

Measuring the Direct and Indirect Impact of a Robust CDI Program

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Presented By



Deb Jones, MSN, RN, currently serves as the director of clinical documentation integrity within the department of quality and safety at Brigham and Women's Hospital, a large academic medical center affiliated with Harvard Medical School in Boston, as well as community-based Brigham Faulkner Hospital. Through a shared governance leadership approach, Jones empowers the CDI team to find innovative ways to achieve departmental and organizational goals. Since taking on this role in 2017, Jones has led the CDI team in tripling the annual financial impact of the program, as well as in improving quality outcome measures with a particular focus on risk adjustment. In addition, Jones has worked to highlight the importance of the role of CDI within her organization by sharing outcome measures and promoting the development of collaborative interprofessional relationships, including the development of CDI service line physician champions from among the talented faculty at Brigham Health. Jones has been a frequent guest on the *ACDIS Podcast: Talking CDI*. She serves on the ACDIS Events Committee and is also a member of the ACDIS Leadership Council. Jones recently received ACDIS' 2021 CDI Professional of the Year award.

Outside of CDI, Jones is also a licensed real estate agent in Massachusetts, she enjoys collecting vintage mid-century modern furniture and art, and is an avid Peloton Power Zone rider.

Learning Objectives

- At the conclusion of this session, listeners will be able to:
 - Define and understand the elements required to build a robust CDI program
 - Understand how to calculate and measure direct CDI Impact at both the case level and program level
 - Distinguish at least three non-financial quality outcomes of a robust CDI program
 - Explain how a robust CDI program can impact non-financial quality outcomes

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Brigham Health

- Brigham Health consists of both Brigham and Women's Hospital, and Brigham Faulkner Hospital, with more than 1,000 inpatient beds and approximately 60,000 annual inpatient stays
- Brigham and Women's Hospital is consistently ranked among the **top 20 hospitals in the nation by U.S. News & World Report**
- The Brigham is internationally renowned for treatment of complex disorders including cardiac care, orthopedics and arthritis, cancer treatment (through our nationally ranked **Dana Farber/Brigham and Women's Cancer Center**), lung care, neurosciences, women's health, and primary care.
- An international leader in basic, clinical and translational research, we are the number two NIH funded academic medical center in the nation.



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Brigham Health

The Brigham Health CDI program consists of 18 CDI specialists across two campuses, as well as one team leader and one director, all reporting to the Brigham Health department of quality and safety.

A little more about us...

- 100% registered nurses with a minimum of a Bachelor's degree
- Brigham CDI specialists have on average >20 years of nursing experience
- Brigham CDI specialists have on average >8 years of CDI experience
- 80% of Brigham CDI specialists are active ACDIS members with active CDI certification (CCDS)
- 2 members are co-chairs of the Massachusetts ACDIS local chapter



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Robust CDI Program

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Evolution of CDI

Past

At their outset, CDI programs traditionally focused on improving the accuracy of the DRG assignment, in an effort to improve reimbursement.



Present

Over the last 20-30 years CDI has evolved. CDS are Pro-active. We are educators, data analysts, collaborators.



Future

Robust approach, Organizations recognize the vital importance CDI plays in organizational health.

Elements of a Robust CDI Program



-  Strong Leadership
-  Team of Empowered Critical Thinkers
-  Transparent Communication
-  Innovative
-  Technology
-  Collaborative
-  Proactive
-  Provider Engagement
-  Evolving

Elements of a Robust CDI Program

Executive level Support

- Strong Leadership
- Team of Empowered Critical Thinkers
- Transparent Communication
- Innovative
- Technology
- Collaborative
- Proactive
- Provider Engagement
- Evolving

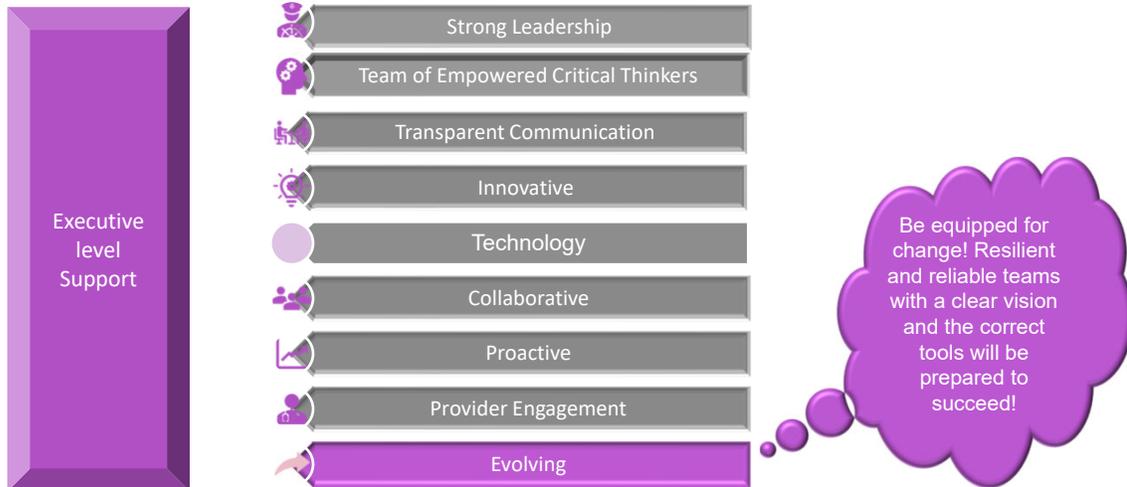
- Critical Thinkers
- Diverse
- Innovators
- Collaborators
- Educators
- Resilient and reliable

Elements of a Robust CDI Program

Executive level Support

- Strong Leadership
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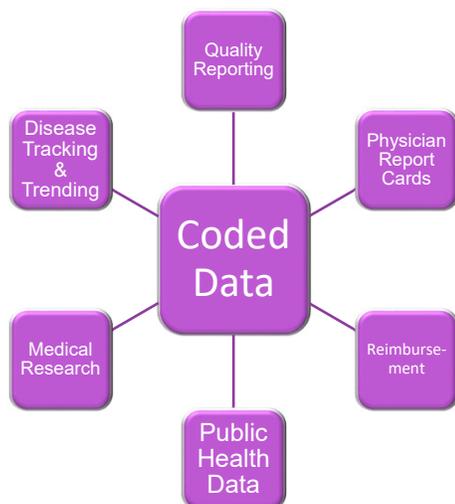
Elements of a Robust CDI Program



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Robust CDI Program: Why It Matters



Robust CDI programs ensure the accurate representation of a patient's clinical status to facilitate translation into coded data. Coded data is then utilized in **quality reporting, physician report cards, reimbursement, public health data, disease tracking and trending, and medical research.**

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Measuring Financial Impact

Why Do We Still Measure Financial Impact?

- Share with executive leadership
 - Fosters support
 - Demonstrates success
 - Transparency
- Supports proposals for program expansion
 - Additional payers
 - Additional FTEs
 - Additional review types
- Validates our sense of purpose
- Shared vision
 - Goal setting

Measuring Per Encounter Reimbursement

Relative Weight: DRG relative weights are estimates that represent the relative average resource intensity per case

Base Rate: Under the IPPS, Medicare assigns each hospital a base payment rate which varies from hospital to hospital.

$$\text{Per Case Reimbursement} = \text{Base Rate} \times \text{Relative Weight}$$

Principal: Z5111 Encounter for Antineoplastic
Chemotherapy
Secondary: C9100 Acute Lymphoblastic leukemia

DRG 839: Encounter for Chemotherapy for Acute
Leukemia
Relative Weight: 1.4872

Hospital Base Rate**: \$8,000
Per Case Reimbursement= Hospital Base Rate x
Relative Weight

Encounter Reimbursement= \$8,000 x 1.4872 =
\$11,897

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Measuring Per Case CDI Impact

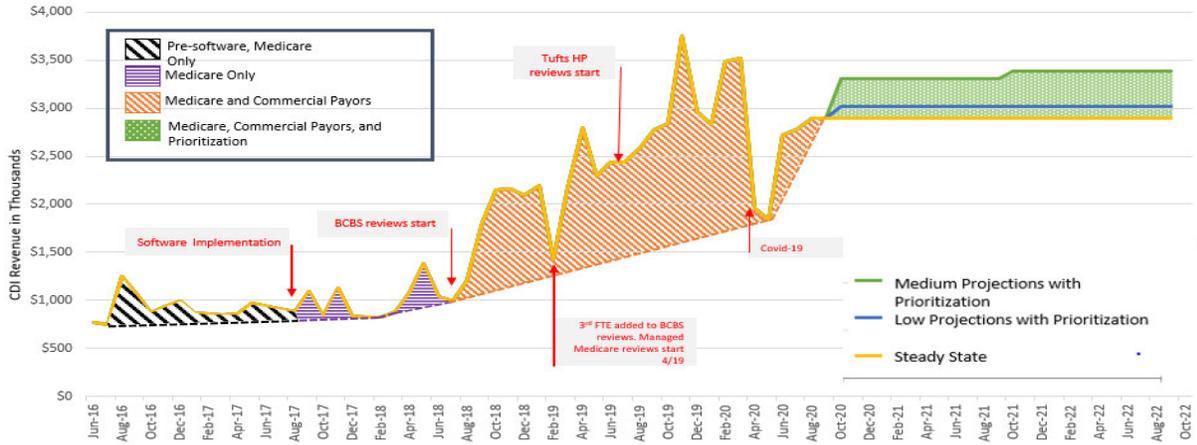
$$\text{CDI Impact} = (\text{Final Coded DRG RW} - \text{Working DRG RW}) \times \text{Base Rate}$$

	ICD-10 Code Assignment	DRG	Reimbursement
No CDI Intervention	Principal: Z5111 Encounter for Antineoplastic Chemotherapy Secondary: C9100 Acute Lymphoblastic Leukemia (S3/R2)	DRG 839: Encounter for Chemotherapy for Acute Leukemia Relative Weight: 1.4872 (S2/R2)	Final Coded RW x Base Rate $\begin{matrix} 1.4872 \\ \times \$8,000 \\ \hline \$11,897 \end{matrix}$
CDI Queried Case	Principal: Z5111 Encounter for Antineoplastic Chemotherapy Secondary: C9100 Acute Lymphoblastic Leukemia (S3/ R2) E46 Protein Calorie Malnutrition (S3/R1) E883 Tumor Lysis Syndrome (S4/R4)	DRG 837: Encounter for Chemotherapy for Acute Leukemia Relative Weight: 5.6993 (S4/R3)	CDI Impact (Final Coded RW minus the Working DRG RW) x Base Rate $\begin{matrix} 5.6993 \\ -1.4872 \\ \hline 4.2121 \end{matrix} \quad \begin{matrix} 4.2121 \\ \times \$8,000 \\ \hline \$33,696 \end{matrix}$

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Reporting and Projecting Financial Impact



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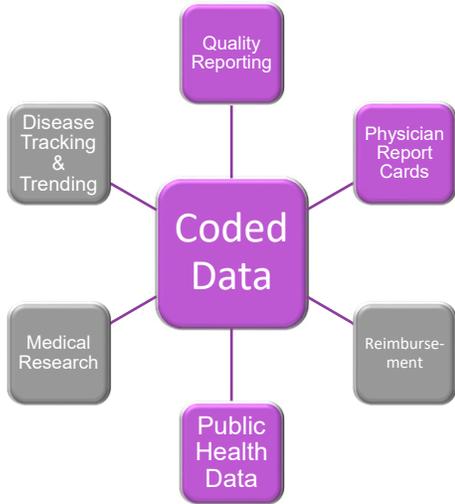


Quality Outcomes



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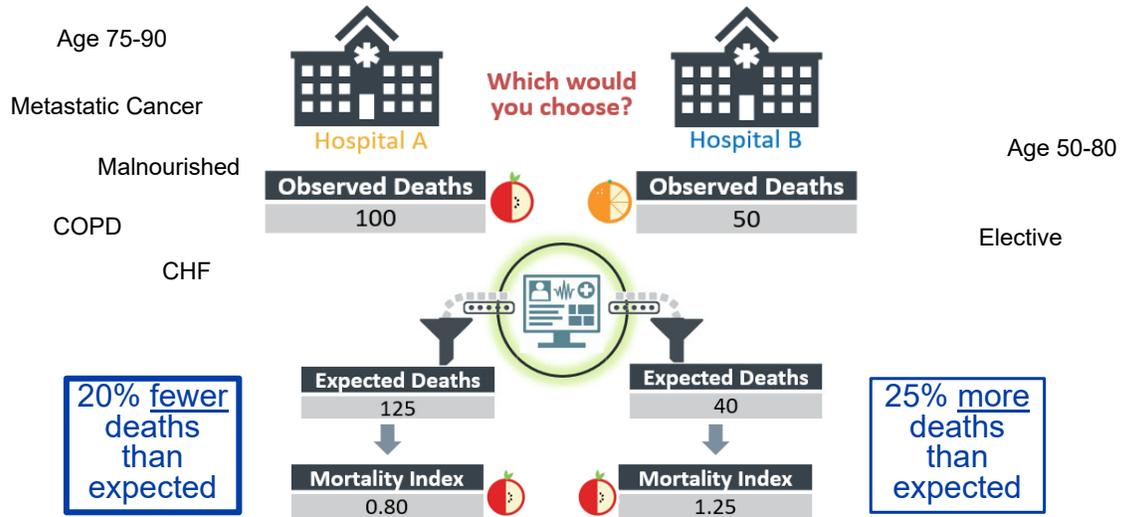
Quality Outcomes



Risk Adjustment

<p>What is Risk Adjustment?</p> <p>Risk adjustment is a statistical method used to accurately and fairly predict healthcare outcomes.</p> 	<p>How does Risk Adjustment Work?</p> <p>Risk Adjustment models take into account underlying health status, as well as other risk factors to 'score' individual patients, providers, and healthcare organizations.</p> 	<p>Why Risk Adjust?</p> <p>Aims to answer the question: "How would performance of various units compare if they had the same mix of patients?"</p> 
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Why Risk Adjust



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Expected Mortality

Observed to Expected (O/E) Mortality

- The ratio of observed deaths to expected deaths
- Used to assess whether the hospital had more deaths than expected (ratio > 1.0), the same number of deaths as expected (ratio = 1.0), or fewer deaths than expected (ratio < 1.0).
- **O/E ratio** is calculated by dividing the observed mortality by the expected mortality.

The number of actual or 'observed' patient deaths in the hospital

The **expected** average of hospitalized patient deaths with a particular illness or condition that are beyond the control of the medical center, such as age, gender and other medical problems

CDI Can Impact 'Expected'

Better than average Expected Mortality is a good gauge of robust CDI Performance

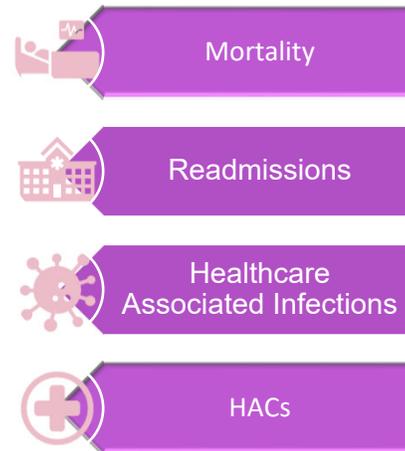
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Value-based Programs

What is the Hospital Value-Based Purchasing (VBP) Program?

Under the Inpatient Prospective Payment System (IPPS), The Hospital VBP Program rewards acute care hospitals with incentive payments for the quality of care provided in the inpatient hospital setting.



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Hospital Profiling: USNWR

Survival methodology (Represents 30% of score)

- 30-Day post-discharge survival
- Medicare patients aged +65
- Medicare claims data
- Rolling three years
- Risk adjusted
 - Elixhauser Comorbidity Index
 - Excludes some low weighted DRGs
 - Excludes transfers

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Improving Elixhauser Capture Rates

Elixhauser Comorbidity Index: Set of 38 comorbidities that are present on admission, not related to the principal diagnosis and likely to influence inpatient mortality

Behavioral, Neurological	Peripheral Vascular Disorders	Solid Tumor malignant
Alcohol Abuse	Valvular Disease	Metabolic
Dementia	Gastrointestinal	Deficiency Anemias
Depression	Liver Disease, mild	Diabetes with Complications
Drug Abuse	Liver Disease, moderate/severe	Diabetes without Complications
Neurological Movement Disorders	Peptic Ulcer with bleeding	Hypothyroidism
Other Neurological Disorders	Genitourinary	Other Thyroid Disorder
Paralysis	Renal Failure, moderate	Obesity
Psychoses	Renal Failure, severe	Weight loss
Seizure & Epilepsy	Hematology & Oncology	Respiratory
Cardiovascular & Vascular	Chronic Blood Loss Anemia	Chronic Pulmonary Disease
Congestive Heart Failure	Coagulopathy	Pulmonary Circulation Disorders
Cerebrovascular Disease	Leukemia	Other
Hypertension with complication	Lymphoma	AIDS/HIV
Hypertension without complication	Metastatic Cancer	Arthropathies
	Solid Tumor in situ	

Indicates highly weighted conditions

Improving Elixhauser Capture Rates

1. Determine baseline capture rates
2. Utilize comparison tool (Vizient, MedPAR, etc) and heat maps
3. Biggest cap + highest weighted + most commonly seen = Target diagnoses
4. Set benchmarks (i.e., 50th, 75th, 90th percentile)

Elixhauser Comorbidity	BWH	BWH	50 th ile	90 th ile
Fluid and electrolyte disorders	9%	19.5%	26.3%	33.2%
Diabetes, uncomplicated	22%	10.5%	12.4%	16.2%
Weight loss	80%	12.4%	9.3%	14.3%
Chronic peptic ulcer disease	16%	0.7%	0.9%	1.4%
Coagulation deficiency	49%	6.3%	6.3%	9.0%
Paralysis	15%	2.7%	4.1%	6.4%
Deficiency anemias	34%	19.8%	21.3%	29.1%
Obesity	42%	12.8%	13.9%	21.7%
Diabetes, complicated	21%	16.1%	20.4%	25.9%
Pulmonary circulation disorders	38%	0.7%	0.8%	1.4%
Alcohol abuse	15%	1.5%	2.3%	4.6%
Other neurological disorders	18%	8.5%	10.2%	12.4%
Drug abuse	35%	0.9%	1.2%	3.5%
HIV & AIDS	36%	0.1%	0.1%	0.5%
Hypertension	38%	54.8%	56.6%	62.6%
Liver disease	18%	3.1%	4.7%	7.5%
Hypothyroidism	60%	19.7%	18.9%	23.0%
Congestive heart failure	24%	13.6%	15.9%	20.7%
Renal failure	32%	23.1%	25.6%	32.5%
Solid tumor w/o metastasis	94%	6.4%	4.2%	6.0%
Metastatic cancer	96%	10.9%	4.4%	8.2%
Chronic pulmonary disease	46%	21.5%	21.9%	27.4%
Lymphoma	91%	3.1%	1.6%	3.0%
Psychoses	26%	1.9%	2.5%	3.7%
Blood loss anemia	69%	1.1%	1.0%	1.5%
Peripheral vascular disorders	24%	7.2%	8.9%	11.7%
Rheumatoid arthritis	92%	6.0%	4.4%	5.8%
Valvular disease	67%	7.9%	6.7%	10.3%
Depression	76%	17.4%	14.4%	19.6%

Takeaways

- In the future state, organizations are not only relying on CDI programs for reimbursement integrity, but also **increasingly CDI programs will play a vital role in overall organizational success.**
- **Strong leadership and a team of empowered critical thinkers** are essential for a robust CDI program
- Demonstrating **CDI financial impact can be a valuable tool** in garnering executive level support
- Transparent communication. **Be on the offense, not the defense.**
- Hospital value-based programs are part of a long-term quality strategy to reform how health care is delivered and paid for and is a step in a move toward paying providers based on the quality, rather than the quantity of care they give patients.

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Thank you.

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