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MAY 8–11, 2023

From Worst, Our Way to First: Our Quality Improvement Journey

Jennifer Brettler, DO, CHCQM-PHYADV
CDI Medical Director
ChristianaCare
Newark, Delaware

Kimberly Seery, RHIA, CDIP, CCS, CHDA, CPC, CRC
Coding and Data Quality Associate Director
ChristianaCare
Newark, Delaware

Danielle N. Thompson, MSM, BSN, RN-BC
CDI Quality & Safety Specialist
ChristianaCare
Newark, Delaware

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Presented By

Jennifer Brettler, DO, CHCQM-PHYADV, is medical director of CDI at ChristianaCare in Newark, Delaware. With more than a decade of experience in hospital medicine, she also serves as a physician advisor for the utilization management department. She is the liaison between clinical caregivers and the mid-revenue cycle team.

Kimberly Seery, RHIA, CDIP, CCS, CHDA, CPC, CRC, is the associate director of coding and data quality for ChristianaCare Health System in Delaware and Maryland. She has almost 20 years of coding and data quality experience in large academic health systems. She currently sits on the AHIMA Revenue Cycle Practice Council and has served on the CDI Practice Council. She is very active in her local AHIMA chapter and has served as president and president-elect.

Danielle N. Thompson, MSM, BSN, RN-BC, is a CDI quality and safety specialist at ChristianaCare in Newark, Delaware. She has been a nurse for over 20 years and has enjoyed serving the neurological, vascular, orthopedic, trauma, and post-renal/pancreatic surgery specialties at the Johns Hopkins Hospital, University of Maryland Medical Center, and ChristianaCare. She started her caregiver journey at ChristianaCare in 2002 and joined the CDI department in 2016.

Learning Outcomes

- At the completion of this educational activity, the learner will be able to:
  - Define how to leverage a multidisciplinary approach to tackle the most challenging PSI's
  - List the data elements beyond coding that impact your quality metrics and how to improve them
  - Create a playbook for a successful data driven quality improvement plan
  - Identify how to can master quality outcomes

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Who Is ChristianaCare?

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Serving Delaware, Maryland, Pennsylvania, and New Jersey

- Newark Campus
- Wilmington Campus
- Cecil County Campus
- Middletown Campus
- Concord Health Center
- Greenville Campus
- Smyrna Campus

ChristianaCare | GoHealth Urgent Care Centers

120+

Practices & Locations

ChristianaCare

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ChristianaCare

Nonprofit academic health system, serving Delaware, Maryland, Pennsylvania and New Jersey. Delaware's largest private employer and a Top 10 Philadelphia area employer.

Acute Care

- Three hospitals and a freestanding emergency department
- Level I trauma center
- Level III neonatal intensive care unit
- Comprehensive stroke center
- Regional centers of excellence: heart & vascular care, cancer care and women's health

Research and Innovation

- Gene Editing Institute
- Health & Technology Innovation Center
- CareVio virtual care platform
- Institute for Research on Equity and Community Health (I-REACH)

Community Care

- Primary and specialty care
- Home health care
- Urgent care centers
- Community health
- Center for Virtual Health

More than **13,000** Caregivers

More than **280** Residents & Fellows

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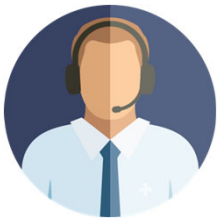

13,048
Caregivers

4,567
Nurses and Care Technicians

1,316
Medical Group Clinicians

288
Residents & Fellows

ChristianaCare Volunteers

Our Extraordinary People

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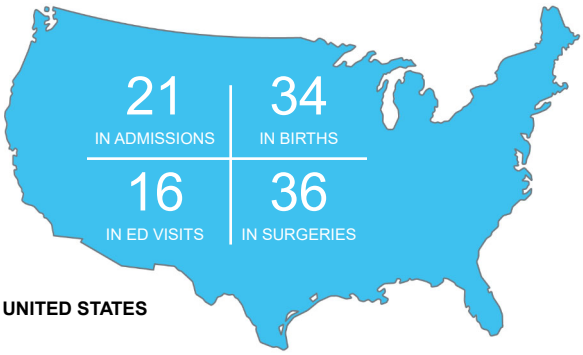
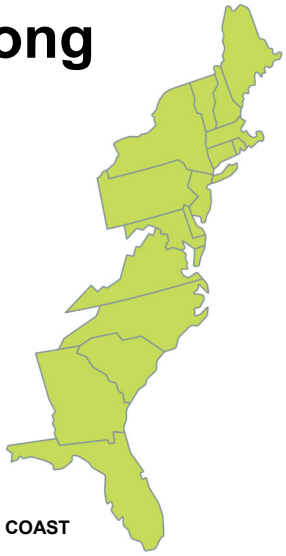
ChristianaCare Ranks Among the Leading Hospitals



13 IN ADMISSIONS | 14 IN BIRTHS

10 IN ED VISITS | 21 IN SURGERIES



Source: AHA Annual Survey Database for Fiscal Year 2019

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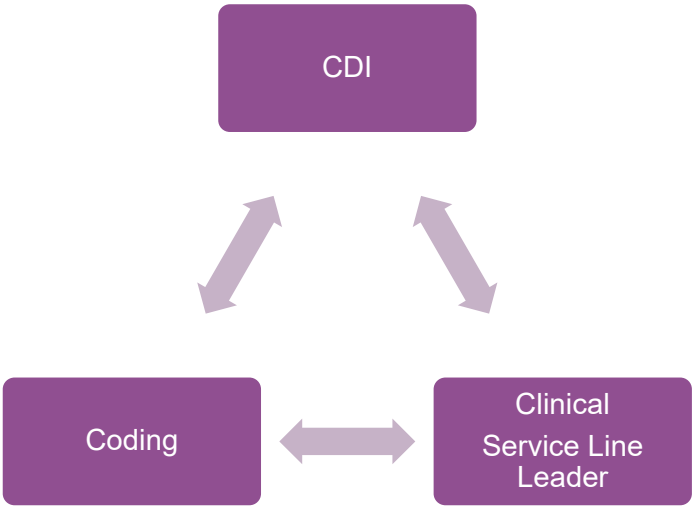
The Need to Evolve Our PSI and Mortality Review Process

Out With the Old

- We had prebill/post discharge review process for
  - PSIs
  - Targeted Mortalities
  - HACs
- Coding, CDI, and a clinical service line leader would review the case depending on the PSI



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Our Journey Begins…

- In 2019 publicly available data showed that we were performing several standard deviations worse than the national mean for PSI-3 and PSI-90.
- Our mortality scores were also not in the top tier hospitals as we would anticipate.
- This data was not reflective of the high-quality care being delivered by our caregivers.
- Clinical care delivery is only one element in the process of clinical quality reporting. Equally important is the accurate representation through documentation and coding.
- Holding charts for an extended period of time for review was always a finance concern.

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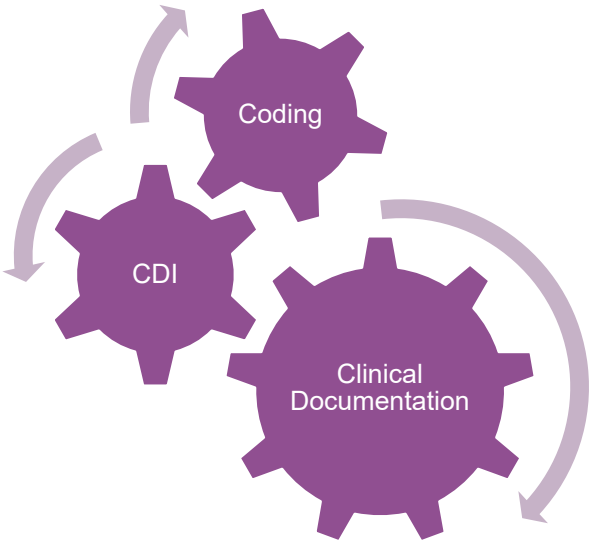
The Problems

- Lack of physician engagement
- Lack of awareness beyond coding and CDI about our PSI and mortality data
- Perception that it was a “coding” problem
- No feedback loop to frontline providers
- Coding and CDI did not have a direct pathway to a trained physician leader who understood all pieces of the puzzle
- Data anomalies
  - No hospice admission
  - No transfers from other facilities



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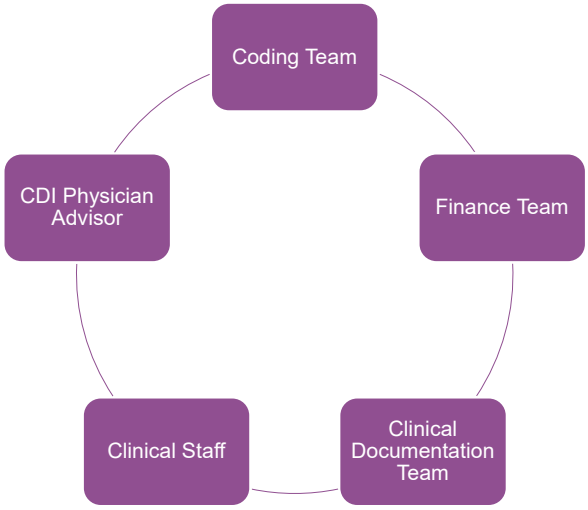
Multidisciplinary Approach

Multidisciplinary Approach to Quality and Safety Optimization



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Multidisciplinary Approach to Quality and Safety Optimization

- Improvement in safety reported using our data analytics tools went from 65th to 8th
- Patient Safety Indicators (PSIs)
  - Agency for Healthcare Research & Quality (AHRQ)
  - Potentially avoidable safety events
  - Set of inclusion and exclusion criteria based on ICD 10 codes
- Quality & Safety reporting
  - Clinical care delivery
    - Systemwide Opportunities for Improvement
    - Metric for Ongoing Provider Performance Evaluation (OPPE)
  - Accurate documentation and coding
    - Ensure correct PDX and POA status for diagnoses
    - Avoid inadvertent capture of PSI
      - E.g. use of term “postoperative” to suggest timing of new diagnosis rather than complication

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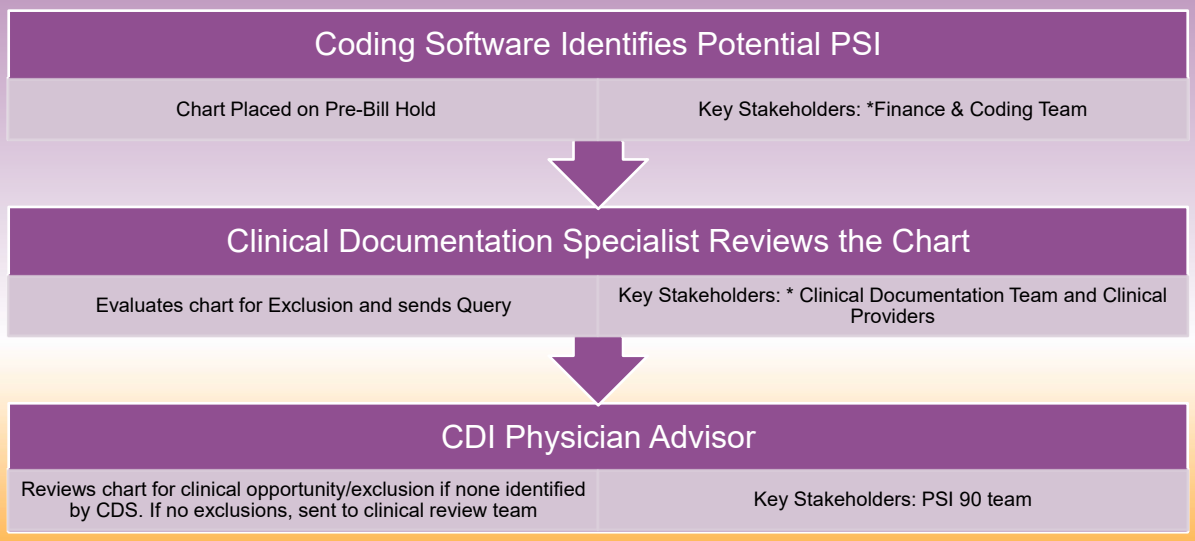
Multidisciplinary Approach to Quality and Safety Optimization



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Multidisciplinary Approach to Improved Mortality Ranking

- Significant Improvement in Mortality Ranking
- Measure Used to Assess Performance: Observed to Expected (O/E) Ratio

$$\frac{\text{Observed Number}}{\text{Expected Number}}$$

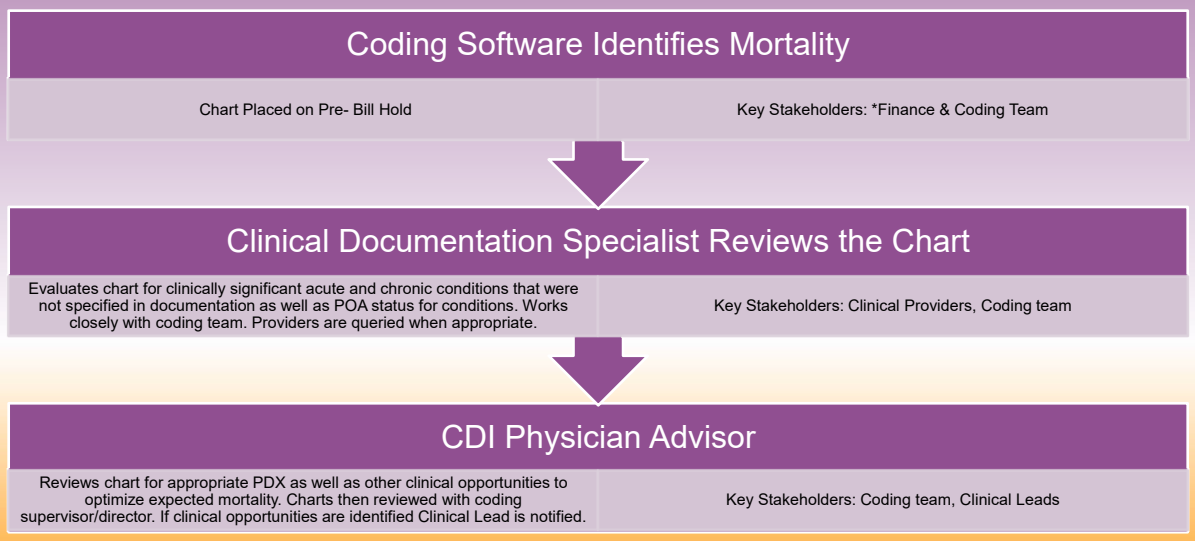
  - Ratio < 1 implies performance better than expected based upon the patient characteristics
  - Ratio >1 implies a performance worse than expected
- How to improve risk adjusted ratio:

$$\frac{\downarrow \text{Observed Number}}{\uparrow \text{Expected Number}}$$

(clinical practice)

(documentation & coding)

Multidisciplinary Approach to Improved Mortality Ranking



Multidisciplinary Approach

- Bi-weekly meetings to review charts and avoid delays
  - Clinical Documentation Specialist
  - Coding Supervisor/Director
  - CDI Physician Advisor
- Query escalation process
- CDI Physician Advisor and coding supervisor participation in monthly PSI 90 meeting
- Quarterly education sessions with clinical providers and review of quality metrics
- Monthly reconciliation of externally reported data to validate all charts were captured in the review process

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Data Demonstrating Success!

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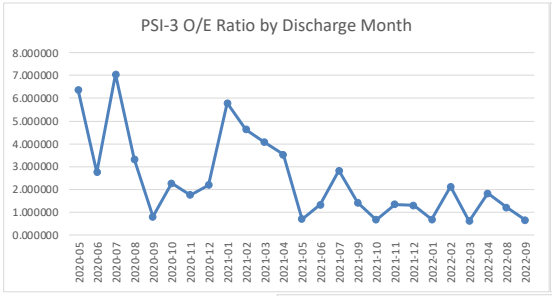
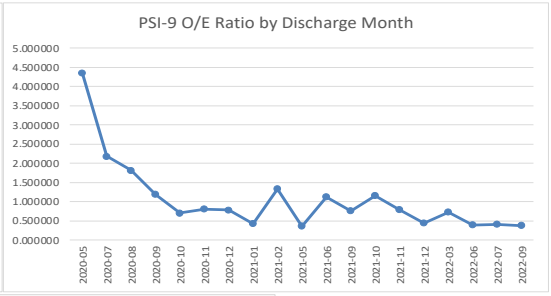
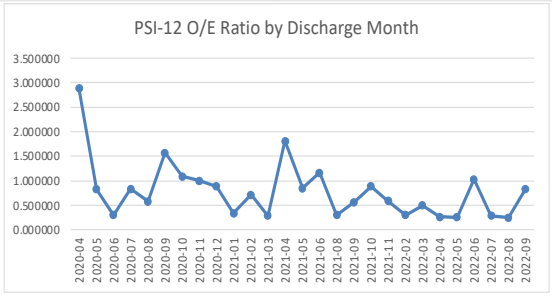
PSI Results



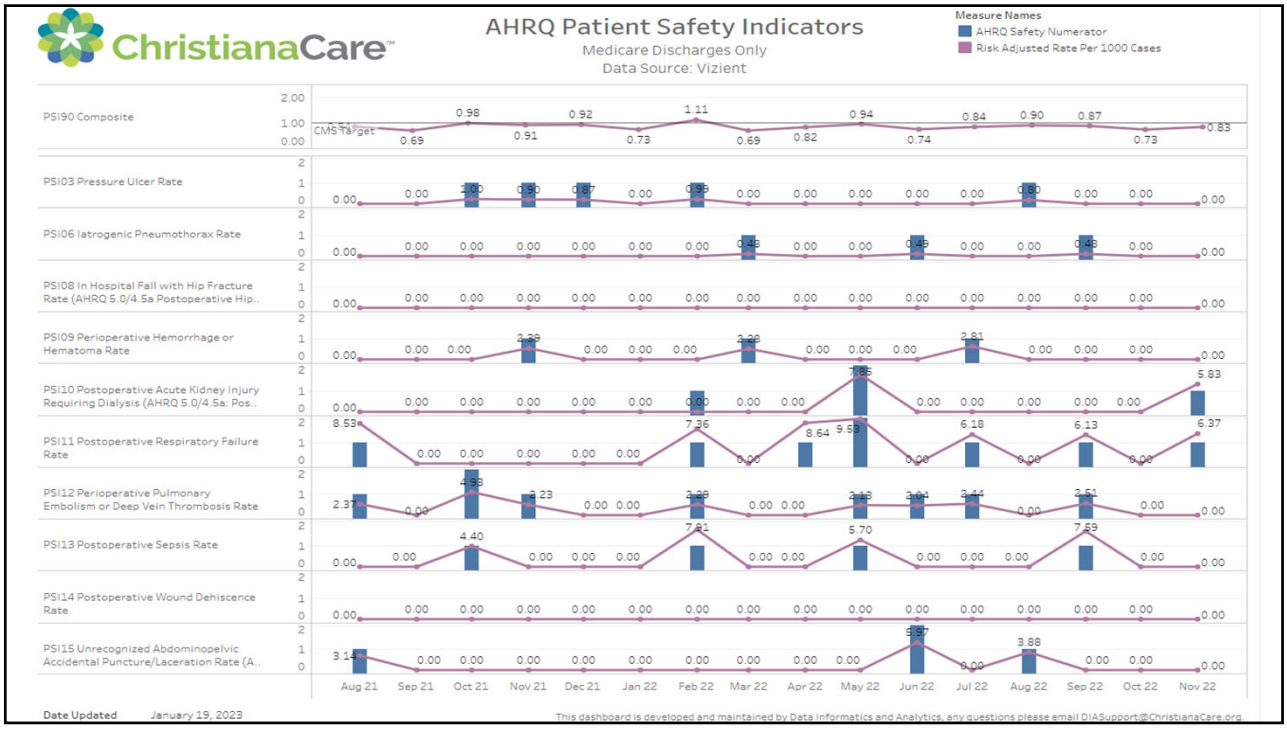




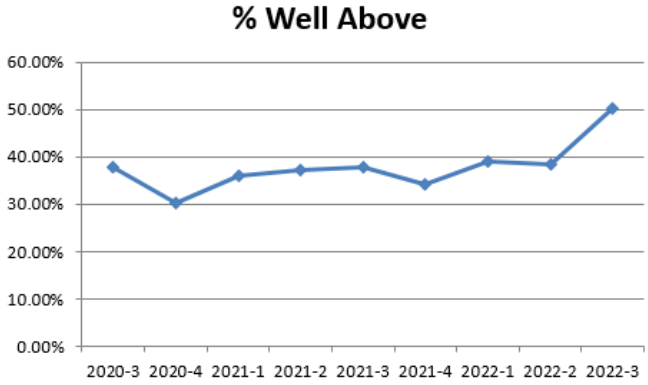
Ranking Compared to Top Academic Cohort – Safety (PSIs)

	Q&A Year		
	2020	2021	2022
Safety	47.41% (65)	66.18% (10)	69.42% (8)

2022
Ranked 8th
out of 107



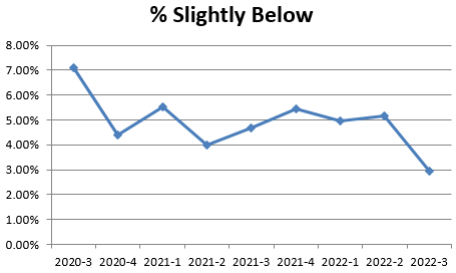
Mortality Data - Unexpected Death (Relative Expected Mortality)



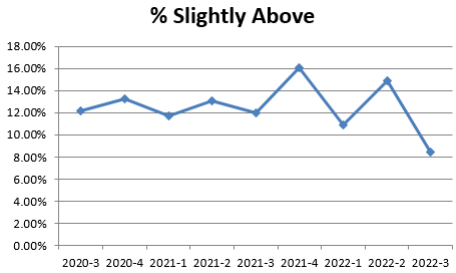
Discharge Quarter	% Well Above
2020-3	37.80%
2020-4	30.29%
2021-1	36.00%
2021-2	37.32%
2021-3	37.67%
2021-4	34.07%
2022-1	39.01%
2022-2	38.39%
2022-3	50.21%

Increase Expected Mortality by 12.41%

Mortality Data – Unexpected Death (Relative Expected Mortality)



Discharge Quarter	% Slightly Below
2020-3	7.09%
2020-4	4.41%
2021-1	5.54%
2021-2	3.99%
2021-3	4.67%
2021-4	5.43%
2022-1	4.96%
2022-2	5.16%
2022-3	2.95%



Discharge Quarter	% Slightly Above
2020-3	12.20%
2020-4	13.24%
2021-1	11.69%
2021-2	13.04%
2021-3	12.00%
2021-4	16.05%
2022-1	10.87%
2022-2	14.84%
2022-3	8.44%

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Case Studies

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Case Study 1 Patient Safety Indicator (PSI) 9

Scenario:

- 72 year old patient with history of End Stage Renal Disease, underwent a deceased donor renal transplant and removal of peritoneal dialysis catheter.
- During the case, her retroperitoneal pelvic soft/fatty tissues were described as “friable” and “coagulopathic” appearing with blood oozing from surfaces. This patient was placed on systemic Heparin related to concern for delayed graft function.
- Systemic Heparin rate was reduced to 500 units/h the following day related to bleeding from closed skin incision and central line placements sites at the chest.

Case Study 1 Patient Safety Indicator (PSI) 9

- 6 days later, the patient returned to the OR for a re-exploration of renal transplant related to “coagulopathic hemorrhage”. An area of hemorrhage from the anti-hilar aspect of the allograft’s middle pole was seen.
- A hematoma was also discovered and was evacuated.
- Postoperatively, patient was transfused with FFP with the indication of coagulopathy.

Case Study 1 Patient Safety Indicator (PSI) 9

- In this case we did have N99.840 *Postporc hematoma of a GU system organ following a GU system procedure* coding and 0W3G0ZZ Control Bleeding in Peritoneal Cavity, Open coded.
- Related to “coagulopathy” being documented several times in the record and PTT >150 while on Heparin (with a titration down), CDI discussed with coding management and re-reviewed to inquire if Coagulopathy/Coagulation defect D68.9 would be appropriate for code assignment.
- There was sufficient support, and this code was added per documentation and the PSI 9 was avoided.

Case Study 2 Patient Safety Indicator (PSI) 12

- 68-year-old patient presented with 2 weeks of worsening knee pain. 3 months prior he underwent and I&D of right hip for septic arthritis and had a recent history of L 3rd toe amputation.
- Upon admission to hospital, patient with mild tachycardia, ranging from 102-114. Two days prior to his procedure, the patient's SpO2 level was 77% on RA. He was placed on 2-3L NC O2.
- He underwent a right hip antibiotic spacer placement, irrigation of right hip, and right knee aspiration for treatment of right hip septic arthritis.

Case Study 2 Patient Safety Indicator (PSI) 12

- Related to persistent hypoxia (prior to and after OR procedure) the patient had a CTA of the Chest PE Protocol and was found to be positive for acute PE in the subsegmental pulmonary artery(ies) of the right upper and middle lobes.
- Code I26.94 Multiple subsegmental pulmonary emboli without acute cor pulmonale-POA N was assigned
- With this patient's presentation of tachycardia, hypoxia, possible decreased ambulation at home with walker due to knee pain, and physician documentation of the incidental finding of PE it was found reasonable to send a query to inquire POA status of the PE.

Case Study 2 Patient Safety Indicator (PSI) 12

- The queried physician indicated it was possible that the PEs were present on admission but noted he could not say for certain related to the timing of the CTA of the Chest, after admission.

Case Study 2 Patient Safety Indicator (PSI) 12

- Code I26.94 present on admission status was changed to W, per query answer and the PSI was avoided.

Case Study 1 Mortality

- 60-year-old with PMHX of obesity, diabetes, hypertension, presented via EMS after cardiac arrest due to polysubstance abuse. Unfortunately, there was poor neurological examination for this patient. MRI findings were compatible with global anoxic injury and his family opted for comfort measures only.

- Mortality review using vendor tool yielded: Expected Mortality (EM): 0.821
- Relative Expected Mortality: Well Above
- Acuity Scale Mortality: Well Above

Case Study 1 Mortality

- There was an opportunity found to increase the EM for this patient to 0.866 from 0.821 with the addition of Diabetes Mellitus Type 2, E11.9

- The patient was ordered Accu Checks routinely and sliding scale insulin per blood glucose reading. This did not require a query and after review the code E11.9 was added.

Case Study 2 Mortality

- 69-year-old man with end stage HF, on palliative home milrinone, presented from home after witnessed cardiac arrest.
- His hx was significant for systolic heart failure, anemia, depression, and cachexia. While hospitalized he suffered an anoxic brain injury related to prolonged resuscitative measures outside of hospital.
- In the ED, patient with decreased blood pressures, to 70s/30s and required pressors.

Case Study 2 Mortality

- After Quality & Safety CDS review, opportunities to increase SOI/ROM and to gain further clarification: cause of cardiac arrest, hypotension solely vs. shock.
- Queries were sent and the cause of cardiac arrest was patient's end stage HF, and the patient was found to have shock.
- This resulted in Other Shock, R57.8 to be coded as a secondary diagnosis and End Stage HF, I50.84 to be the PDX.

Case Study 2 Mortality

- The addition of shock increased this patient's mortality score, accurately reflecting their severity of illness.

- Mortality review using vendor tool yielded: Expected Mortality (EM): 0.971
- Relative Expected Mortality: Well Above
- Acuity Scale Mortality: Well Above

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Lessons Learned

Lessoned Learned – PSIs

- PSIs consider more than just the coded data
  - Admission Source
  - Admission Type
  - Discharge Disposition
- Make sure any diagnosis that meet the exclusion criteria for a PSI are in the first 25 diagnoses and procedures in the first 6. That is all that CMS accepts.
- Diagnoses that providers feel are integral to a condition are often omitted in the documentation but would meet the definition of a codable secondary diagnosis if documented. Query when appropriate.
- A clinical set of eyes see the patient story different then a coder or a CDI professional. Having a physician to review and discuss cases with takes your process to the next level.

Lessons Learned Mortality Reviews

- Can be excluded if admitted to or transferred from hospice
- Diagnoses that do not impact the DRG, Severity of Illness, or Risk of Mortality may impact your mortality score.
  - Leverage Elixhauser Comorbidity Software and invest in making sure it is embedded in your coding application for Coding and CDI to leverage.
  - Utilize internally and externally reported data to track and trend areas of improvement.
  - Use other industry tools and calculators that can be supplied through your data analytics vendor.

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Thank you. Questions?

jbrettler@christianacare.org
kseery@christianacare.org
Danielle.N.Thompson@christiancare.org

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