 of 10
Patient Satisfaction—HCAHPS Hospital rating of 9 of 10	NA	NA	NA	69.00%	As of July 22, 2015	0 of 10
INCENTIVE PAYMENT	**$4,067,042**		**24 of 46**	**$5,857,931**		**30 of 50**

- Future Impact (Model Year 2016-2017)
  - ◊ Removal of Elective Delivery measure
  - ◊ Added Culture of Safety measure set. Need 3 of 4 initiatives in place as of April 2016:
    - a) Patient and Family Advisory Council in place
    - b) Patient Safety and Hospital Leadership — weekly leadership safety rounds or daily leadership safety huddle
    - c) Patient Safety Culture Survey conducted in last 24 months with resulting analysis and activities
    - d) Daily Unit Safety Briefings/Huddles

PUBLIC REPORTING & INCENTIVES

LEAPFROG

THE**LEAPFROG**GROUP

HOSPITAL SAFETY SCORE®	Fall 2012	Spring 2013	Fall 2013	Spring 2014	Fall 2014	Spring 2015	Fall 2015
Denver Health	A	A	A	B	B	B	C

The Leapfrog Group releases Hospital Safety Scores two times per year, giving more than 2,500 hospitals nationwide 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.

While it is tempting to question the validity of some of the measures which rely on billing data from as far back as 2011, we have to own those domains which require our ongoing attention. Our performance on many of the measures used is excellent including rates of retained foreign bodies, MRSA infections, *C. difficile* infections, pressure ulcers, and collapsed lungs. However, we have identified opportunities for improvement in several specific areas including colon surgery infections, central line infections, falls, and urinary tract infections—all of which are part of our Target Zero harm reduction measure. In some of these categories, we have seen improvement since the measurement period for this score.

CONSUMER REPORTS

Consumer Reports®

Consumer Reports created a Safety Score to grade hospitals based on publicly available data. Safety metric categories include Patient Outcomes, Patient Experience, Hospital Practices, and Heart Surgery. DHHA's 2015 score was a 54.

Denver Health 2015
Safety Score — **54**
ℹ What's this?
US Top Rated — 77
This hospital — 54
Lowest — 20
0 ———————————————→ 100

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT (CDPHE)

CDPHE **COLORADO** Department of Public Health & Environment

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). Improvement efforts are described in the Infection Control section.

Denver Health Healthcare-Associated Infections

Procedure	August 2013—July 2014				August 2014—July 2015			
	# Procedures	# Infections	SIR	Nat'l Comparison	# Procedures	# Infections	SIR	Nat'l Comparison
Breast Surgery	144	3	1.1	Same	143	1	0.4	Same
Colon Surgery	122	14	1.6	Same	87	13	2.2	Worse
Hip Replacement	90	0	0	Same	142	7	2.5	Worse
Knee Replacement	173	1	0.5	Same	159	1	0.6	Same
Abdominal Hysterectomy	78	4	2.2	Same	76	2	1	Same

Source: CDPHE Healthcare Associated Infections in Colorado January 2016 report

DENVER HEALTH
Level One Care for ALL

PUBLIC REPORTING & INCENTIVES

c|h|a
Colorado Hospital Association

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.

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 (2014)								
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	197	5	2.54%	1.64%	0.12%	3.16%	2.55%
Heart Attach (AMI)	Average	178	11	6.18%	5.20%	2.44%	7.96%	6.34%
Heart Bypass (CABG)	Too few cases	1	0	0.00%	0.00%	0.00%	100.00%	5.38%
Heart Failure (CHF)	Average	374	7	1.87%	1.81%	0.15%	3.48%	2.57%
Hip Fracture	Average	60	3	5.00%	6.51%	2.14%	10.89%	3.86%
Hip Replacement	Average	61	0	0.00%	0.00%	0.00%	1.50%	0.14%
Pneumonia	Average	132	0	0.00%	0.00%	0.00%	2.69%	2.62%
Stroke	Average	131	16	12.21%	8.98%	5.72%	12.25%	8.82%

Denver Health Patient Safety Measures (2014)								
Condition	Rating	Cases	Complications	Observed	Risk Adjusted	Low Bound Confidence Interval	High Bound Confidence Interval	Statewide Risk Adjusted
Bloodstream Infection (Sepsis)	Average	260	4	1538	1553	371	2735	949
Post Surgical Blood Clot (DVT) / Lung Artery Clot (PE)	Average	3039	26	856	637	421	853	480
Pressure Ulcer (Decubitus Ulcer)	Average	4343	1	23	22	0	87	53

DENVER HEALTH
Level One Care for ALL

NATIONAL COLLABORATIVES
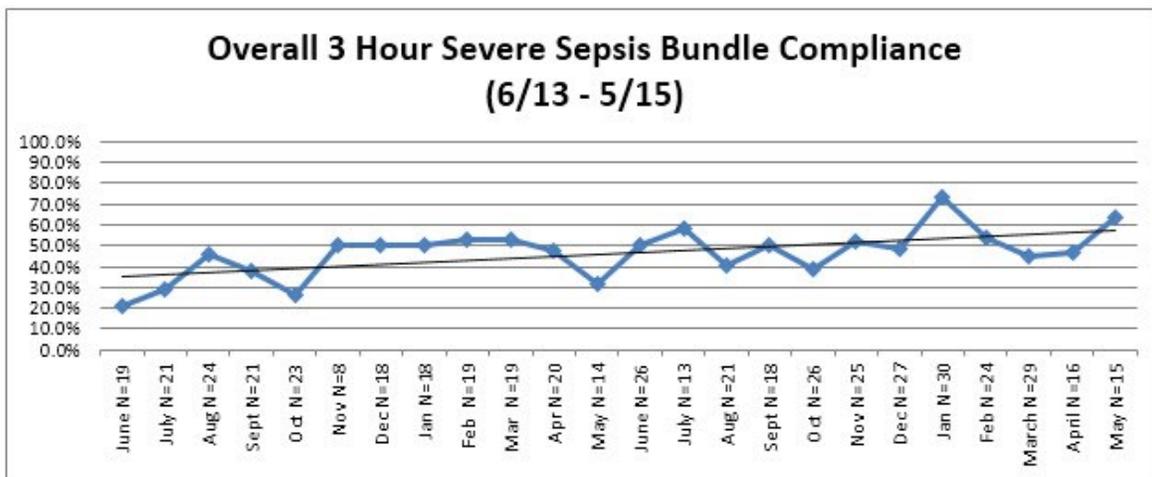
HVH
HIGH VALUE
HEALTHCARE
COLLABORATIVE

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.

SEPSIS PROJECT

- The HVHC Sepsis Project led by Dr. Ivor Douglas started in 2013 and ended in June 2015.
- Slight improvements in compliance with each element of the 3 Hour Bundle
    - ◊ Blood cultures drawn before antibiotics and within 180 minutes of ED arrival
    - ◊ Antibiotic administration within 180 minutes of ED arrival
    - ◊ Fluid resuscitation (30 cc/kg) within 180 minutes of ED arrival
- Overall increase in 3 Hour Bundle compliance over the two years
- CMS required the sepsis core measure (SEP-1) starting on October 1, 2015
- In Quarter 4 2015, 64.7% of the cases received treatment appropriately but only 23.5% passed the CMS measure

3 Hour Bundle Element Compliance (6/13 - 5/15)

Overall 3 Hour Severe Sepsis Bundle Compliance (6/13 - 5/15)

DENVER HEALTH
Level One Care for ALL
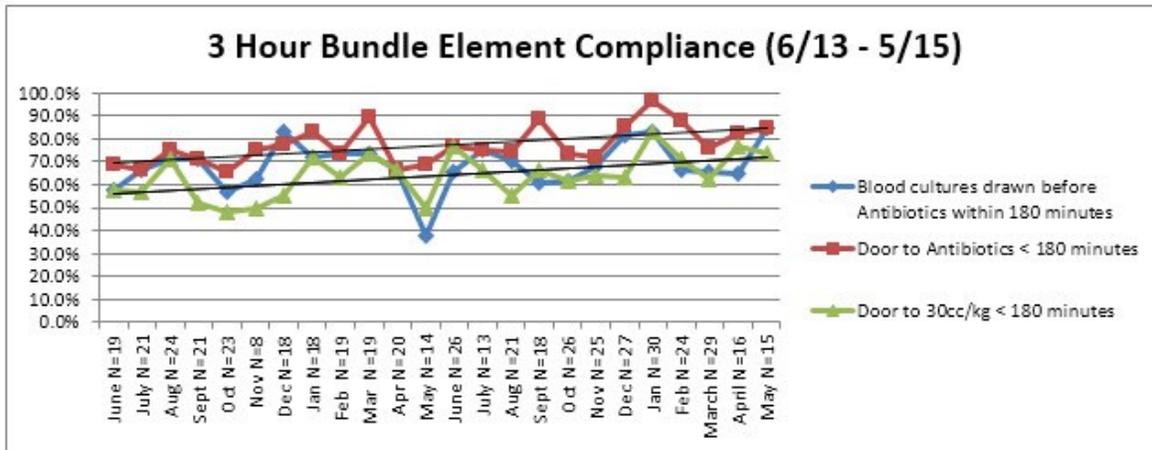
NATIONAL COLLABORATIVES

- HVHC Triple Aim to show a slight decrease in length of stay, morbidity, and mortality was demonstrated at the DHHA Facility level.
- PI activities were discussed in the Inpatient Core Measures section of this report.
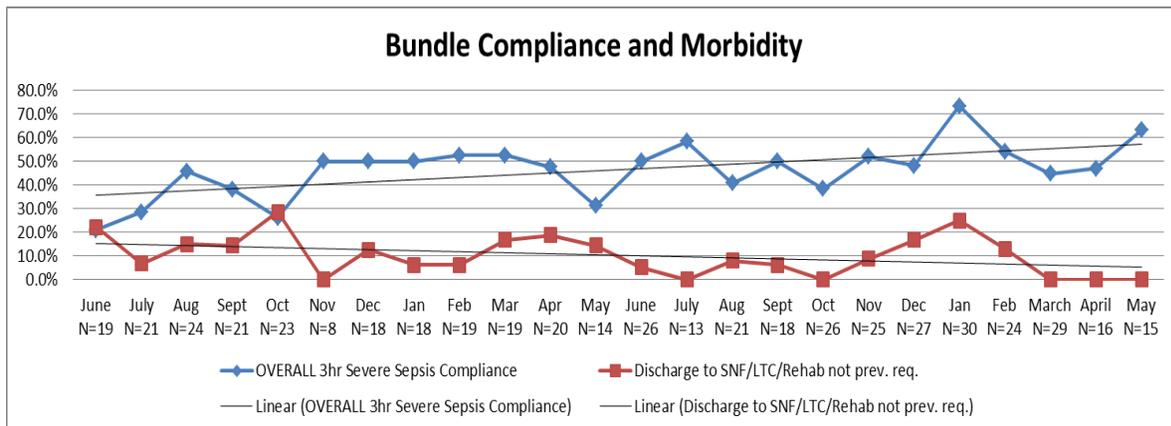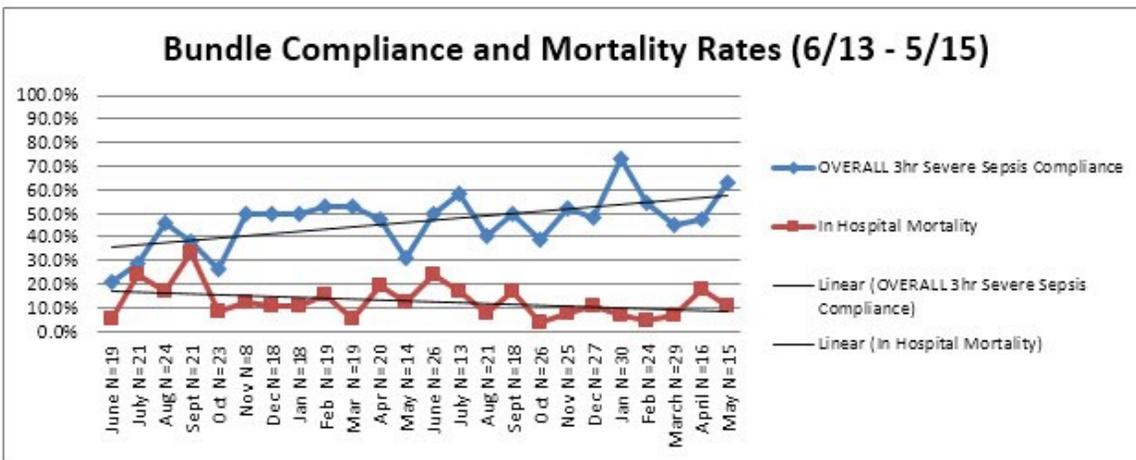
NATIONAL COLLABORATIVES

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. 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. VON provides reports which benchmark center specific data to neonatal centers from around the world. 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.

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 2015 VON data were collected between 1/1/2015 – 12/31/2015.
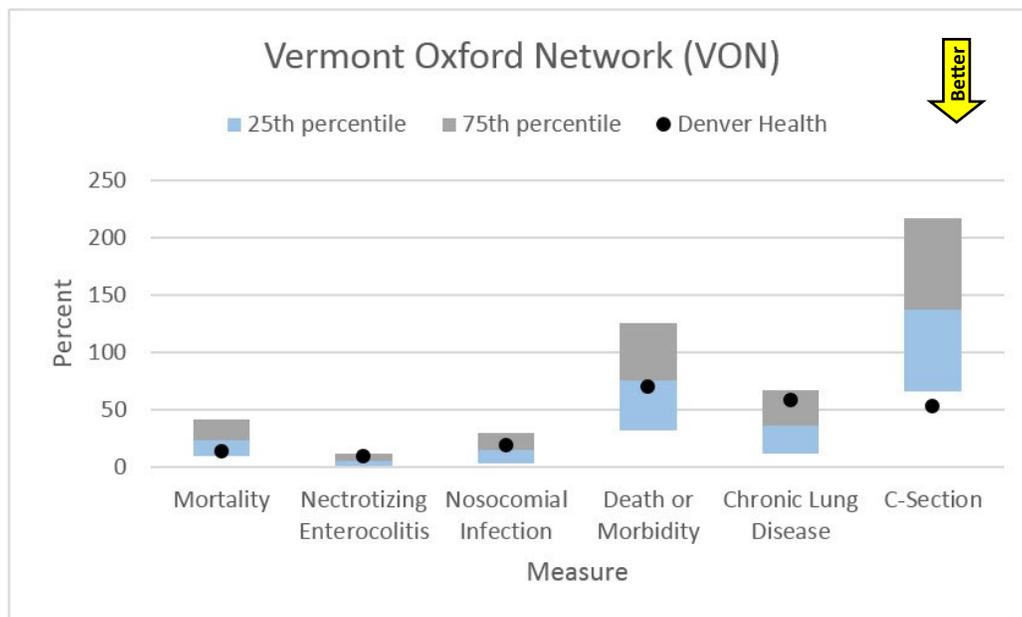
Source: VON Nightingale 2016

NATIONAL COLLABORATIVES

UNIVERSITY HEALTHSYSTEM CONSORTIUM (UHC) IMPERATIVES FOR QUALITY

Post Partum Hemorrhage (PPH) Collaborative

DHHA participated in the UHC Obstetrics Adverse Events Collaborative workgroup for postpartum hemorrhage from May 2014 through January 2015, concluding with a knowledge transfer conference call in April 2015. This collaborative workgroup consisted of twelve academic medical centers. The DHHA workgroup was sponsored by the Chief Quality Officer and included the Associate Director of Obstetrics, the Obstetrics Quality Improvement Physician, the Lead Certified Nurse Midwife, the Labor and Delivery (L&D) Manager, the L&D Educator, the L&D Nurse Informaticist, and a Department of Safety and Quality Liaison.

DHHA joined this collaborative with a relatively high rate of postpartum hemorrhage, albeit our transfusion rate was low. Through monthly exchanges with this collaborative workgroup and a gap analysis, the following changes were put in place at DHHA:
- A new hemorrhage simulator, Mama Natalie, was purchased and interdisciplinary hemorrhage drills began on L&D
- A new bleeding risk assessment was created and implemented
    - ◊ Nursing staff complete a risk assessment on a patient's admission, which populates a risk group and appropriate order sets to anticipate blood transfusion needs
    - ◊ Color indicators added to the OB Traceview track board alerting staff to patient's bleeding risk assessment (red for high, orange for medium, and green for low)
    - ◊ Nursing staff complete a risk assessment each shift to account for changes in status and communicate changes to providers
- New expectations of staff response for ongoing blood loss after delivery totaling 150 ml (not including delivery estimated blood loss)
- A reporting tool was created that tracks postpartum hemorrhages and transfusion rates

Colon Bundle

In 2015, a multidisciplinary group was formed to focus on Colon SSI reduction. The team consisted of operating room (OR) technicians and nurses as well as general surgeons and infection preventionists. A colon bundle was created which consisted of pre-, intra-, and post-operative interventions. Additionally, DHHA joined the UHC Colon Collaborative. This collaboration has provided guidance on how to introduce best practices into our hospital. After implementing the colon bundle, colon SSI have decreased and we expect this trend to continue into 2016. We will use our colon bundle experience to improve rates of SSI after arthroplasty in 2016.

Colon Surgery Infections per 100 Procedures
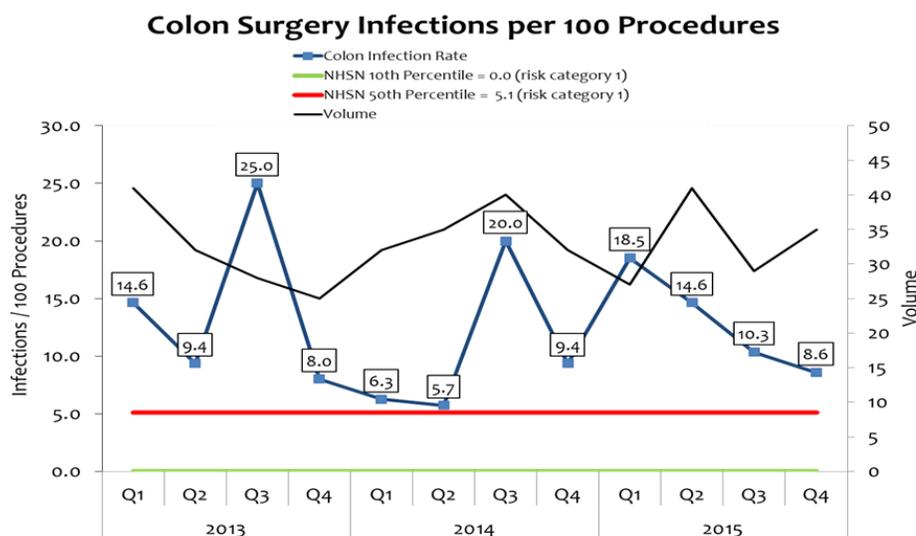
INPATIENT NURSING SENSITIVE INDICATORS

HEALTHCARE ACQUIRED PRESSURE ULCERS (HAPU)

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

Data Source: Quarterly audit of all patients in Medical, Medical-Surgical, and Critical Care units following NDNQI data collection methods.

- Nurses from the Nursing Outcomes, Research, and Evidence-Based Practice Department (NORE) and Wound Care Nurses led a joint effort to create an NDNQI pressure ulcer data collection team lead training which included didactic and hands-on components. Trainings were held on June 4, June 8, June 10, August 18, and October 15. A total of 28 new team leads were trained on NDNQI data collection methods and the identification and staging of pressure ulcers.
- Pressure ulcers related to oxygen tubing were identified in Q3 and Q4 2015. Wound care nurses have made oxygen padding easier to find in supply rooms by taping the packaging to the outside of the bin that contains the pads.
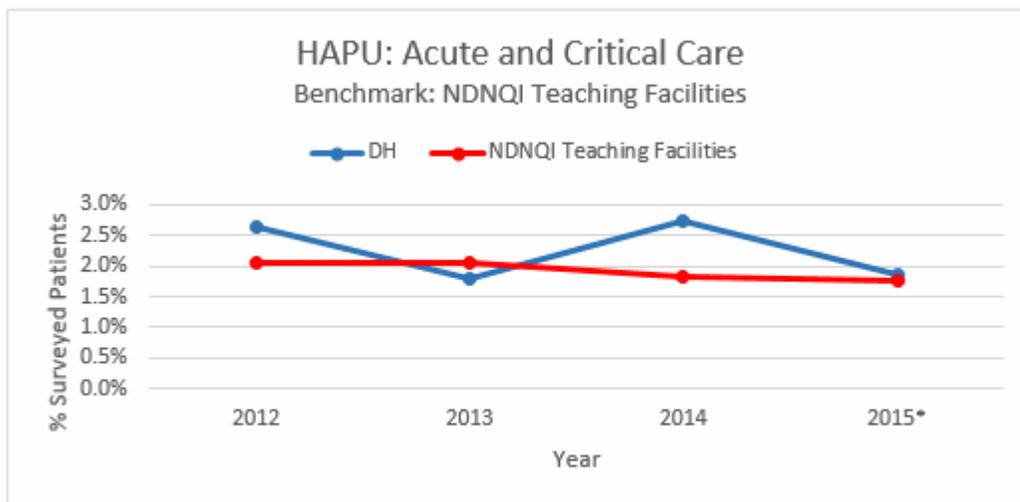
*Benchmark for 2015 only includes first 3 quarters. Quarter 4 benchmark has not yet been released.

INPATIENT NURSING SENSITIVE INDICATORS

RESTRAINTS

Performance Measure:
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.

Data Sources:
Critical Care: Observation of all critical patients to determine restraint usage, performed three times per month. Review of charts for all patients found to be in restraints of all types.
Emergency Department: Chart review of 70 randomly selected charts marked for restraint usage per quarter.
Acute Care: All restrained patient charts reviewed.

- On 3/18/15—3/19/15, the State of Colorado conducted a survey that focused on restraint use, restraint documentation, and the grievance process. No deficiencies were found.
- Written standard work for Pediatrics/PICU restraint audits and Critical Care restraint audits was developed and approved.
- Annual enhanced restraint education was conducted in May 2015 by the Posey Company.

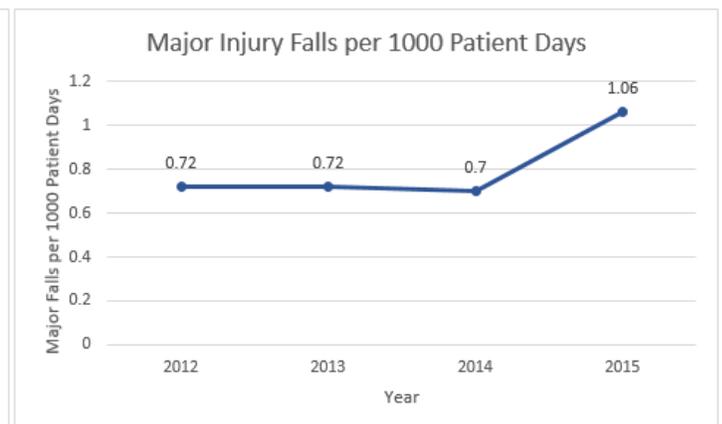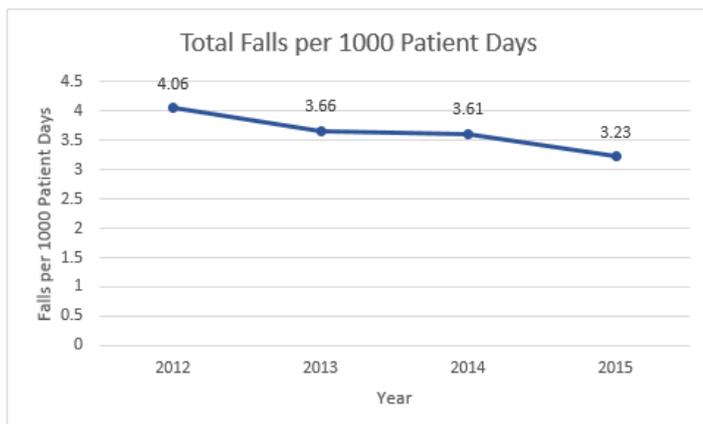| Critical Care Restraint Audit Results 2015	
Question	Percent Yes
If no order present, was the MD notified?	47.4%
Was the observation section complete?	66.7%
Is the restraint comments section on the plan of care complete?	77.8%
Restraint type indicated	81.0%
Does this patient have a current order for restraints and is the data and time indicated?	81.6%
Is the ED documentation on teaching complete?	83.8%
Is there a plan of care in place under the plan of care section?	85.7%
Was the ROM and positioning section complete?	90.2%
Is rationale for restraint use indicated?	91.1%
Is the response to restraints section complete?	91.1%
Is the progress towards removal of restraints section complete?	91.1%
Is the least restrictive measures section complete?	91.1%
Was the restraint release section complete?	93.7%
Was the airway section complete?	94.0%
Was the hygiene & elimination section complete?	94.0%
Was the orientation and call light within reach section complete?	94.0%
Was the skin condition section complete?	95.0%
Was the nutrition & hydration section complete?	95.0%
Does the type of restraint order match the type of restrain being used?	97.8%
Is the restraint type documented?	98.4%

Restraint Prevalence: 2015
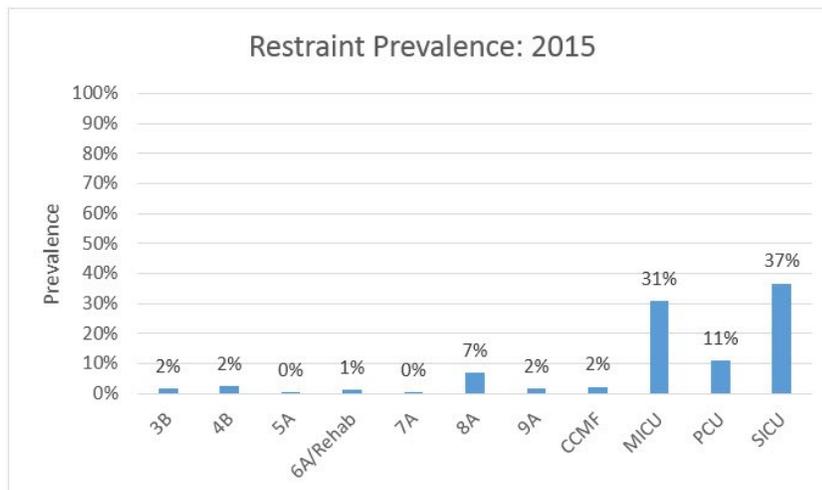
INPATIENT NURSING SENSITIVE INDICATORS

ACUTE CARE PATIENT FALLS

Performance Measures: Falls per 1000 patient days and injury fall per 1000 patient days

Data Sources: Patient Safety Intelligence (PSI) reports and chart review. PSI fall reports are not finalized until 6 weeks after a report is submitted. Consider results less than 6 weeks past as preliminary.

- The Acute Care Quality Champion program continued through 2015. Quality champions are bedside RNs and/or charge RNs who have an interest in quality improvement. Champions receive three hours of training on Science of Safety basics and performing root cause analyses. In 2015, champions focused on fall prevention activities including fall root cause analyses and fall prevention audits. Twenty-nine root cause analyses and 51 fall prevention audits were completed by Quality Champions in 2015. Six new quality champions were trained in 2015, and we currently have representation from the following units: 9A, 8A, 7A, 6A, 5, Oasis, 4B, 3B, Float Pool, and CCMF.

- In response to an increase in total falls and major injury falls in January 2015, a group of stakeholders convened to develop standard work for fall prevention in acute care. The group included representation from nursing (including director, managers, educator, charge RNs, staff RNs, and healthcare technician), hospital medicine, inpatient pharmacy, and inpatient therapy. This standard work was piloted on two units starting in April 2015 and then rolled out to all of acute care in August 2015. Standard work included standard interpretation of the fall risk assessment, standard interventions based on fall risk score, standard visual management, fall prevention audits, and a post-fall interdisciplinary bedside huddle.

- An interdisciplinary Fall Prevention Task Force began in April 2015 with a noon conference/case review and then met monthly for the remainder of 2015. The task force conducted a comprehensive literature review, visited Craig hospital to view their fall prevention techniques on traumatic brain injury patients, and trialed new fall prevention and injury prevention products. The group worked to bring in two new fall prevention products; activity aprons and self-releasing roll belts. They also developed an evidence-based algorithm tool which can be used for patients who are at a high risk to fall and also at a high risk for injury. The tool recommends fall prevention interventions for this challenging population based on patient characteristics. The task force also reviewed a Joint Commission Sentinel Event Alert on falls and determined that all recommendations in the alert were in place at DHHA.

Total Falls per 1000 Patient Days — 2012: 4.06, 2013: 3.66, 2014: 3.61, 2015: 3.23

Major Injury Falls per 1000 Patient Days — 2012: 0.72, 2013: 0.72, 2014: 0.7, 2015: 1.06

INPATIENT NURSING SENSITIVE INDICATORS

NEXT STEPS:

- Acute care leadership, NORE, and Posey are working together on an agreement which would allow for chair alarms to link into the nurse call system. This will support faster response times to chair alarms. The work will continue into 2016.

- NORE began work on fall prevention with the DPSQ and ED stakeholders. The ED had a higher percent of injury falls (40% of total falls) in 2015 than the hospital-wide percentage of injury falls (28%). A literature review, staff survey, and medical record review were initiated. Environmental rounds were also scheduled for January 2016. Work on a fall prevention program in the ED will continue into 2016.

- NORE partnered with Instructional Design to create a Cornerstone module to educate nursing staff on the Hester Davis Scale (HDS), which will be the new fall risk assessment in Epic. The plan is to push the module to users in Q1 2016.

- NORE and the Patient Safety Intelligence (PSI) Administrator worked to create changes in the fall PSI which would allow NORE to complete the entire fall quality review in PSI, rather than in a Microsoft Access database. This will help ensure accuracy of data, allow for easier access to quality review data and simplify the fall reporting process. Work on these changes will continue into 2016.

- NORE completed an evaluation of the Joint Commission fall prevention Targeted Solutions Tool (TST). It was determined that NORE's current reporting process is more sophisticated than the TST, with one exception. The TST offers a falls top contributing factors report. With the support of acute care leadership, NORE created a top five contributing factors report which is now published monthly and included on the acute care divisional Gemba board.

PATIENT SAFETY & QUALITY IMPROVEMENT PROJECTS

PolicySTAT

Policy and Guidelines are critical documents for reference to ensure we provide high quality and safe care to our patients. In February a Lean Value Stream Analysis (VSA) was led by the Lean and PSQ Departments with the objective to "strategically develop and prioritize an improvement plan to better define and streamline the process of policy, procedure and guideline (PP&G) creation and revision." The ability to review and revise documents timely and efficiently was a critical goal.

PolicySTAT was chosen after an initial review of eleven programs. Three companies presented their document management systems to an interdisciplinary team. Over 300 employees were trained to create, edit, and approve documents. In December 2015, PolicySTAT went live with minimal issues or concerns. The web based system can be accessed by staff from any internet connection quickly and efficiently.

PolicySTAT Implementation			
Metric	Baseline (Nov. 2015)	Target	Actual
Time from PP&G Submission to Post	92.7 days	45 days	20.3 days
Number of Expired Policies (past review date)	252	0	93
Percent of Expired Policies	19.3%	0%	11%

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

The downward trend over the last three years of procedural sedation safety events may be attributed to the combined efforts of staff education, awareness and analysis of events, and increased oversight of the process by well qualified and competent staff. Safety events currently rely on self-reporting and therefore may be underreported. With the implementation of a new EHR in 2016, electronic surveillance may assist in identifying additional events.

Procedural Sedation — Outpatient Areas

Bundle Pass Rate by quarter:

Quarter	Bundle Pass Rate
Q1 2014 (n=106)	92%
Q2 2014 (n=106)	92%
Q3 2014 (n=105)	95%
Q4 2014 (n=106)	97%
Q1 2015 (n=112)	93%
Q2 2015 (n=110)	97%
Q3 2015 (n=107)	99%
Q4 2015 (n=108)	94%

Procedural Sedation — Inpatient Areas

Bundle Pass Rate by quarter:

Quarter	Bundle Pass Rate
Q1 2014 (n=15)	93%
Q2 2014 (n=11)	88%
Q3 2014 (n=19)	53%
Q4 2014 (n=21)	90%
Q1 2015 (n=23)	83%
Q2 2015 (n=20)	100%
Q3 2015 (n=20)	95%
Q4 2015 (n=17)	100%

Procedural Sedation Events

% of Occurences by year:

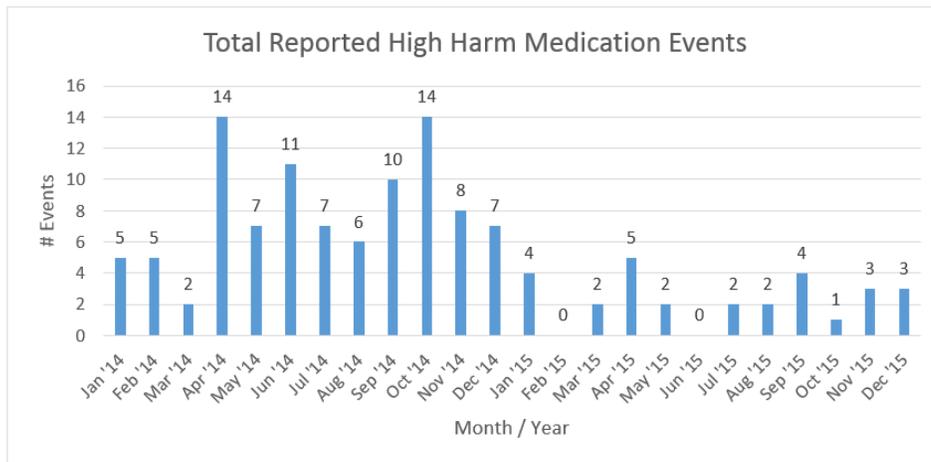| Year	% of Occurences
2012 (Approx. 36 of 5300)	0.72%
2013 (Approx. 30 of 5400)	0.66%
2014 (Approx. 20 of 585)	0.34%
2015 (Approx. 13 of 5839)	0.22%

PATIENT SAFETY & QUALITY IMPROVEMENT PROJECTS

EVALUATION OF MEDICATION EVENTS

Medication administration is a high-risk activity that requires technology, 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-Harms event undergo a multidisciplinary review by DPSQ and Pharmacy to determine root cause or system failures. Adjudicated results are reported to the Executive staff.

ACCOMPLISHMENTS

- Enhanced the multidisciplinary review process for high harm medication events
- Communication and education for staff and leadership surrounding medication events related to specific events reported.
- PCA pump safety enhancements.
- Review of processes in relation to the Pyxis's, in specific areas (OR, NICU, etc.) with regards to staff safety and medication safety

Total Reported High Harm Medication Events

Bar chart showing # Events by Month/Year:
Jan '14: 5, Feb '14: 5, Mar '14: 2, Apr '14: 14, May '14: 7, Jun '14: 11, Jul '14: 7, Aug '14: 6, Sep '14: 10, Oct '14: 14, Nov '14: 8, Dec '14: 7, Jan '15: 4, Feb '15: 0, Mar '15: 2, Apr '15: 5, May '15: 2, Jun '15: 0, Jul '15: 2, Aug '15: 2, Sep '15: 4, Oct '15: 1, Nov '15: 3, Dec '15: 3

REVISED INFORMED CONSENT FOR SURGERY AND PROCEDURES

In the last year, DHHA recognized the value in revising the Informed Consent for Surgery and Procedures form to enhance communication between providers and patients. This new consent form allows patients to have a better understanding of the surgery or procedure being considered. The consent form at DHHA was revised to include 5th grade language, added anatomical pictures and prompts the provider to ask the patient to "teach back" what they understand is going to occur. From a patient perspective the form does a better job of guiding the critical conversation of informed consent between the provider and the patient. Patients have verbalized positive experience with physicians in using this new form.

A video was created demonstrating obtaining informed consent and performing "teach back." Pictured from the video are Dr. Stahel and Mr. Dunham.

https://www.youtube.com/watch?v=ihghRqRE3YE&feature=youtu.be

HIGH ACUITY CARE

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

1. Adult Acute Care Medical Alert/Medical Emergency (i.e. cardiopulmonary arrests, COR zeros)
2. Adult Rapid Response calls
3. Bouncebacks to the 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.
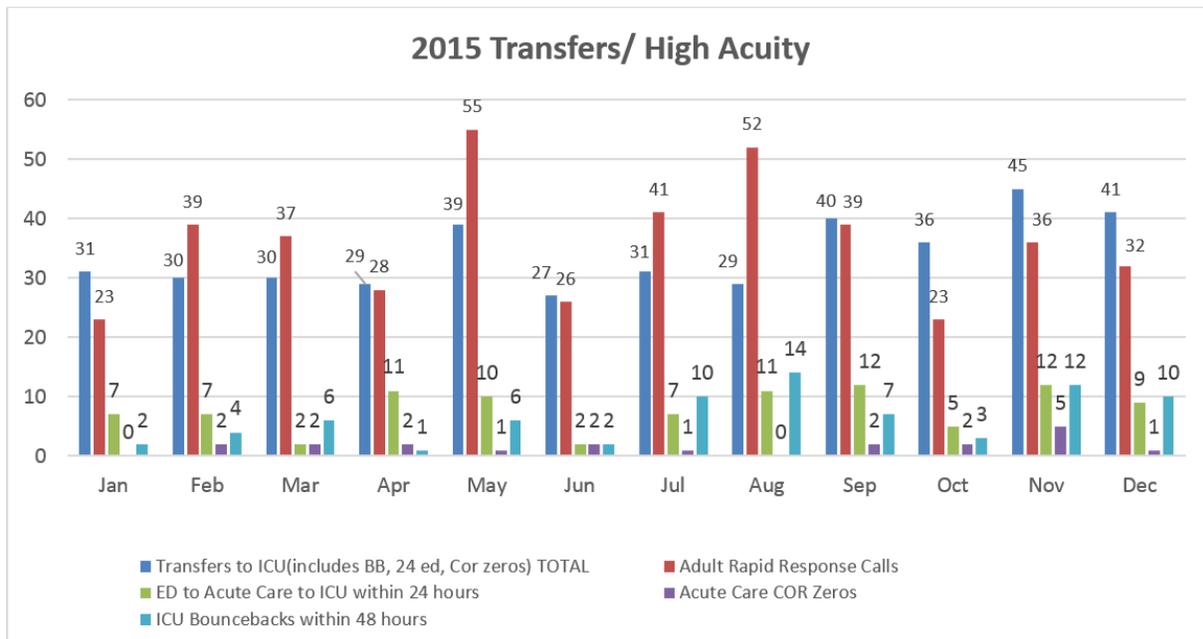
EMERGENCY RESPONSE

A coordinated review of all medical emergencies and surrounding processes related to Medical Alert/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 on 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 been able to maintain a decreased number of patients who reach the level of Medical emergency initiation.

HIGH ACUITY CARE

ICU TRANSFERS AND BOUNCEBACKS

Overall the total monthly transfers continues to be approximately 30 per month. The goal for 2016 will be to increase the usage of the Rapid Response Process using clinical triggers.

There was a slight increase in the total number of bouncebacks to the ICU within 48 hours during 2015. The bouncebacks are reviewed with the units and follow up is provided directly to the staff involved. New staff and high patient volumes in the ICU are thought to be one of the causes of the increase in bouncebacks. Education is being provided to the ICUs in regards to the Rapid Response Criteria, Clinical Triggers and empowerment to the ICU staff to request a patient to remain in the ICU if they continue to need a higher level of care. Education will be provided on an ongoing basis and as the need arises. Overall, the total number of transfers continues to show a gradual decline.

COR ZEROS

There was a slight increase in the number of COR Zeros in 2015. All COR Zeros are reviewed by the COR Zero Committee and no significant trends have been identified. Rapid Response Process education continued and was presented in the quarterly newsletter. Follow-up was conducted as needed for each specific unit and team.

There was an increase in Acute Care COR Zeros in November 2015. No significant trends were identified while the unit and floors were at high volumes. There was an increase in education in regards to Rapid Response and escalation of care.
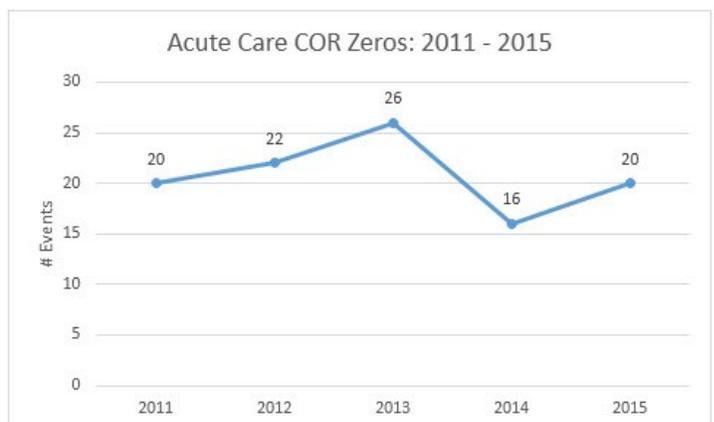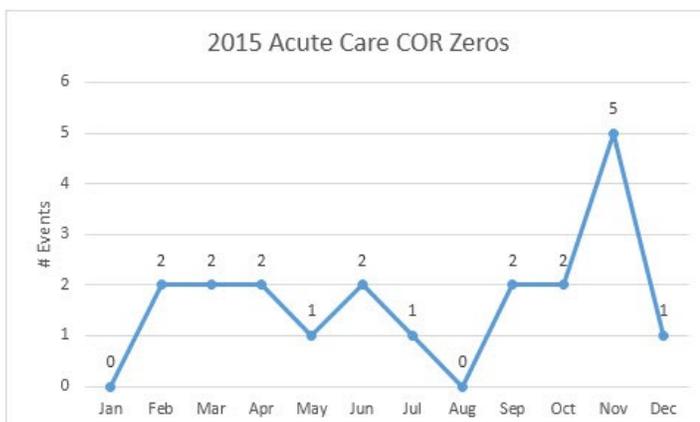
PATIENT SAFETY REPORTING

DAILY PATIENT SAFETY BRIEFING

The Daily Patient Safety Briefing is an interdisciplinary enterprise-wide daily meeting established in 2014 continues to be a valuable communication tool that addresses real time patient safety information across the institution. The venue supports immediate action to events that have occurred within the previous 24 hours or any anticipated events that may occur in the next 24 hours. These calls are facilitated by clinical leadership with participation from executive leadership to front line staff. Some of the common issues discussed on the call are patient falls, OR scheduling, census and bed control, pharmacy, environmental and infection control concerns. In September 2015, DHHA added weekends and holidays to the process, thereby encouraging all employees to participate and engage in the Daily Patient Safety Briefing 7 days a week, 365 days a year. Participation on average is greater than 50 people on the line and in person daily.

PATIENT SAFETY INTELLIGENCE REPORTING

Patient Safety Intelligence (PSI) is DHHA's incident reporting system. All employees can access the system through our intranet and anonymously report on safety issues.

- 5,602 events reported in 2015
- 5.9% increase compared to the prior year
- Significant decrease in physical harm events (AHRQ harm scores of 6-9)
- Many feature upgrades, such as new indicators for two-patient identifier and electronic medical record errors
- System upgrades for easier navigation and quicker loading time
- New education was launched: 87 managers were trained to review incidents and 274 staff members participated in advanced PSI reporting techniques.

PSI Reported Events

DHHA PSI Reported Events by Type, 2015
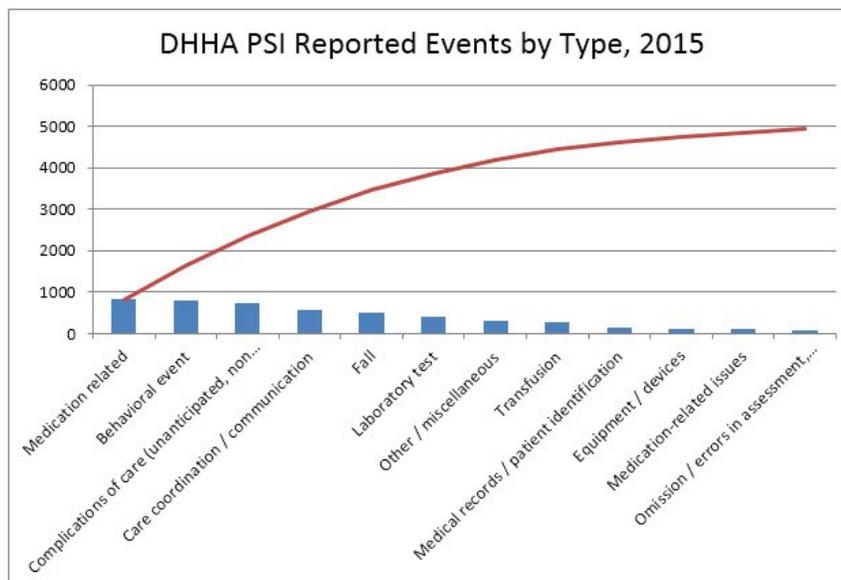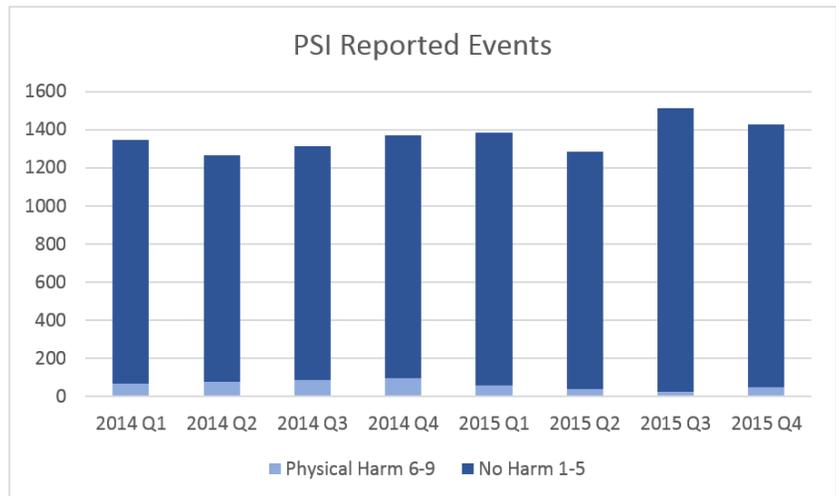
INFECTION PREVENTION & ANTIBIOTIC STEWARDSHIP

The mission of the Infection Prevention (IP) and Antibiotic Stewardship (AS) programs is to support our staff in providing the highest quality and safest healthcare 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 IP and AS initiatives

HAND HYGIENE

DHHA utilizes the WHO's 5 Moments of Hand Hygiene methodology to determine a facility's hand hygiene (HH) adherence rate. In 2015, the IP team continued to focus efforts on the HH program in both the inpatient and outpatient settings. In addition to IP observations, inpatient managers and hospital leadership also provided observations. Each unit's leadership was expected to conduct a minimum of 15 observations each month and submit the data to IP using a smart phone application. The data was used to determine the monthly and quarterly HH rates.
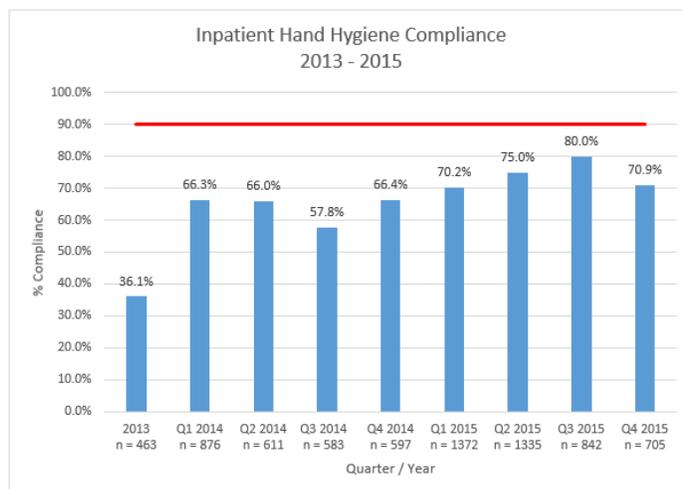
Strategies to improve HH adherence in 2015 included:

- Education: Venues for education included new employee orientation, new physician education, nursing orientation, and annual required competency training
- Dissemination of HH rates: HH rates were discussed at clinic huddles, staff meetings, and Gemba walks.
- Selection of an electronic HH monitoring system: DHHA pledged to upgrade the nurse call system and to combine this with an electronic hand hygiene monitoring system. After careful review of the benefits of each system, DHHA selected the Hill Rom product. The first phase of Hill Rom implementation occurred in December 2015 with introduction of the new product into Pavilion B (MICU, 3B, and 4B). The IP team will be trained on the system during 1st quarter 2016 and begin data collection. The second phase in 2016 will include Pavilion A and Pavilion M patient care areas.
- Improved HH products: Staff members voiced concern in the preceding years that the current HH products were inadequate. Specifically, they worried that triclosan-based soap could be detrimental to their reproductive health and that the waterless sanitizer was causing cracks and irritation to their hands. Thus, a trial of new soap and waterless product was conducted in 2015 in an effort to find a triclosan-free soap and waterless hand sanitizer that included emollient. The product trial is underway and will be fully adopted in 2016.

INFECTION PREVENTION & ANTIBIOTIC STEWARDSHIP

DEVICE-RELATED INFECTIONS

Central venous catheters, endotracheal tubes, and urinary catheters increase a patient's risk for Healthcare Associated Infections (HAI). DHHA tracks its device-related infections through the CDC's National Healthcare Surveillance Network (NHSN). DHHA rates were monitored and benchmarked against national mean rates for comparable units, e.g. the medical intensive care unit (MICU) was benchmarked against other similar medical major teaching ICUs while the surgical intensive care unit (SICU) was benchmarked against other trauma ICUs. Each rate is given an NHSN 'percentile" according to where we rank vs. our similar peer units: top 10%; 10-25%, 25-50%; 50-75%; 75-90%; and 90%.

The Standardized Infection Ratio (SIR) is a metric generated within NHSN. It uses important risk factors in historical data to calculate the expected number of infections given a patient population's risk factors for a specific infection event, and subsequently compares this number statistically with the actual number of infections observed.

Listed below are specific interventions that were undertaken in 2015. In addition to these specific device-related interventions, we also provide continued online training with post-test for all medical staff, including residents who perform central line insertion, intubation, ventilator care, and urinary catheter care.

1. Central Line Associated Bloodstream Infections (CLABSI)
Hospital-wide surveillance for CLABSI began in 2010. Although bundled prevention interventions are ongoing, we unfortunately observed an increase in CLABSI rates in most units across the hospital.

CLABSI per 1000 central line days

	2011	2012	2013	2014	2015	2015 NHSN percentile
MICU	0.0	1.2	0.9	0.6	1.4	50-75%
SICU	1.7	0.4	0.3	1.9	4.5	90%
PCU	0.9	0.0	0.8	0.9	4.9	90%
PICU	0.0	0.0	0.0	0.0	0.0	10%
NICU	2.5	1.2	2.4	1.8	5.6	75-90%
Acute Care	0.9	0.3	1.9	1.0	1.0	25-50%

Better

Adult CLABSI (encompassing the MICU, SICU, Progressive Care Unit (PCU) and Acute Care units) were addressed in July 2015 when the IP team conducted a case-control study to have a deeper understanding of potential causes of the increase. Total Parenteral Nutrition (TPN) use as highly predictive of subsequent CLABSI. Additionally, providers noted an anecdotal increase in TPN use, particularly in our post-operative patients. The IP team partnered with the vascular access providers and nursing leadership to develop a TPN Guideline. This document was circulated to all inpatient units through huddles and nurse educators. Some of the notable inclusions in this document are:
- Mandatory nutritionist consultation prior to TPN initiation
- Dedicated lumen for TPN with labeling
- Changing of TPN tubing every 24 hours on the night shift
- Date of central line dressing clearly marked on every central line

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INFECTION PREVENTION & ANTIBIOTIC STEWARDSHIP

After an increase in CLABSI rates in our neonatal intensive care unit (NICU) during 2014-2015, the unit-based council in NICU did an extensive project focusing on CLABSI reduction elements. This was a grassroots effort lead by the new graduate nursing cohort in the NICU. With IP support, they developed a comprehensive plan for the care of central lines. Components of this bundle included:

- Central line dressing changes performed by two bedside nurses
- Changes in workflow
- Insertion checklists
- Dedicated peripherally-inserted central catheter (PICC) team
- Education

With the implementation of this CLABSI prevention bundle, the NICU achieved nearly 160 days without CLABSI and zero CLABSI in 4th quarter 2015. Components of the NICU CLABSI bundle will be introduced throughout the hospital in 2016.
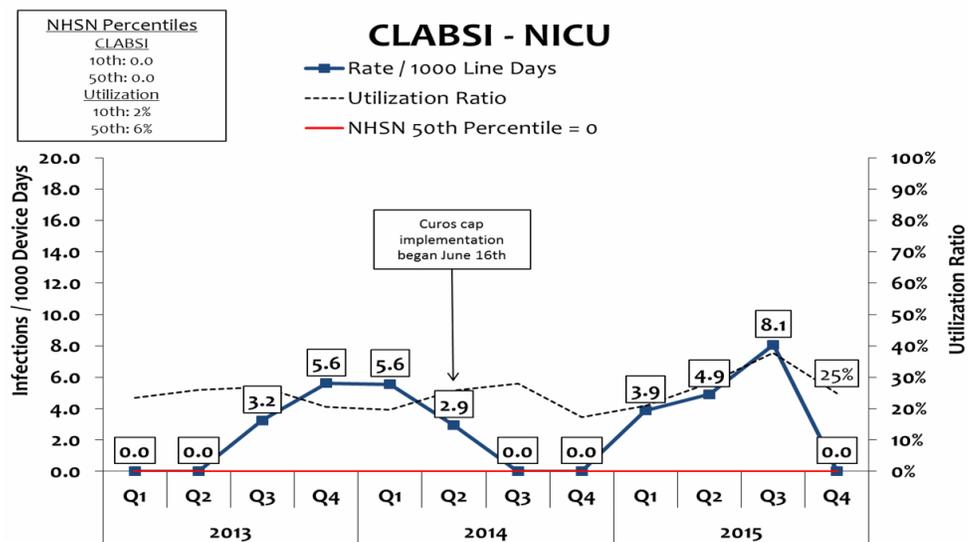
In addition to these targeted interventions for CLABSI, we also conducted regular audits for adherence to best practice central line care and to the TPN Guideline. We provided real-time CLABSI notification to nurse managers as well as the monthly line listing to each unit. We also continued universal decolonization in the critical care units (including chlorhexidine bathing and mupirocin nasal ointment) and chlorhexidine bed baths for patients on acute care floors.

Finally, avoidance of unnecessary central lines continues to be a DHHA goal. Our central line utilization is consistent with NHSN benchmarks. Evaluation of our central line use revealed lower utilization of central lines in our MICU, SICU, PICU, and Med/Surg floors (top 25-50% or less) compared to comparable units reporting nationally through NHSN. Finding are described in the table below.

Central Venous Catheter Utilization Ratio*

	2011	2012	2013	2014	2015	2015 NHSN Percentile
MICU	0.42	0.50	0.52	0.53	0.43	25-50%
SICU	0.50	0.46	0.54	0.37	0.39	10-25%
PCU	0.22	0.28	0.32	0.29	0.34	50-75%
PICU	0.19	0.18	0.17	0.14	0.12	10%
Acute Care	0.13	0.14	0.13	0.11	0.11	25-50%
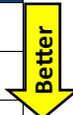
* line days / patient days

INFICTION PREVENTION & ANTIBIOTIC STEWARDSHIP

2. Ventilator Associated Pneumonia (VAP)

VAP Rates in the MICU, SICU, and PCU were monitored and benchmarked against national mean rates for comparable units using NHSN. Due to the significant changes in the surveillance definition in 2013 by the CDC, it is difficult to compare to the previous years' rates as a sign of performance change although we have seen a decrease from 2014 to 2015 rates under the new definition. NHSN has yet to update their benchmark percentiles based on the new definition as well. DHHA VAP rates over the last 5 years, and the corresponding NHSN percentile, are shown below.

VAP per 1000 ventilator days

	2011	2012	2013*	2014	2015	2015 NHSN percentile
MICU	1.3	0.7	0.3	0.0	0.0	10%
SICU	6.5	3.7	4.4	1.2	0.3	10-25%
PCU	3.7	4.9	1.3	2.8	0.0	10%

Better ↓
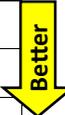
Interventions are championed by the IP, Patient Safety and Quality, unit managers and educators, directors, respiratory therapists and other front line staff. The VAP Bundle includes the following key elements.
- Minimize duration of ventilation
- Daily assessment of readiness to wean
- Daily interruption of sedation
- Elevate head of bed
- Regular oral care
- Continuous aspiration of subglottic secretions

INFECTION PREVENTION & ANTIBIOTIC STEWARDSHIP

3. Catheter-Related Urinary Tract Infections (CAUTI)

Hospital-wide surveillance for CAUTI began in 2014 although surveillance in the ICUs had been occurring for years. Although this is a low morbidity/mortality infection, it is a priority for IP because CAUTI a) can be caused by antibiotic-resistant pathogens; b) is not reimbursed by the Centers for Medicaid and Medicare Services (CMS); and c) is a strong nursing sensitive indicator.

In 2015, NHSN made significant changes to the CAUTI definition which inherently decreases the number of infections reported to NHSN. At the time of this report, NHSN has not updated percentile benchmark data to reflect the changes in definition. DHHA CAUTI rates over the last five years, and the corresponding NHSN percentile, is shown below.

CAUTI per 1000 Catheter Days

	2011	2012	2013	2014	2015 ***	2015 NHSN Percentile
MICU	4.3	1.7	1.6	2.7	1.2	10-25%
SICU	1.7	2.1	2.7	4.4	3.3	25-50%
PCU	4.6**	1.0	3.2	5.5	4.3	75-90%
Rehab	2.8*	0.0	7.7	15.6	4.8	75-90%
Acute Care	—	3.9*	4.3	3.8	2.5	75-90%

Better

* two quarters of data available
** three quarters of data available
*** definition change

Urinary Catheter Utilization Ratio*

	2011	2012	2013	2014	2015	2015 NHSN Percentile
MICU	0.69	0.72	0.77	0.71	0.67	25-50%
SICU	0.85	0.86	0.80	0.77	0.75	25-50%
PCU	0.64	0.58	0.50	0.43	0.39	75-90%
PICU	0.25	0.22	0.15	0.10	0.11	10-25%
Rehab	0.28	0.10	0.15	0.13	0.18	90%
Acute Care	0.13	0.14	0.14	0.11	0.09	10-25%

Better

* catheter days / patient days

In 2015 as part of participation in CAUTI initiatives and ongoing hospital CAUTI improvement program the IP team along with nursing leadership continued the 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.

Additionally, the IP staff began daily device audits in critical care then expanding to acute care. The goals of these rounds were to monitor prevention bundle elements, provide real time feedback to nursing staff, and recognize great work. These data were shared with the units on a regular basis.

Observations of Infection Prevention Measures, 9A, Week of 12/21/15
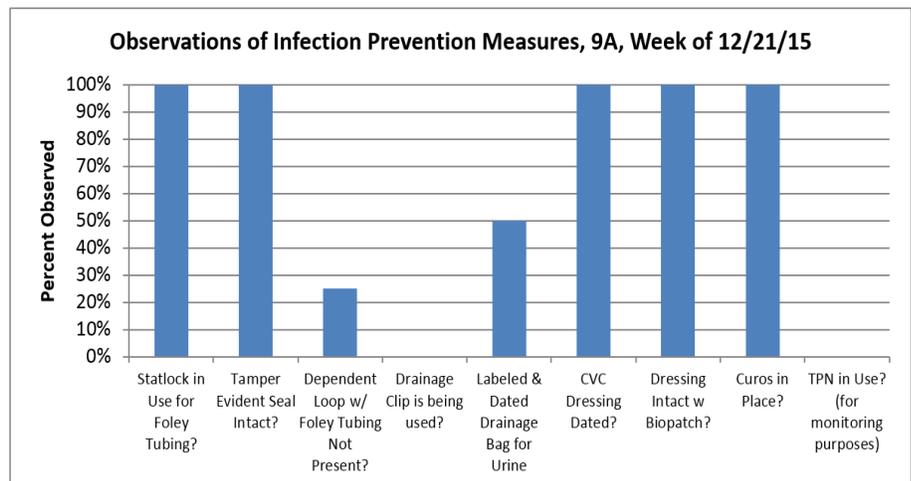
The CAUTI Champions program continued with ongoing education programs that targeted CAUTI reduction best practices. Additionally, the CAUTI Champions along with IP implemented a nurse driven protocol for Foley removal. This protocol allows for nurses to remove a certain subset of Foley catheters without a physician's order. This protocol was implemented in 2015 and will continue to be a focus in 2016 as we go live with Epic. The protocol will need to be implemented into the electronic system to support use and tracking.

INFECTION PREVENTION & ANTIBIOTIC STEWARDSHIP

SURGICAL SITE INFECTIONS (SSI)

DHHA performs SSI surveillance for 13 procedures which includes two nationally-reported procedures, and 8 additional procedures that we deem to be high impact to our patient population. SSI rates over the last five years, and the comparison to NHSN pooled mean rates along with the Standardized Infection Ratio (observed/expected infection rate based on individual patient risk) is shown in the table below.

SSI per 100 Operations

	2011	2012	2013	2014	2015	2015 SIR *significant
Knee Arthroplasty	3.4	1.5	0.0	0.6	0.0	0.0
Hip Arthroplasty	0.0	3.3	2.0	2.0	5.3	2.6*
Abdominal Hysterectomies	0.0	4.1	1.4	4.8	3.9	1.4
Vaginal Hysterectomies	1.8	3.7	1.4	2.9	0.0	—
Craniotomies	2.4	1.2	4.1	2.5	0.9	0.2
Thoracic/Lumbar Spinal Fusions	2.8	6.9	4.2	1.4	1.2	0.4
Gastric Surgeries	0.0	0.0	5.7	4.8	2.6	1.4
Herniorrhaphy	0.5	1.0	1.2	1.8	1.6	1.4
Colon Surgeries	4.4	8.2	14.5	9.8	11.0	1.7
Breast Surgeries	2.3	2.2	1.8	0.8	1.7	0.9
Prostate and Nephrectomy Surgeries°	4.9	3.0	0.0	6.8	7.1	—
Open Reduction of fracture	—	2.8	2.6	2.3	2.2	2.5*

° Nephrectomy procedures added January 2014

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, two of these six categories had a SIR that was statistically significantly higher than expected. The other categories were statistically no different than expected. A great deal of focus and work went into these surgeries to determine areas of opportunity for improvement.

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INFECTION PREVENTION & ANTIBIOTIC STEWARDSHIP

Standardized Infection Ratio (SIR) - All Procedures
Q1 2013 - Q4 2015
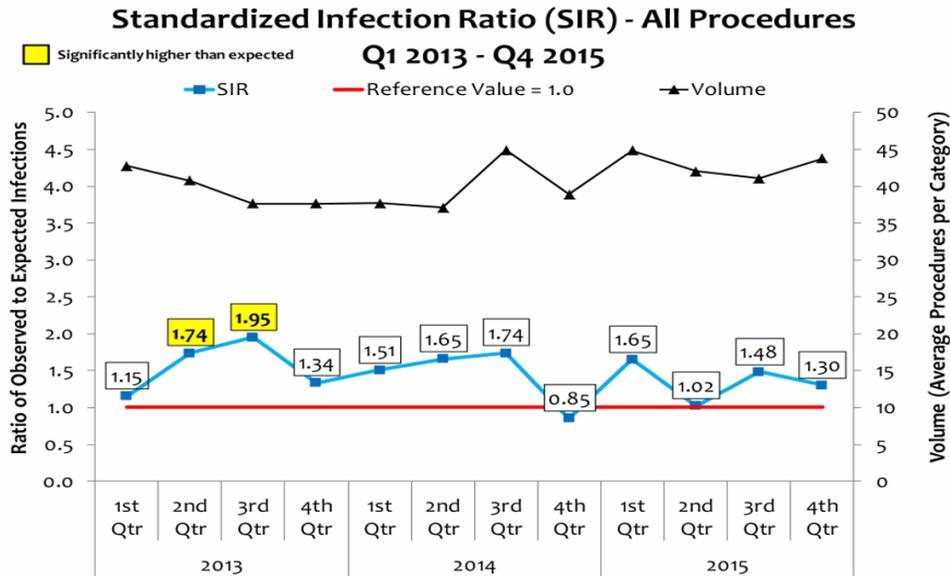
To address our higher-than-expected SSI rate after orthopedic surgeries, we initiated foot traffic studies. The purpose of the study was to determine the reason for why people are going in and out of the room during cases then implement targeted improvement opportunities based on results.

Ongoing online educational materials for all surgery and OR staff in the prevention of SSIs continue as part of annual training and education. In addition, real time education in conjunction with the OR staff and surgeons occurred throughout the year when areas of improvements were identified.

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. Extensive work was performed in Q3 and Q4 2015 to update the algorithm with appropriate ICD-10 codes to ensure continued optimization.

A more accurate risk predictor model for fracture surgeries was developed to more accurately predict the number of SSIs. This model can then be used to more accurately detect any fluctuations in infections and therefore have surgeon support for performance improvement efforts.

The IP team uses 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 (TJC) requirement as well as provide important feedback to surgeons about their infection data.

Other procedure-specific interventions undertaken in 2015 include:
- Standardization and increased use of chlorhexidine/alcohol skin prep in all surgeries that are indicated for use. Additionally increased staff education skin prep and skin prep kit changes.
- Continued pre-operative methicillin-resistant _Staphylococcus aureus_ (MRSA) screening and decolonization in select surgical patients.
- Peri-operative antibiotics Clinical Care Guideline (CCG) was approved, posted in ORs, and available on a smart phone application. 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.

INFECTION PREVENTION & ANTIBIOTIC STEWARDSHIP

MULTI-DRUG RESISTANT ORGANISMS (MDRO) AND OTHER SIGNIFICANT ORGANISMS

Our goal is to minimize hospital-associated spread of MDROs and other organisms identified as significant at DHHA. These were tracked daily and reported quarterly at IP Committee. DHHA rates over the last five years are shown in the table below.

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

	2011	2012	2013	2014	2015
Acinetobacter baumannii	0.13	0.11	0.09	0.07	0.10
Aspergillus sp.	0.16	0.11	0.03	0.03	0.02
Clostridium difficile	1.04	0.64	0.44	0.54	0.74
Extended spectrum beta lactamases (ESBLs)	0.40	0..60	0.15	0.08	0.11
Methicillin-resistant *Staphylococcus aureus* (MRSA)**	0.39	0.40	.015	0.27	0.26
Carbapenem-resistant *Pseudomonas aeruginosa*	0.04	0.12	0.04	0.06	0.04
Vancomycin-resistant enterococci *(VRE)*	0.19	0.28	0.35	0.25	0.15
Carbapenem-resistant Enterobacteriaceae (CRE) - previous noted at KPC	0.03	0.00	0.01	0.00	0.01

Inpatient rate per 1000 patient –days (includes community-onset and hospital-onset cases
**Surveillance definitions revised to include only healthcare associated MRSA

Daily monitoring of significant labs are generated electronically to minimize paper waste, 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.

Rates of *Aspergillus* isolated in clinical cultures also were reviewed quarterly by IP Committee. No increases in clinical isolates were noted from these surveillance data.
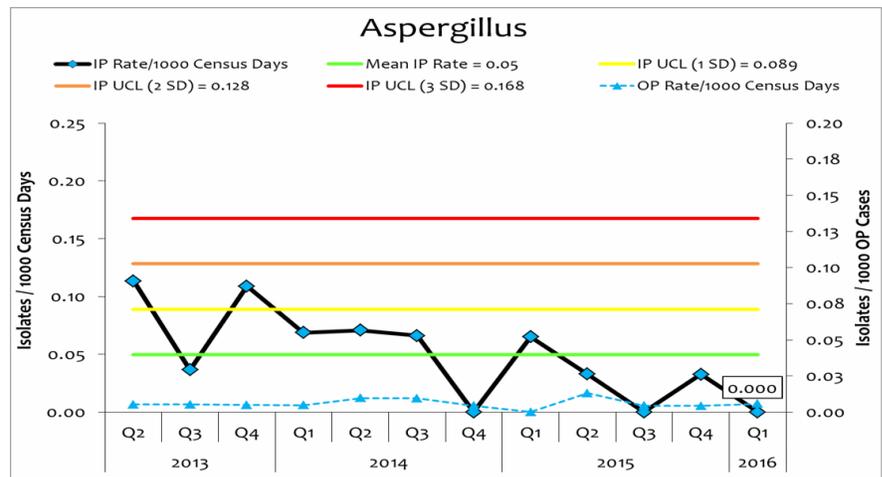
We continued efforts to increase compliance and understanding of transmission-based precautions by the following methods:
- Education of patient transporters, inpatient nursing staff, physical therapy and departments that care for patients especially in the area of contact precautions
- Education at nursing and new physician orientation
- Consultation with other clinical departments to provide in-services to their employees and to aid them in establishing educational 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 PREVENTION & ANTIBIOTIC STEWARDSHIP

COLLABORATION

Collaboration with Center for Occupational Safety and Health (COSH) to decrease occupational infection related hazards.

- Collaborated to implement the annual employee influenza vaccination program, see details below
- Provided education at new employee orientation.
- Updated annual competency training on subject of reporting of bloodborne pathogen exposures.
- Collaborated after potential exposure of employees to an infectious illness to consult on prophylaxis or therapy decisions.
- Educated staff on appropriate processes for exposures.
- 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 collects exposure details regarding each exposure event. The details collected 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.

Pathogen Exposures by Year
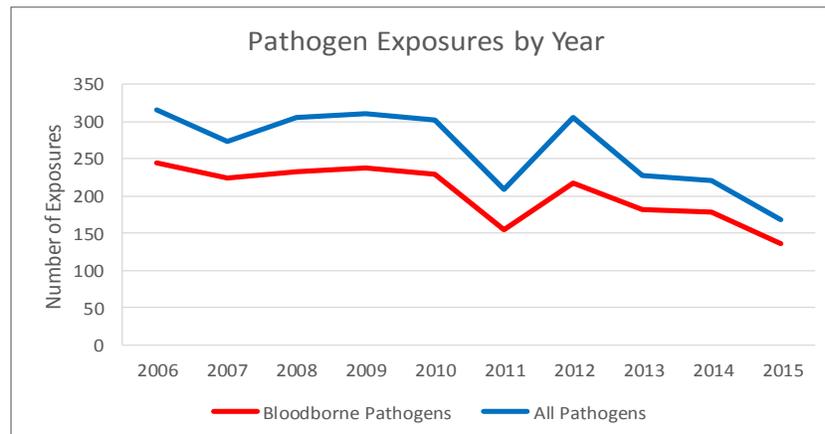
Collaboration with Environmental Services (EVS) program to focus on environmental cleaning protocols.

- Expanded use of the 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.
- Participate in monthly EVS meeting to focus on improvement opportunities.

Collaboration on construction projects to decrease risk of HAIs and ensure the design of new or remodeled facilities optimizes infection prevention.

- Attended meetings starting with predesign and preconstruction phases
- Attended weekly meeting where all ongoing projects are discussed
- Conducted Infection Control Risk Assessments (ICRAs) prior to the start of any construction
- Performed routine walk-throughs in all construction areas. Frequency was based on the risk as determined by the ICRA. Good adherence to IP requirements was found on both announced and unannounced rounds.
- Educated contractors about the infection prevention concerns related to hospital construction and hold project superintendent or their designees responsible for confirming that all workers received education prior to starting their work at DHHA .

DENVER HEALTH
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INFECTION PREVENTION & ANTIBIOTIC STEWARDSHIP

INFLUENZA VACCINATION

DHHA has mandated employee influenza vaccination since the 2011-2012 influenza season. The rationale for implementing such a policy reflects our appreciation that influenza is a serious illness that results in significant patient mortality each year. Influenza is highly contagious and can spread rapidly through a healthcare facility, where our patients are at high risk. In addition, up to 25% of healthcare workers (HCWs) contract influenza each season. We also appreciate that influenza seasons correlate with staffing shortages, as evidenced by an increase in sick calls at DHHA correlating with influenza peak activity during the past five flu seasons. HCWs might work while ill and/or might have minimal symptoms but be able to transmit virus to patients or co-workers. It is also clear that the vaccine is most effective in younger, healthier people, such as our employee population. Finally, there are data showing:

- Decreased mortality among patients
- Decreased influenza among vaccinated HCWs
- Decreased nosocomial influenza among hospitalized patients
- ~50% fewer sick days in workers who receive influenza vaccine

Over the past five years of the program, we have successfully implemented and continue to refine an electronic tracking system that allows managers to track real time the 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.

We have successfully partnered with the other academic teaching facilities in the Denver area to ensure all residents and faculty have been vaccinated.

Ultimately, DHHA has vaccinated >98% of all employees/contractors against seasonal influenza since the implementation of this policy. There was a ~2% exemption rate for those medical contraindications or religious waivers each year.

DHHA Influenza Vaccination Rate Among Targeted Employees 2009—2015*
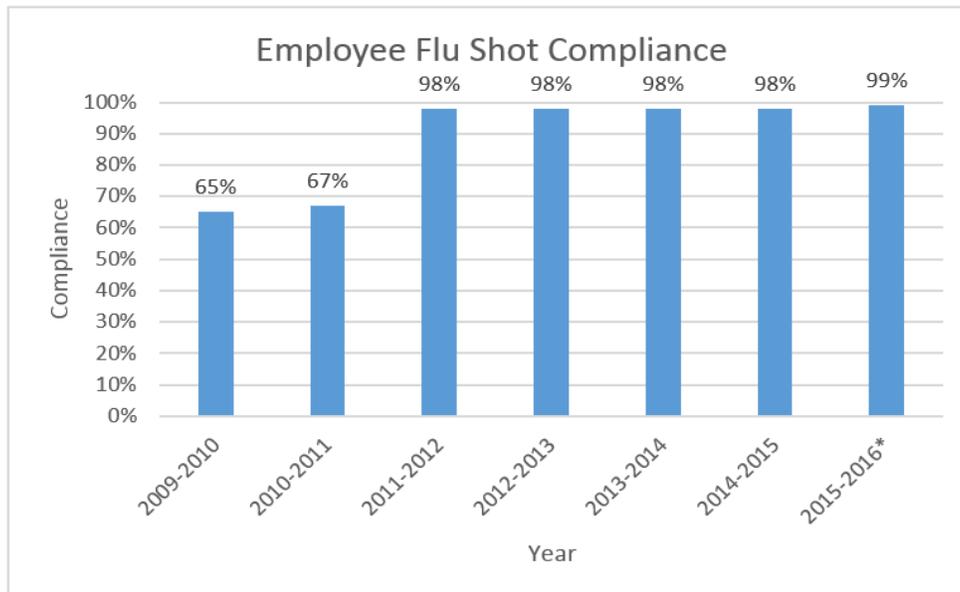
* The 2015-2016 season is not finalized until 3/31/16 per CDPHE reporting requirements.

INFECTION PREVENTION & ANTIBIOTIC STEWARDSHIP

EBOLA PREPARATION

The 2014-2015 Ebola epidemic in West Africa has been the largest in history with over 28,600 cases to data and over 11,300 deaths. With the first imported case into the United States, our Ebola preparation activities were put into place, and we quickly completed a comprehensive plan to safely care for Ebola patients at DHHA. 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 Colorado Department of Public Health and Environment (CDPHE) as well as the CDC and National Ebola Training and Education Center (NETEC).

In 2015, DHHA was recognized by the CDC to be the Region 8 Ebola Treatment Center. DHHA joins a prestigious list of medical facilities nationally and are one of two in Colorado (Children's Colorado is the other). While we hope our services are never needed, we are well-prepared due to the hard work of the Ebola preparedness team.

With the designation, DHHA received one of the Health and Human Services grants from the Hospital Preparedness Program. DHHA expects to receive $3.25 million dollars over a five-year period to continue to enhance our Ebola and other highly infectious, severe diseases program. As a regional treatment center, DHHA will take high risk pathogens from the mid-west region as well as other states and countries dependent on the current outbreak situation.

DENVER HEALTH
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INFECTION PREVENTION & ANTIBIOTIC STEWARDSHIP

ANTIBIOTIC STEWARDSHIP (AS)

Analysis of 2015 goals:

In 2015, 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
- Development of hospital antibiograms and assessment of resistance trends
- Formulary restriction and pre-authorization (via the Antimicrobial Stewardship Pager) for broad-spectrum, toxic, or high-cost antibiotics
- Daily post-prescription review with real-time prescribing recommendations
- Development, implementation, and maintenance of Clinical Care Guidelines for common infections
- Review of new FDA-approved antimicrobials for addition to the DHHA formulary
- Expansion and maintenance of the Antimicrobial Stewardship subsite on the Pulse
- Active Antimicrobial Subcommittee of Pharmacy and Therapeutics (P&T)

The following figures illustrate that over the last three years at DHHA there have been reductions in total antibiotic use, broad-spectrum antibiotic use and antibiotic expenditures.
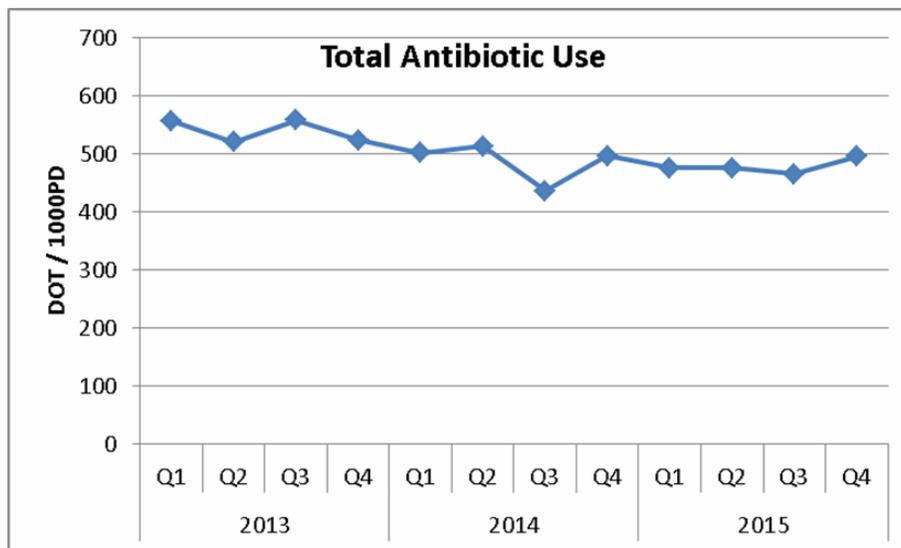
INFECTION PREVENTION & ANTIBIOTIC STEWARDSHIP

DENVER HEALTH

Level One Care for ALL
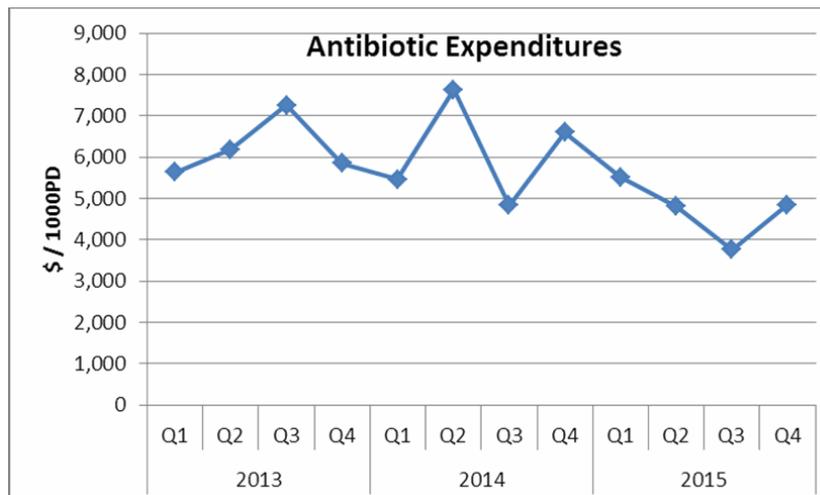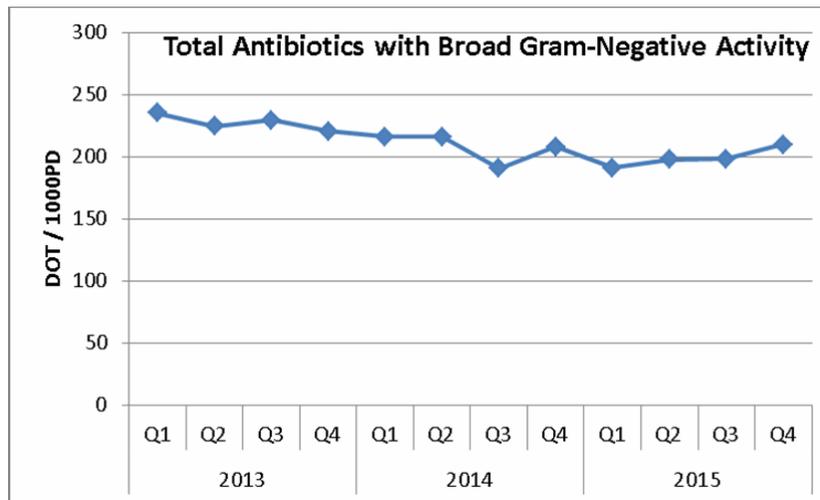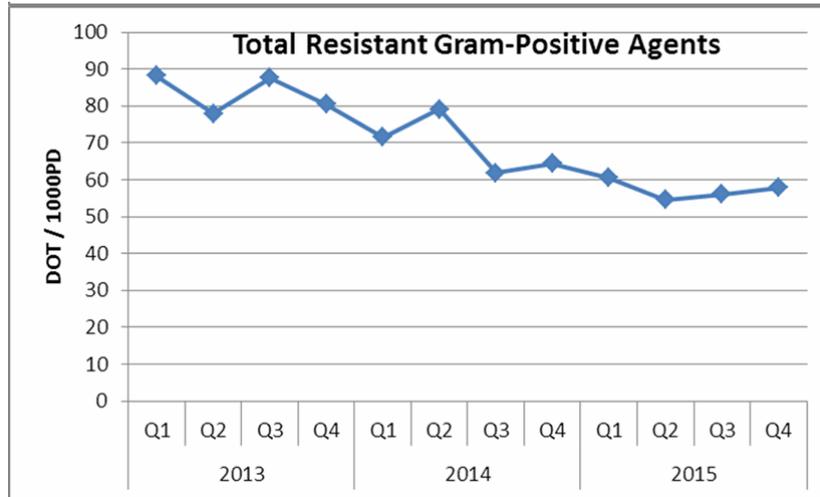
INFECTION PREVENTION & ANTIBIOTIC STEWARDSHIP

In 2015, the AS Program focused on three new initiatives. The following provides a description of the initiatives, updates on progress to date, and the impact on antibiotic utilization at DHHA.

Goal 1:
Develop, implement, and measure the impact of a Clinical Care Guideline for the management of patients hospitalized with a urinary tract infection (UTI)
- Review current management practices in relation to national guidelines and current best practices
- Engage stakeholders to improve inpatient UTI management
- Develop a Clinical Care Guideline for the management of inpatient UTIs.
- Develop an implementation plan for the guideline and metrics to track changes in management
- Integrate and increase uptake of urinalysis (UA) with reflex culture test

Progress to date:
- A comprehensive review of the types, microbiology, and treatment of inpatient UTIs at DHHA was completed. This led to the identification of two key opportunities to reduce antibiotic overuse—improvement in antibiotic selection and shortening treatment durations.
- With multi-disciplinary input, a Clinical Care Guideline for the management of adult inpatients with UTI was developed, approved by the P&T committee, and disseminated to providers.
- Clinical Pharmacists are being engaged to increase knowledge and use of the new UTI guideline. The pharmacists are identifying patients being treated for a UTI, documenting that they have reviewed cultures and antibiotics for those patients, and making recommendations to providers if therapy deviates from the new clinical care guideline.
- The AS Program is participating in the Colorado Hospital Association Antimicrobial Stewardship Collaborative to improve antibiotic prescribing for UTIs. Progress on the DHHA-specific antibiotic use goals are being tracked through quarterly data collection and review.
- The urinalysis (UA) with reflex to culture test was implemented in January 2015. As shown in the following figure, use of the standard UA decreased (blue bars) while use of the UA with reflex culture test (red line) increased.

59
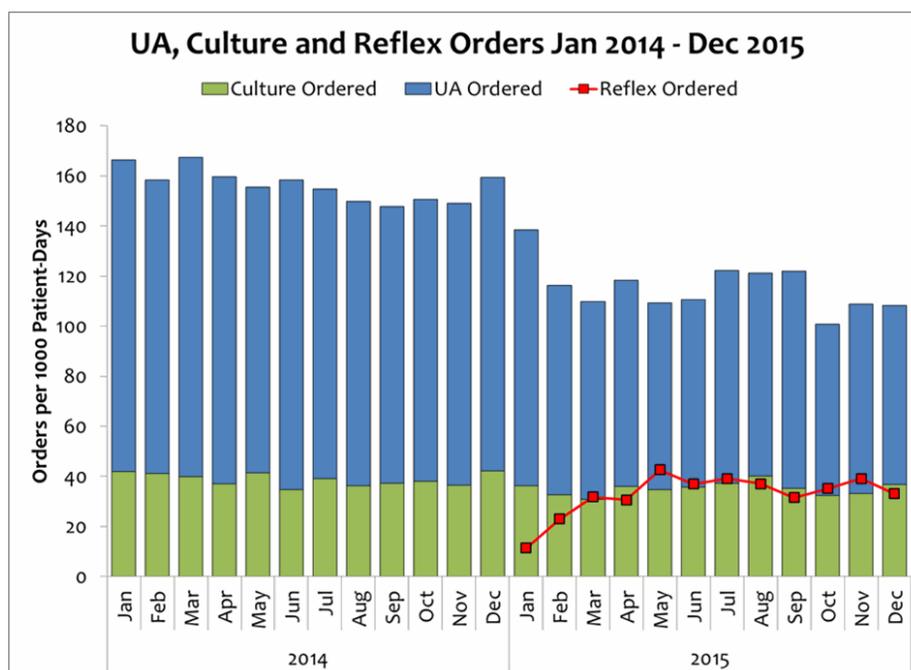
INFECTION PREVENTION & ANTIBIOTIC STEWARDSHIP

Goal 2:

Develop an electronic antibiotic utilization surveillance tool for ambulatory care, implement an intervention to improve pre-scribing, and measure the impact

- Develop tools to measure outpatient antibiotic use over time, with the potential for provider-specific data
- Identify high-yield infections for interventions to improve outpatient antibiotic use
- Work with outpatient stakeholders to develop, implement, and measure the impact of an intervention to improve outpatient antibiotic use.

Progress to date:

- A comprehensive review of antibiotic utilization in the DHHA ambulatory care system was completed leading to the identification of the following key opportunities to improve antibiotic use:
    - ◊ Reducing the rate of antibiotic prescriptions for acute bronchitis, acute sinusitis, and acute pharyngitis
    - ◊ Reducing use of fluoroquinolones
    - ◊ Shortening treatment durations
- An electronic tool was developed to measure antibiotic use over time by antibiotic, by condition, and by location (e.g. clinic, ED, AUCC)
- In collaboration with Ray Estacio, MD, provider-level antibiotic use metrics were developed to allow comparison of prescribing practices to peers. An example of the proposed metrics are shown in the following table.

	Provider A	Provider A's clinic	All DHHA providers
Antibiotics prescribed for non-pneumonia acute respiratory infections, % *	19/64 (30)	372/1,680 (22)	7,497/49,844 (15)
Antibiotic prescriptions longer than 7 days, %	89/325 (27)	2,703/8,109 (33)	35,980/85,600 (42)

*includes acute bronchitis, sinusitis, pharyngitis, otitis media, and upper respiratory infection

- This type of peer comparison has been shown to reduce inappropriate antibiotic use in primary care. Therefore, a pilot project is being developed to provide quarterly performance feedback to primary care providers with peer comparison.
- Tim Jenkins, MD and Jason Haukoos, MD are developing an R01 grant proposal testing an intervention to improve antibiotic use in Emergency Departments. The proposal will be submitted to AHRQ in June 2016.

Goal 3:

Leverage rapid diagnostic tests to improve antibiotic use at DHHA

- Review use of rapid blood culture tests at DHHA (blood multiplex polymerase chain reaction (PCR), stool multiplex PCR, respiratory multiplex PCR, and urine pneumococcal antigen) to identify opportunities to improve their use and impact
- For those in development (blood multiplex PCR), work with the microbiology lab on reporting of results, implementation, and prospective stewardship team notification
- Develop stewardship team daily report of positive tests to be used during prospective audit and provider feedback
- Develop institutional guidelines for use of rapid diagnostic tests and measure impact on antibiotic utilization

Progress to date:

- Stool multiplex PCR
    - ◊ A Clinical Care Guideline for the interpretation and management of stool multiplex PCR testing was developed and disseminated. A sample of the guidance is shown in the following table.

INFECTION PREVENTION & ANTIBIOTIC STEWARDSHIP

Pathogen(s)	Recommended	Alternative
Campylobacter (jejuni, coli, upsaliensis)	Azithromycin 500 mg IV/PO daily x 5 d	Levofloxacin 500 mg IV/PO daily x 5 d
Clostridium difficile	Please see DHHA's Clinical Care Guideline	Please see DHHA's Clinical Care Guideline
Cyclospora cayetanensis *Giardia lamblia* *Vibrio cholera*	Please refer to outpatient treatment recommendations above	-
Cryptosporidium	Nitazoxanide 500 mg PO BID x 3 d Immunocompromised x 14 d	Paromomycin 500 mg PO TID x 14 d
Entamoeba histolytica Invasive colitis	Metronidazole 750 mg PO TID + Paromomycin 500 mg PO TID x 7 d	Nitazoxanide 500 mg PO BID x 3 d + Iodoquinol 650 mg PO TID x 20 d

- Blood multiplex PCR
  - ◊ The AS Program collaborated closely with Microbiology laboratory staff to develop an implementation plan for the new blood multiplex PCR.
  - ◊ Clinical decision support was developed to assist with interpretation of the results and treatment decisions. The decision support was integrated into LifeLink Clinicals results reporting, will be integrated into EPIC, and is available on the Pulse.
  - ◊ Prior to the roll out of this new rapid diagnostic test, the AS Program provided in-person education about the test to all relevant provider groups.
  - ◊ The AS Program is using daily blood culture reporting to prospectively review patients with a positive blood multiplex PXR and provide feedback to providers in real time.

Other 2015 achievements:
- The AS Program was involved in a large amount of EPIC pre-implementation work to leverage this resource to improve antibiotic use.
- A new contract to redevelop the DHHA antibiotic smartphone application was finalized
- In a year plagued by antibiotic shortages, with careful inventory management and appropriate utilization, the AS Program avoided the need to implement alternative agent strategies or pharmacy automatic substitutions.
- The AS Program identified overuse of ertapenem for perioperative prophylaxis and took operational steps and surgeon education to reduce inappropriate use.
- The AS Program performed a comprehensive review of the literature on the use of probiotics for primary prevention of *Clostridum difficile* infection and developed a pharmacy-driven protocol for the use of Bio-K+ probiotic for prevention of *C. difficile* that was approved by the P&T committee as part of the *C. difficile* action plan for 2016.
- Data on the Pharmacy to Dose Vancomycin Protocol were analyzed, the Clinical Care Guideline was updated, and a competency for pharmacists was developed.

ACCREDITATION

THE JOINT COMMISSION

In April, the Main Laboratory and Ambulatory Care Services (ACS) School Based labs and outpatient labs were surveyed under the Comprehensive Accreditation Manual for Laboratory and Point-of-Care Testing by the Joint Commission. The following laboratory services were surveyed under Joint Commission standards in accordance with the Clinical Laboratory Improvement Amendments of 1988 for the specialties and subspecialties of Bacteriology, Mycology, Parasitology, Urinalysis, Coagulation and Hematology. There were 2 direct and 12 indirect recommendations for improvement (RFI) for the hospital and 1 direct and 9 indirect recommendations for CHS identified. Follow up interventions were implemented within required timeframes. The Main Lab and CHS Labs are fully accredited for two years (May 2017).

DHHA was recognized as part of the Joint Commission's 2015 annual report "America's Hospitals: Improving Quality and Safety," for attaining and sustaining excellence in accountability measure performance for Heart Attack, Heart Failure, Pneumonia, Surgical Care, Immunization and Prenatal Care. DHHA is one of only 1,043 hospitals out of more than 3,300 eligible hospitals in the United States to achieve the 2014 Top Performer distinction. The Top Performer program recognizes hospitals for improving performance on evidence-based interventions that increase the chances of health outcomes for patients with certain conditions. The performance measures included in the recognition program were heart attack, heart failure, pneumonia, surgical care, children's asthma, inpatient psychiatric services, stroke, venous thromboembolism, perinatal care, immunization ,tobacco treatment and substance use.

National Patient Safety Goal (NPSG) Use Alarms Safely

DHHA has committed to a systematic review and analysis of alarms in the organization and recognizes companies are adding additional sounds (bells and whistles) to new technology and _more_ and more patients are connected to devices with alarm systems. Alarms do not always signal problems that require clinician action. Too many alarm signals many of which are false or non-actionable, which results in staff taking inappropriate actions, such as silencing or ignoring these signals. The most promising intervention strategies for reducing alarms that have emerged thus far are widening of alarm parameters, implementing alarm delays, and frequently changing telemetry electrodes and wires

DHHA introduced the Hospira LifeCare PCA pumps with MedNet Software in the fall of 2012. These pumps have a built in bar-code scanner to program the drug and concentration and wireless reporting capabilities. After 18 months of data review at the Medication Administration Forum, the medication safety pharmacist began a project to reduce the number of nuisance alarms in compliance with the Joint Commission National Patient Safety Goal: Use Alarms Safely. The coordinated review of current practice, best practice and the ISMP goals of using drug libraries consisted of a team including nursing, the surgical intensive care pharmacist and the palliative care team. The new libraries were designated as Naïve and Tolerant with a High Dose for very high utilization patients. The data collected in Q4 2015 represents the final effect of the changes library limits and programs. Based on the data, the new program reduced 375 alarms from nursing practice during the quarter without adversely affecting patient safety.

Alarm Types at Baseline and New Library
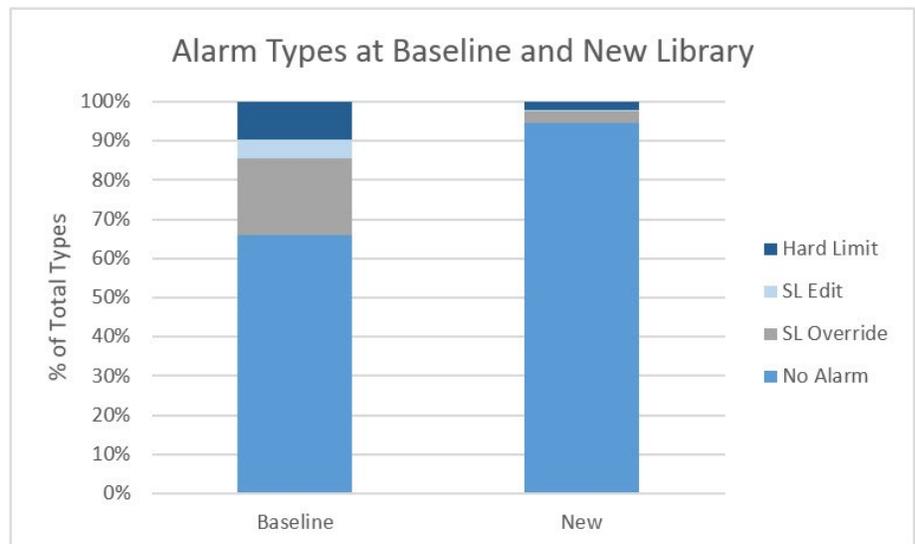
ACCREDITATION

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 se-lects a high risk process and conducts a pro active risk assessment. The assessment format DHHA has selected is the Failure Modes and Effects Analysis (FMEA). Through the Daily Patient Safety Briefing call a risk for drug diversion was identified. Drug Diversion is a known high risk in the healthcare industry. The potential of diversion and the inconsistency across the organization for wasting of narcotics increases the potential for harm to our patients and employees. A Value Stream Analysis (VSA) was conducted with the help for the Lean Department and an interdisciplinary team. During this VSA, the FMEA tool was utilized to record each step of the process. The team was able to brainstorm and record potential failure modes, potential causes for each failure mode, and effects of each cause. Then they assigned a rating for severity, occurrence, and detection leading to an overall Risk Priority Number (RPN).

Based on the RPN, the team identified opportunities for improvement in multiple areas. First, to improve the monitoring of the Pyxis medication reports by sending to nurse managers any nurse who was 3 standard deviations above the norm for additional investigation. Second, the process of wasting narcotics varied from unit to unit and nurses wanted a consistent process. Third, a technology defect was determined to increase risk of diversion by enabling the registration of temporary patients into the system thereby making it easier for a nurse to divert under a temporary patient. Fourth, provide a consistent schedule for pick up and disposal of the sharps bin (syringes were being wasted in the sharps containers) to the loading dock and to improve surveillance in the loading dock as well. And fifth, was the dissemination of education to all employees on drug abuse identification of addictive behaviors and how to seek appropriate help.

CONTINUAL READINESS

DHHA maintains a continual state of readiness for any surveyors who come to DHHA. In 2015 here were no substantiated com-plaints or recommendations from the Colorado Department of Public Health and Education (CDPHE) visits and being in hear two of The Joint Commission Triannual visit, the CR Steering Committee and Task Force continued with standard readiness work. At the monthly Continual Readiness Steering Committee Chapter, Leaders presented areas of strength and opportunities within their chapters for the group. Presentations on Information Management, Record of Care, Treatment and Services, Methadone Clinic, Medical Staff, Performance Improvement, National Patient Safety Goals, and Leadership demonstrated to the group how intercon-nected many of the Elements of Performance are which reinforced support and collaboration among the team.

The Continual Readiness Steering Committee meets monthly to share knowledge and information and to prepare for any survey-ors who come to DHHA. The Committee has a strong focus on Joint Commission Standards and Regulations however the emphasis is always on patient safety and quality of care. This past year, each month, Chapter Leaders presented the chapters where they provide leadership and oversight to the committee in order to share highlights of the elements of performance seeking input from others when needed for increased success in meeting the standard to enhance patient safety and quality.

TRACERS

Tracers are a method to engage front line staff in order to prepare, educate and encourage direct two way communication con-cerning new quality of care initiatives, Joint Commission Standards, CMS or State Regulations. Tracer methodology is used to help us see whether there is consistent provision of appropriate and safe access to care, treatment, and services. The Patient Safety, Quality and Regulatory Department conduct tracers and encourages nursing and ancillary leadership to conduct them as well.

Department of Patient Safety and Quality Tracers

In September 2015, the Patient Safety and Quality Team (PS&Q) team set new team goals for tracers:

- PS&Q to conduct 30 tracers per month
- Includes hospital inpatient units and clinics that are subject to the Hospital Accreditation Survey
- From September 2015 through December 2015 a total of 110 tracers were completed
- On average, the team speaks to 1-3 staff members during the tracer which results in 200-300 interactions with staff about patient safety and quality

ACCREDITATION

Dissemination of PS&Q Tracer Information
- Monthly Huddle Sheets identifying 1-2 areas of focus are sent to managers:
    - ◊ October: Medication Labeling & Handoffs
    - ◊ November: Universal Protocol & Informed Consent
    - ◊ December: Quality/Performance Improvement & Admission Data Base
- Monthly aggregate tracer information is sent to managers
- Collection of data and display graphs on Gemba Board in the DPSQ
- Monthly report out of trends occur during the Daily Patient Safety Briefing
- Manager feedback is provided when appropriate

Mini-Tracers
Mini-tracers are subject specific such as patient rights, plan of care, or universal protocol. They are intended to be quick tracers that frontline staff can perform and learn from.
- In 2015, a total of 567 Mini-Tracers were documented.
- In 2016, the mini-tracers will be edited and updated to reflect new standards and information.

Patient Safety Rounds
Patient Safety Rounds (PSR) were created to contribute to an environment that is safe for our patients, visitors and staff. These rounds are generally completed by charge nurses.
- Topics that are evaluated include monitoring of isolation signs, completion of white boards, medical equipment cleaning, staff knowledge of CAUTI, discharge planning, immunization status, hall egress status, patient identification and hand hygiene.
- In 2015, staff logged in 1006 Patient Safety Rounds.
- In 2016, efforts will continue to ensure that PSR are relevant and effective in creating a safe environment,

ENVIRONMENT OF CARE (EOC)
The Environment of Care pertains to every single employee, patient and visitor at DHHA. During 2015, a significant amount of time was devoted to:
- New Employee Orientation was updated
- The annual mandatory training was updated with an interactive module. Interactive learning is a hands-on approach to help employees become more engaged and retain more material
- Radiology rolled out a new electronic tracking mechanism to monitor lead aprons
- Education was provided to staff regarding waste disposal guidelines, pertaining to infectious waste, Resource Conservation and Recovery Act (RCRA), sharps, chemotherapy, Protected Health Information (PHI), recyclables and regular trash
- DHHA Safety Representatives in collaboration with nursing became more involved with EOC rounds throughout the inpatient areas
- The Service Animals and Pet Therapy policies were reviewed and updated
- The 2nd Annual Safety Fair was held in September. This fair gives employees the opportunity to ask questions and receive more information/education on safety issues throughout the organization. Staff learned more about the proper areas to call for emergencies, fire extinguisher training and safe limits with kids, garage safety and severe weather information.

Related to emergency preparedness, DHHA focused on two large initiatives. The first was to change all emergency codes to "Plain English Codes." This change was done based on a recommendation from the Colorado Hospital Association to better empower staff, visitors and patients to know what is happening in an emergency and be able to protect themselves. As a part of this initiative, new badge cards and Emergency Quick Reference Guides were distributed throughout the agency. The second initiative undertaken by the Safety Office was to continue the robust drill and exercise schedule that has been established over the years. In 2015, the Safety Office conducted the following drills and exercises:
- 4 Hospital Command Center Set Up Drills
- 2 Code Pink Drills
- 2 Methadone Clinic Relocation Drills

ACCREDITATION

- 1 First Responder Exercise
- 1 Administrator on Call Table Top Exercise
- Tornado drills at all ACS clinics
- 1 Mass Decontamination Full Scale Exercise
- 2 Active Shooter Fill Scale Exercise (DHHA and DHHA East Grand)

Many lessons learned around processes were noted during the exercises and improvements were made following each drill.

TRAUMA SURVEY

The American College of Surgeons and CDPHE conducted an on-site Adult Level I Trauma Program Verification Survey in February 2015. The surveyors were rigorous in the review and as expected did help us identify opportunities for improvement. They praised Denver Health for our outstanding morbidity and mortality rates, clinical breadth, innovative care, and excellence in the care of the injured. Multiple other strengths were cited including our trauma research and publication activities, which shape trauma care throughout the nation. Through this true team effort, DHHA was re-designated as a Level One Trauma program with some deficiencies requiring a re-survey in 2016.

27-65 BEHAVIORAL HEALTH SURVEY

The Colorado Department of Human Services, Office of Behavioral Health (OBH) conducted an on site visit on December 10, 2015 to ensure compliance with 2 CCR 502 1, Volume 21 CDHS Behavioral Health Rules, "Rules and Regulations for the Care and Treatment of Persons with a Mental Illness," and the Office of Behavioral Health's "Procedure Manual for the Care and Treatment of Persons with a Mental Illness." The OBH had two minor recommendations requiring one Plan of Care. OBH found DHHA to be in compliance with all rules, regulations and policies and stated that it "values the work and dedication of DHHA and the resulting quality of service provided."

APPENDIX A: COMMITTEE STRUCTURE

Draft

Denver Health Committee Structure

April, 2015

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

CEO and Executive Staff

Concern Resolution Committee

Medical Staff Executive Committee

By Laws Committee
Medical Education Committee
Ethics Committee
Nominating Committee
Allied Health Credentialing
Research Committee
Credentialing and Privileging

Chief Quality Officer

Executive Committee For Patient Safety & Quality

Continual Readiness
Clinical Practice Committee
Risk and Quality Advisory Board
Medical Quality Improvement Committee (MQIC)
Departmental M&M Conferences
Infection Control and Prevention Committee
Emerging Infections Disease Committee
Perioperative Quality
COR O Committee
Transfusion Committee
Emergency Preparedness

Chief of Clinical Operations

Chief Medical Officer

Directors of Service

OR Products Committee

Pharmacy and Therapeutics (P&T)
P & T Steering
Pharmacy Practice Committee
Corrections
Antimicrobial
Medication Immunization
Medication Admin Forum

Critical Care Committee
Perioperative Services Steering Committee
Behavioral Health Committee
Maternal / Child Committee
Complex Discharge Committee
Trauma Committee
Peds Trauma PI Committee
Trauma PI Committee

Medical Operations Council

Chief Ambulatory Officer

ACS Central Management Team

Ambulatory Quality Improvement Committee

AQIC Workgroups

Policies and Procedures Committee

Chief Patient Experience Officer

Customer Service Committee
Grievance Committee
Patient and Family Advisory Council

Joint Strategy Team

Chief Nursing Officer

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

SPD Steering Committee

Chief Human Resources Officer

Education Leadership Committee
HR Joint Commission Compliance Committee
Workplace Violence Task Force

Chief Operating Officer/ Chief Acceleration Officer

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
Governance and Data Planning
Meaningful Use Steering

Chief Financial Officer

UM Committee

Revenue Cycle Committee

Environment of Care Committee

Facilities Committee

Chart Legend
Operations Reporting Relationship
Quality and Safety Reporting Relationship

APPENDIX B: GLOSSARY OF TERMS AND ABBREVIATIONS

A-B

ACS...Ambulatory Care Services
AHRQ....................Agency for Healthcare Research and Quality
AIU.................................Adoption, Implementation and Upgrade
AMC...Academic Medical Center
AMI...Acute Myocardial Infarction
APU...Annual Payment Update
AS...Antimicrobial Stewardship
AUCC...Adult Urgent Care Center

C

CABG...Coronary Artery Bypass Graft
CAD...Coronary Artery Disease
CAP...Community Acquired Pneumonia
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 Improvement Team
CDPHE.......................Colorado Department of Public Health and Environment
CHA...Colorado Hospital Association
CHG...Chlorhexidine Gluconate
CMS................The Centers for Medicare and Medicaid Services
COPD.............................Chronic Obstructive Pulmonary Disease
COR Zero...............................Cardiac or Respiratory Zero
COSH.....................Center for Occupational Safety & Health
CT...Computerized Tomography
CY...Calendar Year

D

DHHA................................Denver Health and Hospital Authority
DRG...Diagnosis-Related Group
DPSQ.........................Department of Patient Safety and Quality

E

eCQM...................................Electronic Clinical Quality Measures
ED...Emergency Department
EDU...Electrodiagnostic Unit
EH...Eligible Hospitals
EHR...Electronic Health Record
EOC...Environment of Care
EP...Eligible Professionals
EVS...Environmental Services

F

FMEA.....................................Failure Modes and Effects Analysis
FFY...Federal Fiscal Year

G

GPRO...Group Practice Reporting Option

H

HAC...Hospital-Acquired Condition
HAP...Hospital Acquired Pneumonia
HAPU.....................Healthcare Acquired Pressure Ulcer
HAI.................................Healthcare-Associated Infections
HBIPS.....................Hospital-Based Inpatient Psychiatric Services
HCAP.................................Healthcare Associated Pneumonia
HCAHPS...............Hospital Consumer Assessment of Healthcare Providers and Systems
HCPF.................Colorado Department of Health Care Policy and Financing
HCW...Healthcare Workers
HEN.................................Hospital Engagement Network
HF...Heart Failure
HIT.................................Health Information Technology
H&P.................................History and Physical
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
IPF PPS.......................Inpatient Psychiatric Facilities Prospective Payment System
IPFQR...................Inpatient Psychiatric Facility Quality Reporting
IPPS.................................Inpatient Prospective Payment System
IQR.................................Inpatient Quality Reporting
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
MIPS.............................Merit-Based Incentive Payment System
MU...Meaningful Use

N

NDNQI..............National Database of Nursing Quality Indicators
NETEC.................National Ebola Training and Education Center
NHSN.................................National Healthcare Safety Network
NICU.................................Neonatal Intensive Care Unit
NORE............Nursing Outcomes, Research, and Evidence-Based Practice Department
NPSG.................................National Patient Safety Goal

APPENDIX B: GLOSSARY OF TERMS AND ABBREVIATIONS

O

OBH...Office of Behavioral Health
OBHS.............................Outpatient Behavioral Health Services
OPPE......................Ongoing Physician Performance Evaluations
OPPS...........................Outpatient Prospective Payment System
OR...Operating Room
OQR...Outpatient Quality Reporting

P

PC...Perinatal Care Conditions
PCR..Polymerase Chain Reaction
PCU..Progressive Care Unit
PFS..Physician Fee Schedule
PHI..Protected Health Information
PI...Performance Improvement
PI..Principal Investigator
PICC...................................Peripherally Inserted Central Catheter
PM...Pain Management
PN..Pneumonia
POA..Present on Admission
PQRS.....................................Physician Quality Reporting System
PSQ..Patient Safety and Quality
PSI...AHRQ Patient Safety Indicator
PSI.......................................Patient Safety Intelligence Reporting
PSR..Patient Safety Rounds
P&T...Pharmacy and Therapeutics
PY..Program Year

Q

QA..Quality Assurance
Q&A..Quality and Accountability
QRUR.................................Quality and Resource Use Report

R

RCRA...........................Resource Conservation and Recovery Act
RFI...............................Recommendation For Improvement
RMADE........Rocky Mountain Association of Diabetes Educators
RN...Registered Nurse
RPN...Risk Priority Number
RRT..Rapid Response Team

S

SCIP...Surgical Care Improvement Project
SD...Standard Deviation
SICU...Surgical Intensive Care Unit
SIR...Standardized Infection Ratio
SSI...Surgical Site Infection
STK...Stroke

T

THA/TKA...........................Total Hip and Total Knee Arthroplasty
t-PA... Tissue Plasminogen Activator
TPN...Total Parenteral Nutrition
TJC..The Joint Commission

U

UA...Urinalysis
UHC.....................................University HealthSystem 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*
VSA...Value Stream Analysis
VTE.......................................Venous Thromboembolism

APPENDIX C: INDEX

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All Site Content

Welcome Delaney, Denise ▼ | My Site | **My Links** ▼ | ⑦

🏢 Department of Patient Safety and Quality

| Denver Health Pulse 2007 | General Information ▼ | Care Providers ▼ | Employee Services ▼ | Education & Training ▼ | eHealth Services | **Internal SubSites** | Executive Portal | Provider Portal |

Site Actions ▼

Denver Health Pulse 2007 > Internal SubSites > Department of Patient Safety and Quality > All Site Content

All Site Content

View All Site Content

Lists
- Department Directory

Patient Safety and Quality
- About Our Team
- Awards & Recognition
- Our Team
- Our Vision and Mission
- Our Department Directory
- DPSQ Org Chart
- DPSQ Project List
- DPSQ Strategic Plan
- Exec PSQ Committee Report Submission Portal
- Procedural Informed Consent Documents

Committees
- Clinical Practice Committee
- Diabetes Education
- Daily Patient Safety Briefing
- Education and Quality Improvement Committee
- Executive Committee for Patient Safety and Quality
- Medical Quality Improvement Committee
- New Provider Seminar
- PQO Committee
- PS&Q All Staff Meeting

Quality Reports
- PSQ Pillar Metrics
- Inpatient Medication Reconciliation
- Outpatient Medication Reconciliation

Organizational Charts

📑 Create   View: **All Site Content** ▼

Name	Description	Items	Last Modified
Document Libraries			
📄 2009 NPSG Audit Form	Monthly 2009 NPSG Audit Form	1	5 years ago
📄 2011 Annual Report		1	4 years ago
📄 Accreditation Manager		2	5 years ago
📄 Clinical Practice Committee		64	2 years ago
📄 Daily Patient Safety Briefing		30	75 minutes ago
📄 Department of Patient Safety and Quality Staff Members		1	5 years ago
📄 Diabetes Education		71	22 hours ago
📄 Documents	This system library was created by the Publishing feature to store documents that are used on pages in this site.	52	6 minutes ago
📄 Education and Quality Improvement Committee		74	13 months ago
📄 Executive Patient Safety Quality Committee		482	23 hours ago
📄 FAQ		1	5 years ago
📄 Forms		2	5 years ago
📄 Images	This system library was created by the Publishing feature to store images that are used on pages in this site.	4	4 years ago
📄 Inpatient Medication Reconciliation		114	2 months ago
📄 JC 2008 Survey	Evidence of Standard Compliance Measures of Success	2	5 years ago
📄 JC Continual Readiness		13	5 years ago
📄 JC PPR 2007	PPR Documents	6	5 years ago
📄 JCR Action Plan	JC Action Plan Status Updates	1	5 years ago
📄 Medical Quality Improvement Committee		29	2 weeks ago
📄 National Patient Safety Goals		2	5 years ago
📄 National Patient Safety Goals 2008		4	5 years ago
📄 New Provider Orientation		43	6 months ago
📄 Our Contacts		0	5 years ago
📄 Our Publications	THESE ARE INTENDED FOR INTERNAL DENVER HEALTH EDUCATIONAL PURPOSES. DO NOT PRINT FOR DISTRIBUTION OR EMAIL OUTSIDE OF DENVER HEALTH.	36	4 years ago
📄 Outpatient Medication Reconciliation		120	2 years ago
📄 Pages	This system library was created by the Publishing feature to store pages that are created in this site.	0	5 years ago
📄 PDSA		3	5 years ago
📄 Posters		0	4 years ago
📄 PQO Committee		1	2 years ago
📄 PQO Committee Meetings		0	2 years ago
📄 Procedural Informed Consent Documents		53	2 weeks ago
📄 PS&Q All Staff Meeting Minutes		12	7 days ago

All Site Content

📁 PSQ Pillar Metrics		3	2 years ago
📁 Quality and Safety		6	5 years ago
📁 Tracer Mini Questions		13	5 years ago
📁 Tracer Reporting		45	5 years ago
📁 Tracers	Tools and Facilitators	471	5 years ago

Picture Libraries

📷 Department of Patient Safety and Quality		11	3 years ago

Lists

📋 2014 Annual Report		0	7 months ago
📋 2015 DPSQ Annual Report		0	10 minutes ago
📇 Contacts	Use the Contacts list for information about people that your team works with.	0	5 years ago
📋 Department Directory		0	2 months ago
📋 DPSQ Project List		103	4 months ago
📅 Events	Use the Events list to keep informed of upcoming meetings, deadlines, and other important events.	2	5 years ago
📋 Exec PSQ Committee Report Submission Portal		0	3 months ago
📋 Mini Tracer eForm		159	5 years ago
🔗 Other Interesting Sites	Use the Links list for links to Web pages that your team members will find interesting or useful.	10	6 months ago
📋 Our Team		0	5 years ago
📋 Projector Checkout Requests		77	2 years ago
🔗 Staff Links		4	3 years ago
☑ Tasks	Use the Tasks list to keep track of work that you or your team needs to complete.	0	16 months ago
📋 Tracer List of Units		30	5 years ago
📅 Tracer Schedule		67	5 years ago
📋 Tracer Type List		18	5 years ago
📋 Video Education	Video playback will be effected by network and video size. This video was compressed and reformatted for the best playback speed through our network and as such fast forwarding the video will not work like a DVD. The lag time will be noticeable.	1	5 years ago
☑ Workflow Tasks	This system library was created by the Publishing feature to store workflow tasks that are created in this site.	0	5 years ago

Discussion Boards

💬 General Discussion	Use the General Discussion to hold newsgroup-style discussions on topics relevant to your team.	0	5 years ago

Surveys

📋 Posey Chair Alarm Product Evaluation		11	5 years ago

Sites and Workspaces

👥 Continual Readiness			10 hours ago
👥 Core Measures			6 days ago

Recycle Bin

🗑 Recycle Bin	Use this page to restore items that you have deleted from this site, or to empty deleted items.	1	