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MAY 8–11, 2023

CDI Mortality Reviews: Going Beyond SOI/ROM

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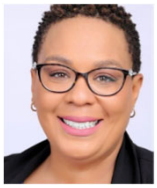
Presented By



Keisha Downes, MBA-HM, RN, CCDS, CCS, is the CDI director for Tufts Medicine hospital system, based in Boston. With an eclectic CDI career, she has held roles as a concurrent CDI reviewer, consultant, educator, manager, and now director. Under her leadership, she helped merge three hospital-based CDI departments into one corporate model and lead the team through a four-system update that included a new EMR. She is a member of ACDIS, HFMA, and AHIMA, and serves on the 2022 ACDIS Leadership Council and 2022/2023 Council Mastermind. She also co-authored the 2022 update of the AHIMA/ACDIS publication *Guidelines for Achieving a Compliant Query Practice*. She has presented at ACDIS conferences on topics surrounding CDI and quality.

Presented By

Jill Horruitiner, BSN, RN, CCS, CCDS, is a pediatric and adult CDI specialist at Tufts Medical Center in Boston. She has over 28 years of nursing experience with a focus on hospice and palliative care. Beginning in 2012, she embarked on a career in CDI for a community hospital in New Jersey. She took advantage of her love of travel and worked as a travel CDI specialist in the Northeast and Midwest. After several assignments, she fell in love with Boston and became a permanent member of the Tufts family in 2019.

Learning Outcomes

- At the completion of this educational activity, the learner will be able to:
  - Differentiate between optimizing DRG/SOI/ROM and optimizing risk variables
  - Explain how to review a mortality case based on risk variables
  - List steps Tufts Medicine has taken to address risk variables across all inpatients
  - Define Tufts Medicine mortality review workflow
  - Define Elixhauser mortality index
  - Identify examples of Elixhauser comorbid conditions
  - Assess outcomes

Tufts Medical Center

About Tufts Medical Center

Tufts Medical Center is an exceptional, not-for-profit, 415 bed academic medical center that is home to both a full-service hospital for adults. Conveniently located in downtown Boston, we're the principal teaching hospital for Tufts University School of Medicine. We offer a level one trauma center with a rooftop helipad, are the largest heart transplant center in New England and our renowned research program ranks among the top 10 percent of independent hospitals to receive federal research funding. Tufts Medical Center is a founding member of Tufts Medicine.

More at www.TuftsMedicalCenter.org.

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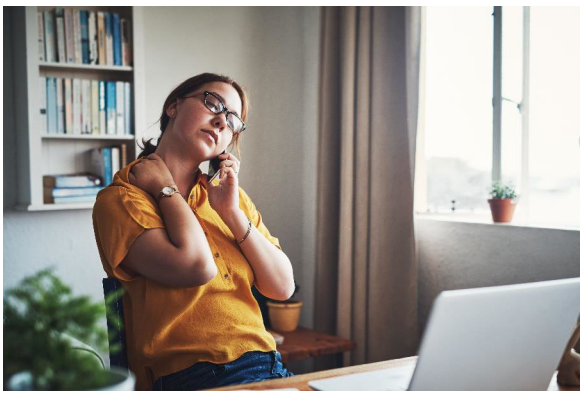
Approaching the Chart Differently

The Dreaded Phone Call

- CMO contacted CDI for second-level review of expired patient
  - The patient's expected mortality did not support the observed
  - Request was to review the medical record to be sure all MCCs were captured
  - Direction was given to be sure severity of illness and risk of mortality were 4/4



Sorry! No Opportunity!

Patient in advanced age admitted from OSH with ischemic stroke that converted w/ hemorrhagic conversion s/p TPA. Arrived intubated secondary to acute hypoxic respiratory failure. On antibiotics for presumed aspiration pneumonia.

Results of the second level review

Very sick patient	Optimized DRGs/SOI/ROM	Confusion as to why the reports would show patient as not sick

Doing a Deeper Dive

- Better understanding of the source report that indicated there was room for opportunity
- Collaborating with the quality department was key
- Tufts Medical Center utilizes Vizient® for healthcare performance improvement

Comparing Optimizing Variables—Example Sepsis 871

Common DRG Opportunity	Top Variables for Sepsis Risk Group
Acute Respiratory Failure	DNR w/o Vent >96 hours or ECMO
Septic Shock	Vent on Admission Day
Type 2 MI	ECMO on Admission Day
AKI	DIC
Infection Source	Tumor Lysis Syndrome

Reviewing Mortality Cases for Risk Variables

Rather than utilizing the CMS CC/MCC list to determine overall patient acuity, the risk models are DRG specific and are utilized based on a constellation of variables to include medical diagnoses, SDoH, transfer status and age.

With few exceptions, variables that reflect the expected mortality of a patient is based on diagnoses present on admission.

Focus should be to accurately reflect the expected mortality of all inpatients, not just those that expire.

Observed vs. Expected Mortality

- Per https://acdis.org/articles/qa-mortality-rate-observedexpected
  - Q&A: Mortality rate, observed/expected June 16, 2016, CDI Strategies - Volume 10, Issue 26
  - Laurie L. Prescott, RN, MSN, CCDS, CDIP, AHIMA-Approved ICD-10-CM/PCS Trainer, CDI Education Director at HCPro in Middleton, Massachusetts

"*The mortality index is defined by the number of patient deaths in a hospital within a ratio that compares actual deaths within a specific time period to expected deaths pulled from risk of mortality data*"

- Observed mortality – number of patients that expired in a timeframe
- Expected mortality – Expected mortality of total patient population measured by medical diagnoses, age, SDoH, transfer status and gender

Interpreting the Mortality Index

Score 1= Expected mortality aligns with observed mortality

Score >1: More patients observed expiration than what was expected

Score <1: Less patients observed expiration than what was expected

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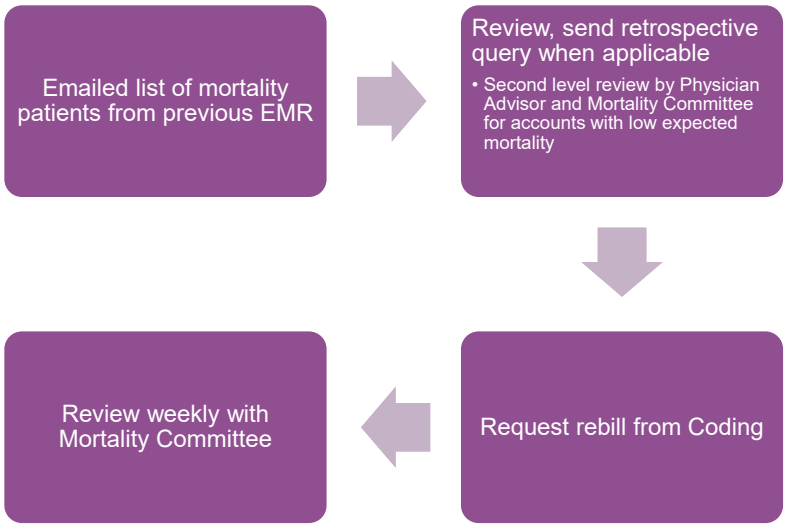
Workflow

Initial Workflow



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Continuing to Optimize Workflow

Recent EMR upgrade to EPIC

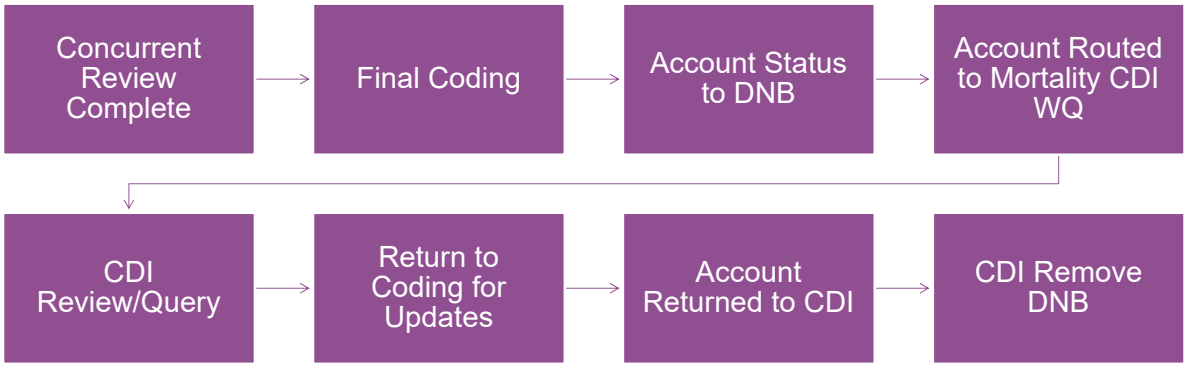
Mortality cases identified automatically triggered by

- Patient Class: Inpatient
- Disposition Code: Expired

New workqueue developed that allows for bill hold after Coding

- CDI now able to have the final coded DRG to compare against risk model
- Queries and coding updates may be may prior to final billing
- CDI able to verify all diagnoses suggested for addition to coding summary added prior to sending account for final billing

Tufts Medicine Expired Chart Review



Workflow Updated With New EMR

- Two CDI Specialists educated to specifically review mortality cases based on Vizient Risk Model Groups
- Agreement with Coding to bill hold morality cases until CDI review complete
- Collaboration with Coding to make certain appropriate DRG assignment
- Entire CDI Team educated on most frequent variables that should be captured/queried for all inpatients
- Utilizing technology to incorporate most frequent variables into auto-sent queries
- Working with Admitting to ensure proper admission status

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Elixhauser Mortality

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Various Mortality Index Measuring Sources

- CMS
- Charlson
- Leapfrog
- Truven
- Vizient
- Healthgrades
- Premier
- Elixhauser
  - Used by U.S. News and World Reports Best Hospitals

What Is Elixhauser Comorbidity Index?

- "The Elixhauser Comorbidity Index is a method of categorizing comorbidities of patients based on the International Classification of Diseases (ICD) diagnosis codes found in administrative data, such as hospital abstracts data."
  - http://mchp-appserv.cpe.umanitoba.ca/viewConcept.php?printer=Y&conceptID=1436#:~:text=The%20Elixhauser%20Comorbidity%20Index%20is,such%20as%20hospital%20abstracts%20data.
- While many risk models are proprietary, the Elixhauser Comorbidity Index is sponsored by AHRQ and is public
- Diagnoses or conditions that co-exist during inpatient hospitalization
- Present on admission status important

Example Elixhauser Comorbidities

Abbreviation (SAS Data Element Name)	Comorbidity Description	Uses present on admission (POA) indicators for assignment?
CMR_AIDS	Acquired immune deficiency syndrome	No
CMR_ALCOHOL	Alcohol abuse	No
CMR_ANEMDEF	Anemias due to other nutritional deficiencies	Yes
CMR_AUTOIMMUNE	Autoimmune conditions	No
CMR_BLDLOSS	Chronic blood loss (iron deficiency)	Yes
CMR_CANCER_LEUK	Leukemia	No
CMR_CANCER_LYMPH	Lymphoma	No
CMR_CANCER_METS	Metastatic cancer	No
CMR_CANCER_NSITU	Solid tumor without metastasis, in situ	No
CMR_CANCER_SOLID	Solid tumor without metastasis, malignant	No
CMR_CBVD	Cerebrovascular disease	Yes
CMR_COAG	Coagulopathy	Yes
CMR_DEMENTIA	Dementia	No
CMR_DEPRESS	Depression	No
CMR_DIAB_CX	Diabetes with chronic complications	No
CMR_DIAB_UNCX	Diabetes without chronic complications	No
CMR_DRUG_ABUSE	Drug abuse	No
CMR_HF	Heart failure	Yes
CMR_HTN_CX	Hypertension, complicated	No
CMR_HTN_UNCX	Hypertension, uncomplicated	No
CMR_LIVER_MLD	Liver disease, mild	Yes
CMR_LIVER_SEV	Liver disease and failure, moderate to severe	Yes
CMR_LUNG_CHRONIC	Chronic pulmonary disease	No
CMR_NEURO_MOVT	Neurological disorders affecting movement	Yes
CMR_NEURO_OTH	Other neurological disorders	Yes
CMR_NEURO_SEIZ	Seizures and epilepsy	Yes
CMR_OBESE	Obesity	No
CMR_PARALYSIS	Paralysis	Yes
CMR_PERIVASC	Peripheral vascular disease	No
CMR_PSYCHOSES	Psychoses	Yes
CMR_PULMCIRC	Pulmonary circulation disease	Yes
CMR_RENLFL_MOD	Renal (kidney) failure and disease, moderate	Yes
CMR_RENLFL_SEV	Renal (kidney) failure and disease, severe	Yes
CMR_THYROID_HYPO	Hypothyroidism	No
CMR_THYROID_OTH	Other thyroid disorders	No
CMR_ULCER_PEPTIC	Peptic ulcer with bleeding	Yes
CMR_VALVE	Valvular disease	Yes
CMR_WGHTLOSS	Weight loss	Yes

Searchable list of measures in the Elixhauser Comorbidity Software
Refined for ICD-10-CM, v2023.1

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Impacting All Documentation

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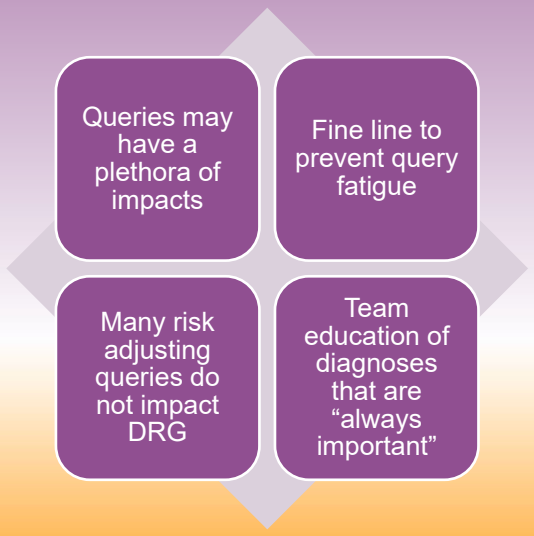
Impacting the Entire Inpatient Population

- Does every inpatient review obtain a mortality risk focused review?

NO!

- Mortality reviews require a different lens when reviewing thus takes longer to perform the review

Determining Query Opportunities



Leaning into Technology

Encoder

- Identifies diagnoses that have an associated Elixhauser score
- Has a separate mortality workqueue

Queries

- Software that sends queries in real time to provider
- Utilizes NLP to identify opportunities
- Frequent Elixhauser and Vizient diagnoses added to query line up

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Measuring Success

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Are We On the Right Path?

- Tracked data to ensure outcomes where consistent with real time reviews
- Identified key stakeholders for ongoing education
  - Hospitalists
  - Intensivists
  - Trauma
  - All providers in which short stay expired patients yielded subpar documentation
- Appropriate transfers?
- Noted significant underusage of Inpatient Hospice
  - Inpatient Hospice patients not included in mortality metrics
  - Inpatient Hospice is not the same as palliative care/ comfort measure only

Ongoing Data Collection

- Mortality index is discussed monthly within quality meeting with C-Suite
- Ongoing collaboration with Quality department for data surrounding performance
- Mortality Committee review of Vizient Data quarterly

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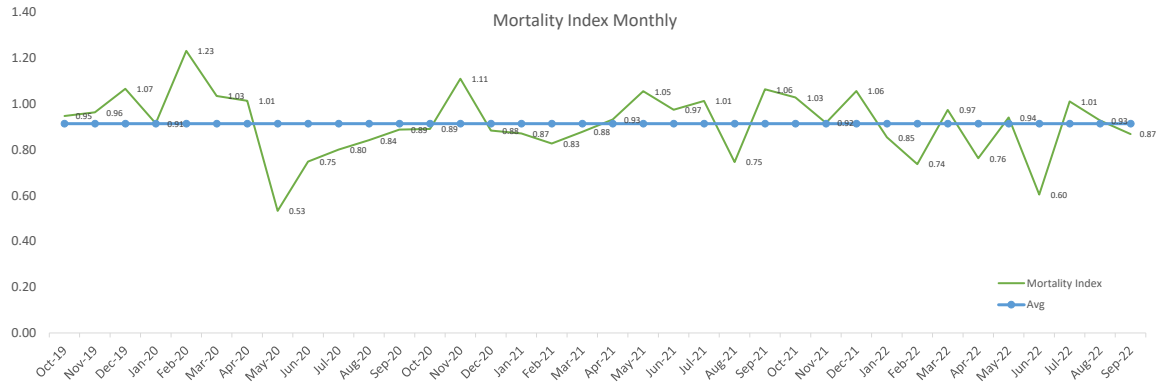

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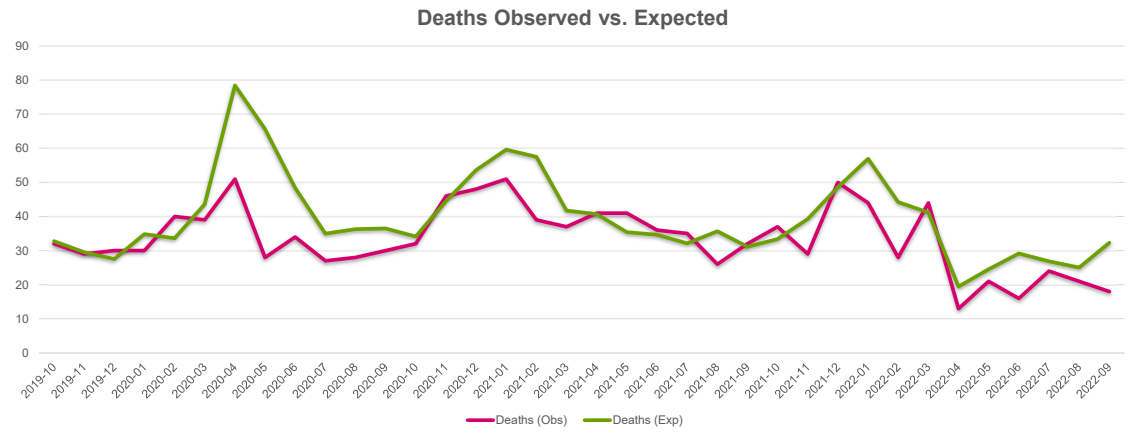

Conclusion

- Understand the platform in which your facilities metrics are based upon
- Determine which department tracks trends for mortality and collaborate with them (For Tufts, it is the quality department)
- If using a company like Vizient, reach out for help! There should be a representative assigned to your facility that may educate and assist
- Monitor annually for variable changes within reporting agencies

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Pop Quiz!

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Question 1

- Does optimizing severity of illness (SOI) or risk of mortality (ROM) translate to optimization of risk variables?

NO!

Question 2

- What should your goal mortality index be?
  - A) >1
  - B) =1
  - C) <1

<1

Question 3

- What are examples of what may impact observed and expected mortality?

Medical Diagnoses

Age

Admission Source

Social Determinants of Health

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Thank you. Questions?

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