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Observed Over Expected: Our Journey in Improving Mortality Index

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Learning Objectives

- Discuss methods to improve mortality index by streamlining hospice conversion using a multidisciplinary approach.
- Discuss how to leverage the electronic medical record to identify hospice candidates to improve an organization's mortality index metric and documentation.

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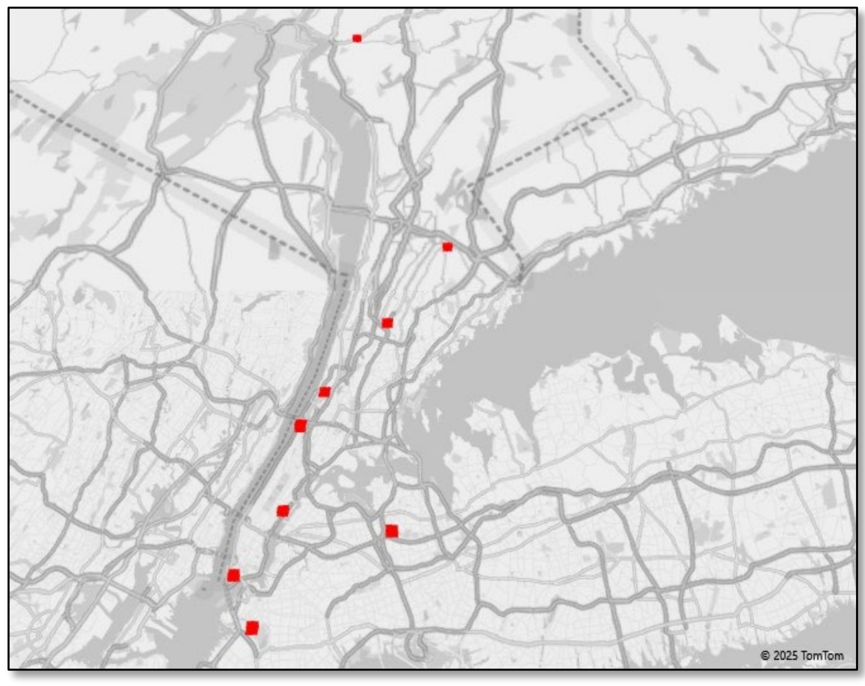
Overview

New York Presbyterian Enterprise



10 Hospitals 150 Ambulatory Areas

50,000 Employees 4,000+ Beds

2 million Annual Visits

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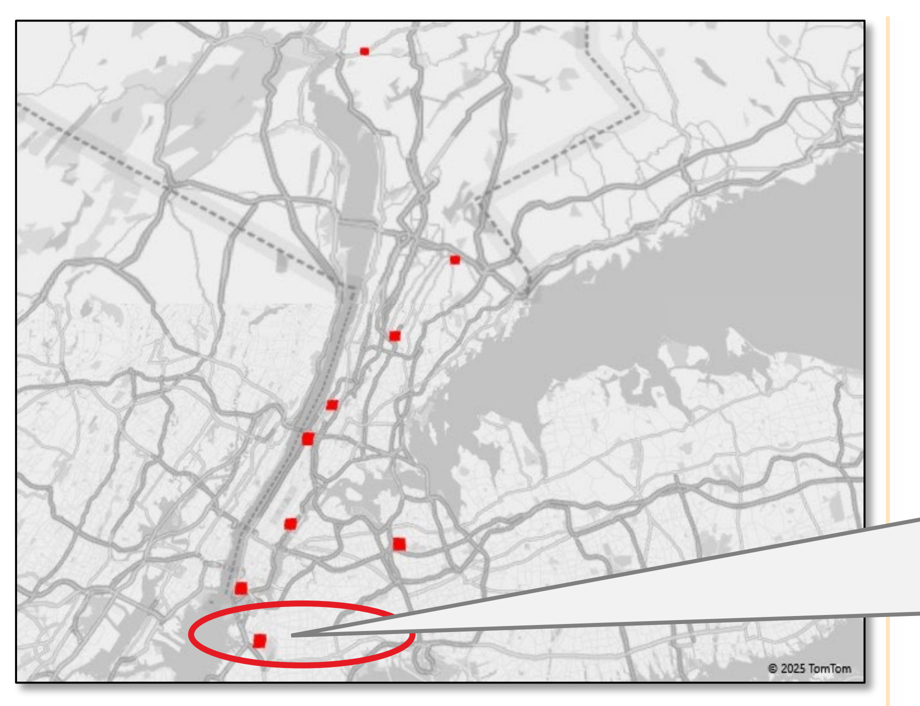


10 Hospitals 150 Ambulatory Areas

50,000 Employees 4,000+ Beds

2 million Annual Visits

New York Presbyterian – Brooklyn Methodist Hospital

651 Beds

500,000 Outpatients

5,000 Inpatient Surgeries

1,600+ Employees

42,000 Inpatients

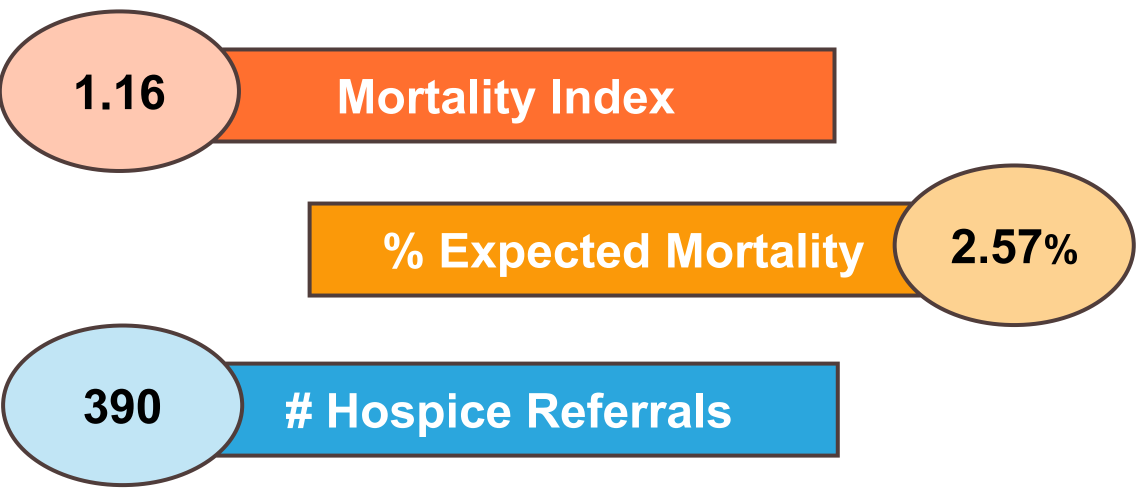
100,000 Emergency Visits

Overview

Problem

Mortality Index is a key quality improvement metric upon which a hospital's performance is compared to peer institutions. It is the ratio of the ***observed number*** of deaths over the ***expected number*** of deaths and encompasses important dimensions of care including appropriate end-of-life care and comprehensive documentation.

At New York Presbyterian – Brooklyn Methodist Hospital, we were faced with the following in 2021:



Overview

Mission Actions

An interdisciplinary taskforce working with Vizient identified **two** target areas to help improve Mortality Index:

Improve Hospice Conversions

Improve Documentation Efforts

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An interdisciplinary taskforce working with Vizient identified **two** target areas to help improve Mortality Index:

Improve Hospice Conversions

Addressing Our Observed:

Enhancing the Relationship with Our Hospice Partner

Education and Awareness Around End-of-life Care

Expansion of Staffing

Engaging Departments and Subspecialties

Improve Documentation Efforts

Addressing Our Expected:

Education and Messaging

Leveraging Our Electronic Medical Record

Reinforcing the Message

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Improve Hospice Conversions

Addressing Our Observed:

- Education and Awareness Around End-of-life Care
- Expansion of Staffing
- Engaging Departments and Subspecialties

Desired Outcomes:

- Improve End-of-life Care
- Improve Outcome Performance
- Improve Provider Engagement and Knowledge

Improve Documentation Efforts

Addressing Our Expected:

- Education and Messaging
- Leveraging Our Electronic Medical Record
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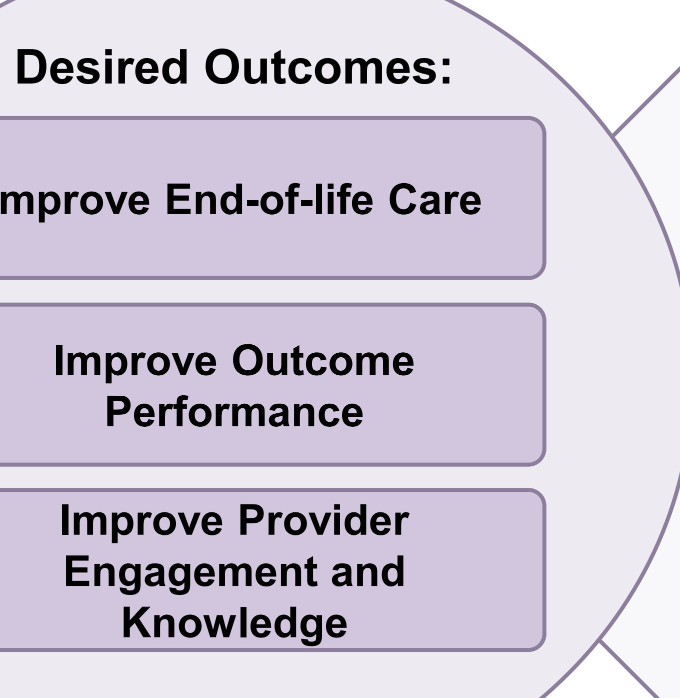


Interventions: Addressing Our Observed

Enhancing the Relationship with Our Hospice Partner

Education and Awareness Around End-of-life Care

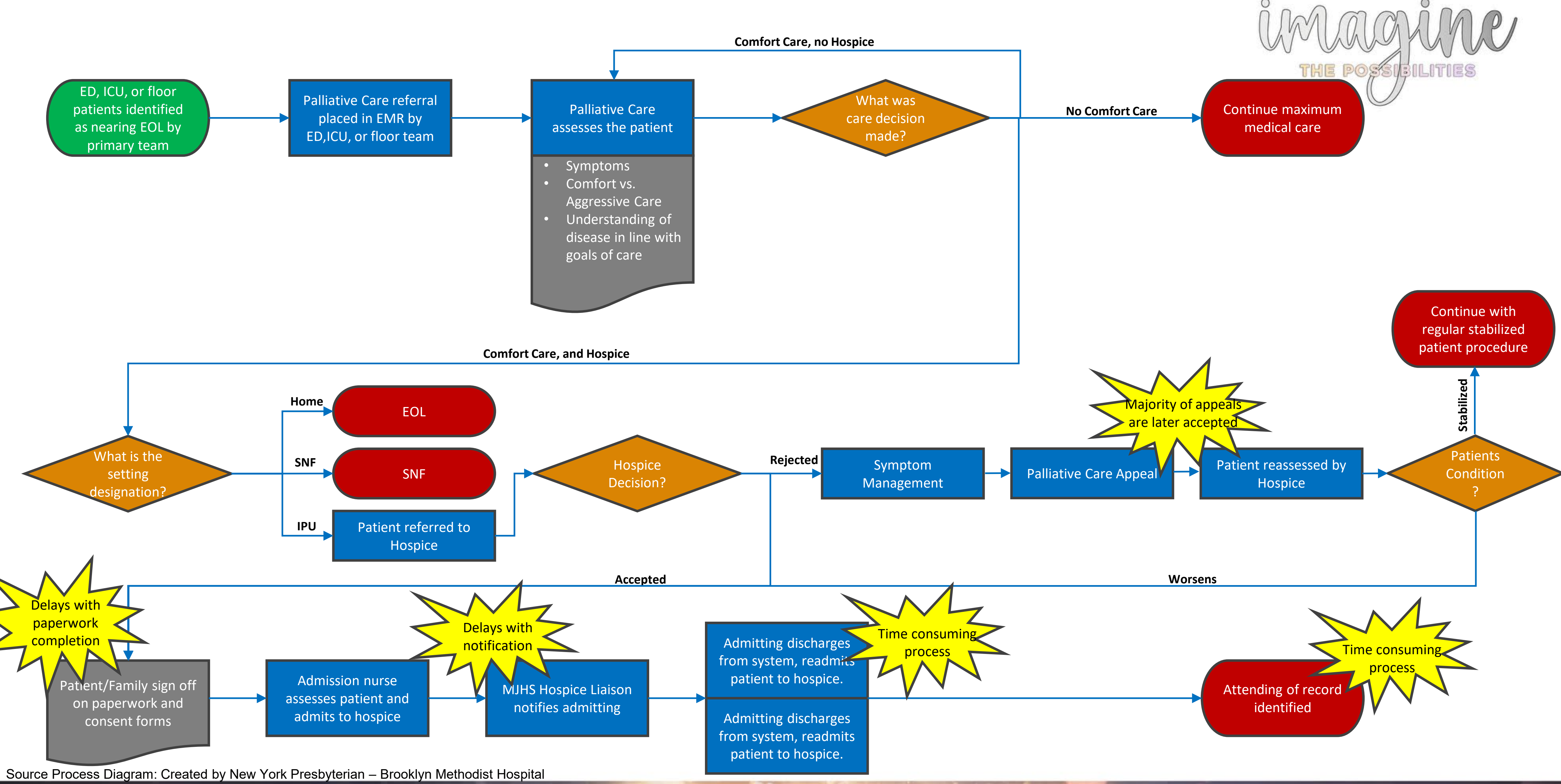
Expansion of Staffing

Engaging Departments and Subspecialties

Interventions: Addressing Our Observed

Enhancing the Relationship with Our Hospice Partner

- Bi-monthly interdisciplinary Comfort Care Rounds
- Monthly interdisciplinary administrative meeting
- Real-time communication and review of barriers
- Monthly review of patients not taken under care
- Understanding and improving hospice conversion process



Source Process Diagram: Created by New York Presbyterian – Brooklyn Methodist Hospital

Interventions: Addressing Our Observed

Education and Awareness Around End-of-life Care

- Training faculty to be communication experts
- End-of-life communication workshop for residents
- Educational sessions to faculty, housestaff, voluntary attendings

Interventions: Addressing Our Observed

Expansion of Staffing

- Expanded the Palliative Care team - hired a dedicated Social Worker, Nurse Practitioner, and Physician Assistant

Interventions: Addressing Our Observed

Engaging with Departments and Subspecialties

- Intensive Care Units (ICUs):
  - Earlier involvement of Palliative Care
  - Palliative extubation protocol
- Emergency Department (ED):
  - Hospice referral/conversion at the time of presentation
  - ED-triggered Palliative Care referrals

Interventions: Palliative Extubation Process

Hospice Best Practices

Hospice Admission and Palliative Extubation

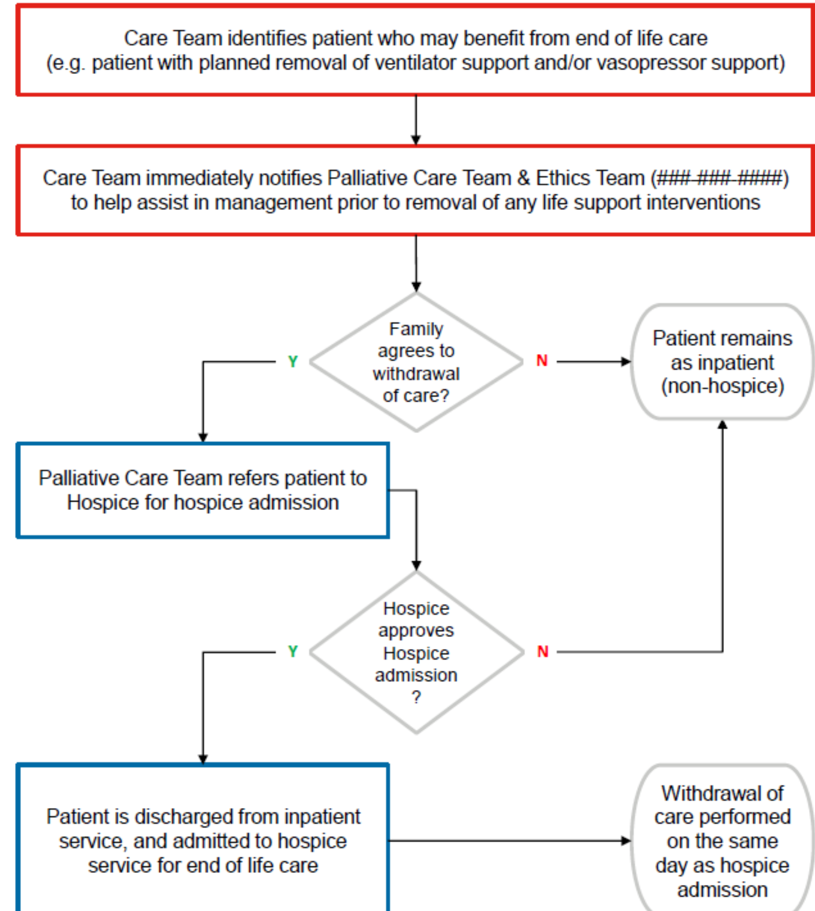
Practice: **Hospice strongly recommends that patients who will undergo a planned palliative extubation be referred and enrolled in hospice <u>at least 1 day prior to extubation AND that a hospice-supported planned extubation be scheduled before 2 pm</u>**

- After enrollment in hospice and prior to extubation
  - Hospice staff will coordinate a meeting with key members of the primary treatment team to:
    - Discuss and plan the involvement of hospice staff at the time of extubation
    - Plan for transfer of the patient to an appropriate inpatient hospice after extubation, if warranted
    - Describe hospice's ability to offer inpatient hospice (known as general inpatient, or GIP, level of care) after extubation only as long as the patient has a need for skilled nursing support to manage an acute symptom or condition
      - Key point: The need for GIP level of care will rarely extend for more than 2-3 days. If the patient stabilizes after extubation and does not meet the regulatory requirements for GIP level of care, hospice may require a change in the venue of care or the family may need to revoke the Hospice benefit. Hospice will discuss these next steps with both hospital staff and the patient's family
  - Hospice staff also will coordinate a meeting with the patient's family to:
    - Clarify the family's goals and answer questions
    - Support an awareness that most patients die within hours of extubation, but some die within minutes and a small group stabilize and survive for days, week or longer
    - Inform the family about the plan should the patient survive for a period of hours after the extubation; this plan may include moving the patient to another unit and continuation of both hospice and hospital care
    - Inform the family about the plan should the patient stabilize for a period of days; this plan may include a change in the venue of care to continue hospice services or possibly revocation of hospice
- Extubation will be performed by the patient's hospital physician and hospice staff will be present

Practice: **Hospice strongly recommends that patients who undergo a planned palliative extubation without referral to hospice <u>not be referred to hospice post-extubation until at least one day after extubation</u>**

- At the time of referral the patient will undergo evaluation by hospice staff to determine whether the patient meets criteria for GIP level of care
  - If not, enrollment of the patient while in the hospital is not possible
  - If the patient is eligible for GIP level of care but the clinical expectation is that GIP level of care will be required for 2-3 days at most, enrollment in hospice will not be completed without prior discussion and agreement about the care plan following this change

Practice: **The families of all patients undergoing palliative extubation can be referred to hospice for bereavement support, whether hospice enrollment occurs.**



Source: Created by New York Presbyterian – Brooklyn Methodist Hospital

Interventions: Palliative Care Referrals in the ED

Is your patient >17 years old?

- No → This patient does not meet criteria at this time
- Yes ↓

Does your patient present with at least one of the following:

•A terminal condition
•Signs and symptoms of active dying or cancer with pain refractory to IV opioids

- Yes → Place a **STAT Palliative Care Consult** and **Call/Secure Chat** the BMH Palliative Care Team*
- No ↓

Does your patient present with any of the following in combination with the existing condition:

•Stable stage 4 cancer
•Difficult-to-control symptoms related to serious illness such as pain, dyspnea, or psychological or spiritual distress
•More than three recent ED visits or hospitalizations with the same symptoms
•Patient or family request for palliative care needs

- Yes → Refer this patient to **Palliative Care Services**
- No ↓

Continue to monitor the patient for any changes in symptoms.

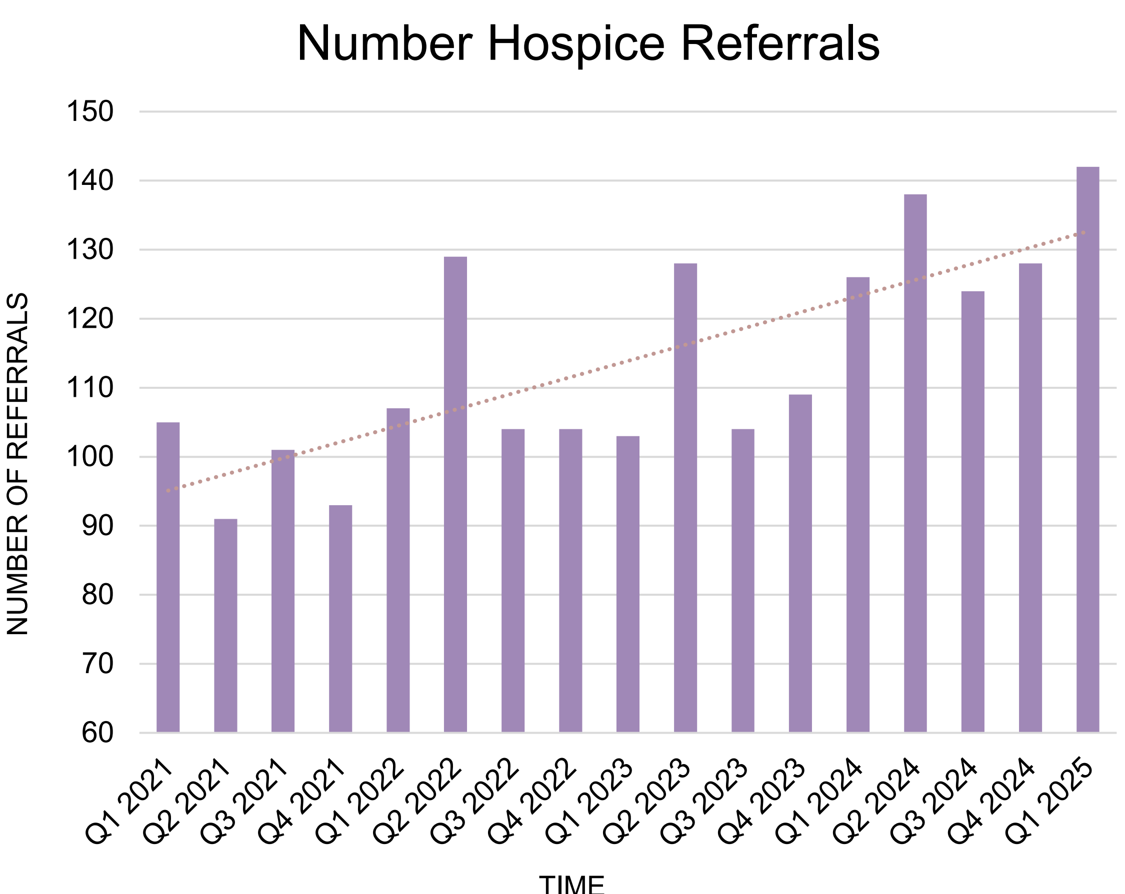
***STAT Palliative Care Consult Checklist**

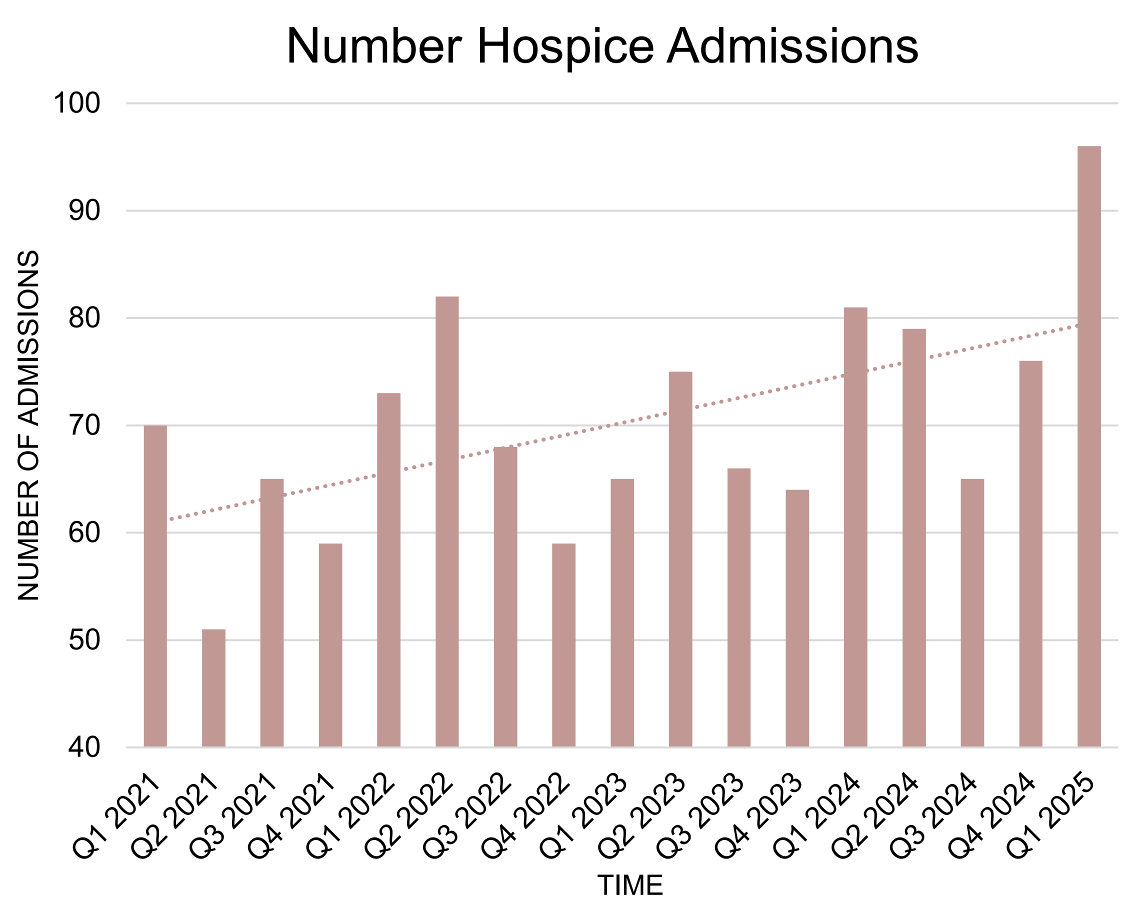
- Place STAT Palliative Care Consult in the EMR ☐
- Call Palliative Care Team Members and/or secure chat "BMH Palliative Care" and ensure confirmation that message was received ☐
- Consult Critical Care Medicine (optional when patient is admitted on Hospice) ☐

Palliative Care is available Monday-Friday 9:00 a.m. – 5:00 p.m.

Source: Created by New York Presbyterian – Brooklyn Methodist Hospital

Results: Hospice Referrals and Admissions





Source: New York Presbyterian – Brooklyn Methodist Hospital Internal Database

Results: % Observed Mortality

TIME	% OBSERVED MORTALITY
Q1 2022	4.36
Q2 2022	2.86
Q3 2022	2.34
Q4 2022	3.11
Q1 2023	2.44
Q2 2023	2.52
Q3 2023	2.37
Q4 2023	2.34
Q1 2024	2.21
Q2 2024	1.78
Q3 2024	2.31
Q4 2024	2.29
Q1 2025	2.66
Q2 2025	2.2

Source: Power BI – Vizient CDB – Adult Inpatient Mortality Dashboard, % Observed, Brooklyn Methodist Hospital (January 2022 – June 2025)

Overview

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Desired Outcomes:

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- Improve Outcome Performance
- Improve Provider Engagement and Knowledge

Improve Documentation Efforts

Addressing Our Expected:

- Education and Messaging
- Leveraging Our Electronic Medical Record
- Reinforcing the Message

Interventions: Addressing Our Expected

Education and
Messaging

Leveraging Our
Electronic Medical Record

Reinforcing the
Message

Interventions: Vizient Fingerprint Report

		Vizient Top 10		Risk Model Performance - Q1 2023				Peer Percentiles					Risk Model Performance - FY 2022				
Site	Variable Description	Top 10 Freq	Top 10 Weight	Adult Cases	With Variable	Percent of Cases	Rank Group	10th	25th	50th	75th	90th	Adult Cases	With Variable	Percent of Cases	Rank Group	% Change from Q1 2023 - FY
BROOKLYN	DNR w/o Vent > 96 Hours or ECMO		2	1,660	248	14.9%	25th-50th	11.1%	14.4%	18.8%	22.2%	26.3%	6,557	934	14.2%	10th-25th	0.7%
METHODIST	Respiratory Failure		4	1,918	149	7.8%	<10th	11.3%	13.3%	16.7%	21.5%	25.3%	8,066	692	8.6%	<10th	-0.8%
	Fluid & Electrolyte Disorders	1	5	4,296	921	21.4%	10th-25th	20.6%	22.9%	27.1%	31.3%	34.0%	17,045	3,474	20.4%	<10th	1.1%
	Shock	4	3	3,752	112	3.0%	<10th	3.5%	4.2%	5.0%	6.2%	7.0%	15,115	460	3.0%	<10th	-0.1%
Peer Cohort:	Malnutrition	2	7	3,284	594	18.1%	>=90th	5.9%	7.6%	9.3%	12.6%	17.0%	12,270	2,416	19.7%	>=90th	-1.6%
Large Specialized	CHF	3	6	3,221	858	26.6%	>=90th	15.3%	17.5%	20.9%	23.9%	25.5%	12,124	3,068	25.3%	75th-90th	1.3%
Complex Care	Cachexia	6	10	2,912	212	7.3%	>=90th	0.8%	1.2%	1.9%	2.9%	4.3%	10,997	667	6.1%	>=90th	1.2%
Medical Centers	Coagulation Defect	7		2,433	48	2.0%	10th-25th	1.9%	2.5%	3.1%	4.5%	6.7%	9,761	259	2.7%	25th-50th	-0.7%
	Liver Failure	10	8	2,784	44	1.6%	<10th	1.8%	2.1%	2.7%	3.2%	4.0%	10,929	162	1.5%	<10th	0.1%
	Metastatic Cancer	8	9	3,249	165	5.1%	50th-75th	3.3%	4.2%	5.0%	5.7%	7.6%	12,670	702	5.5%	50th-75th	-0.5%

Source: Vizient CDB (January 2023 – March 2023), Brooklyn Methodist Hospital

Interventions: Addressing Our Expected

Education and Messaging

- Education to residents and physicians on documentation improvement to increase capture Vizient variables
- Spreading the message through multiple platforms: "CDI Tip of the Week", weekly emails, utilizing existing curricula to embed CDI messaging
- Tracking progress utilizing dashboards displaying Vizient data variables

Interventions: Addressing Our Expected

Leveraging Our
Electronic Medical Record

- Building in escalation pathway via electronic medical record (EMR) secure chat for non-responders
- Creating templates and shortcuts within documentation templates to help with risk variable capture
  - QAST Smart phrase
  - ACP Template

Interventions: The Quality Admission Smart Tool (QAST)

Review of Additional Comorbidities:
Please make sure you document all comorbidities. If you don't agree with a diagnosis, choose "not currently present" or "unable to determine." No need to delete this text, it will not file to the note.

PULM:
Respiratory Failure Acuity and Type

RENAL:
Hypokalemia: K 2.8, Hypokalemia Plan

HEME:
Anemia Etiology: Hgb 9, Anemia Plan

ENDO:
Obesity Class 2: BMI 37.2, Obesity Plan: dose medications for weight

Review of Additional Comorbidities:

PULM:
Acute hypoxemic respiratory failure due to ARDS and asthma, plan as above

RENAL:
Hypokalemia: K 2.8, supplement as needed

HEME:
Acute on chronic anemia: Hgb 9, plan as above

ENDO:
Obesity Class 2: BMI 37.2, dose medications for weight

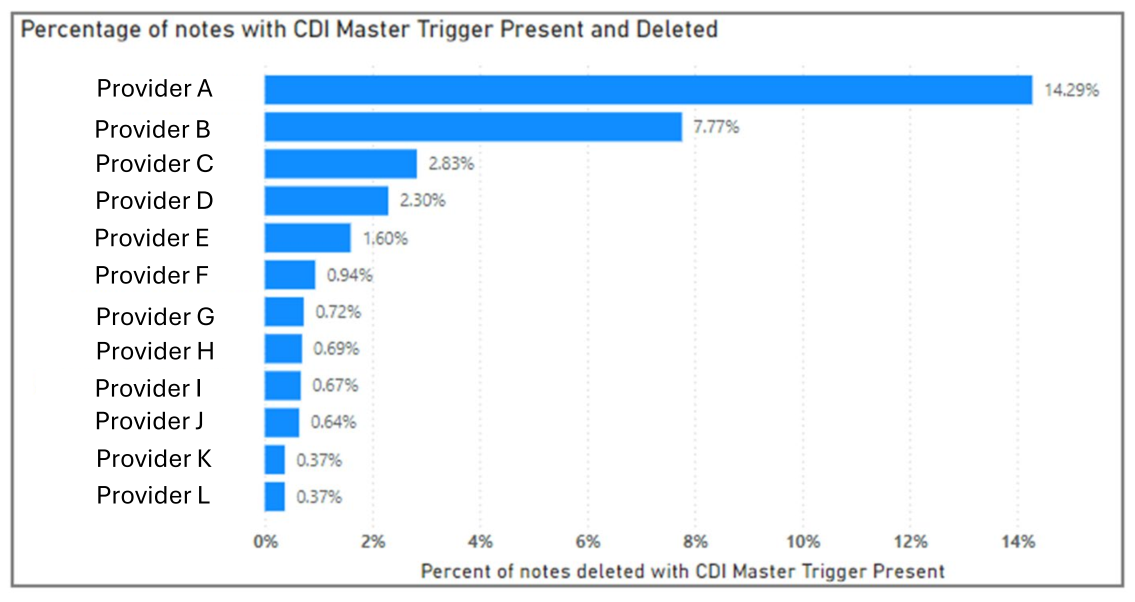
Interventions: Addressing Our Expected

Reinforcing the Message

- Engaging division leadership to hold their faculty accountable in real time
- Review query response rate followed by focused 1:1 feedback to underperformers

Interventions: Effective Answers and QAST Use

Provider Name	Total SDE Triggered	Effective Answers	% Effective Answers	Unable to Determine	% Unable to Determine
Provider A	444	231	52.03%	213	47.97%
Provider B	4,021	3,901	97.02%	96	2.39%
Provider C	404	248	61.39%	156	38.61%
Provider D	40	34	85.00%	6	15.00%
Provider E	172	83	48.26%	89	51.74%
Provider F	28	13	46.43%	15	53.57%
Provider G	41	39	95.12%	2	4.88%
Total	***5,150***	***4,549***	***88.33%***	***577***	***11.20%***



Source: Power BI – QAST Performance Tracker, Brooklyn Methodist Hospital (January 2025 – May 2025)

Results: Effective Answers and QAST Use

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Provider A	444	231	52.03%	213	47.97%
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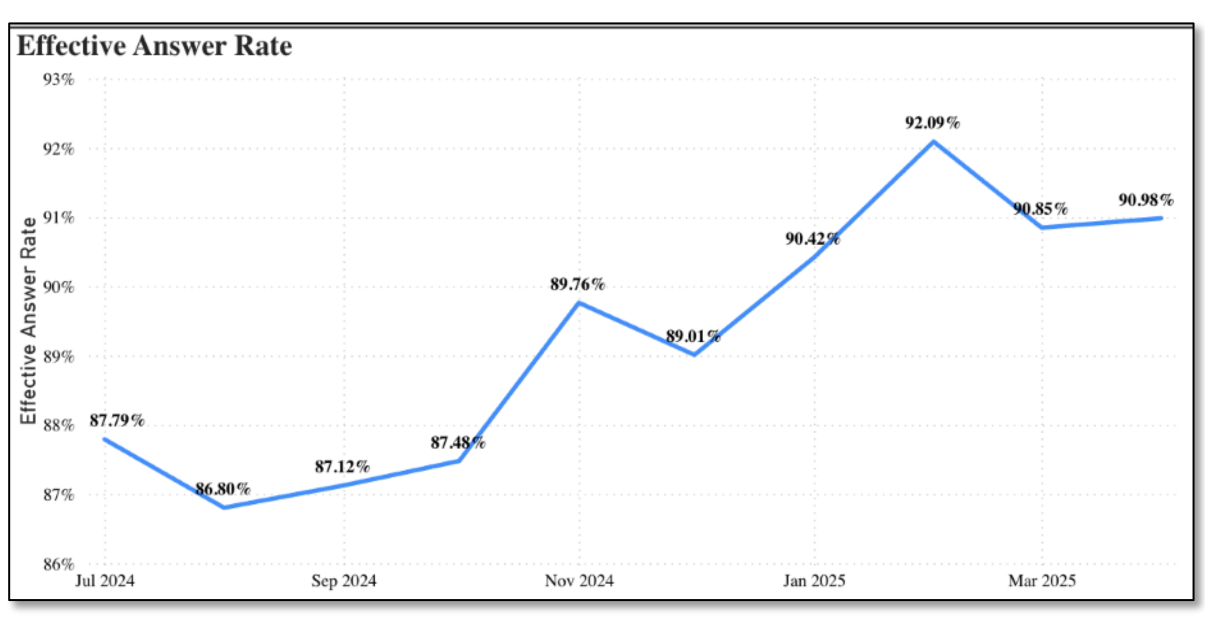

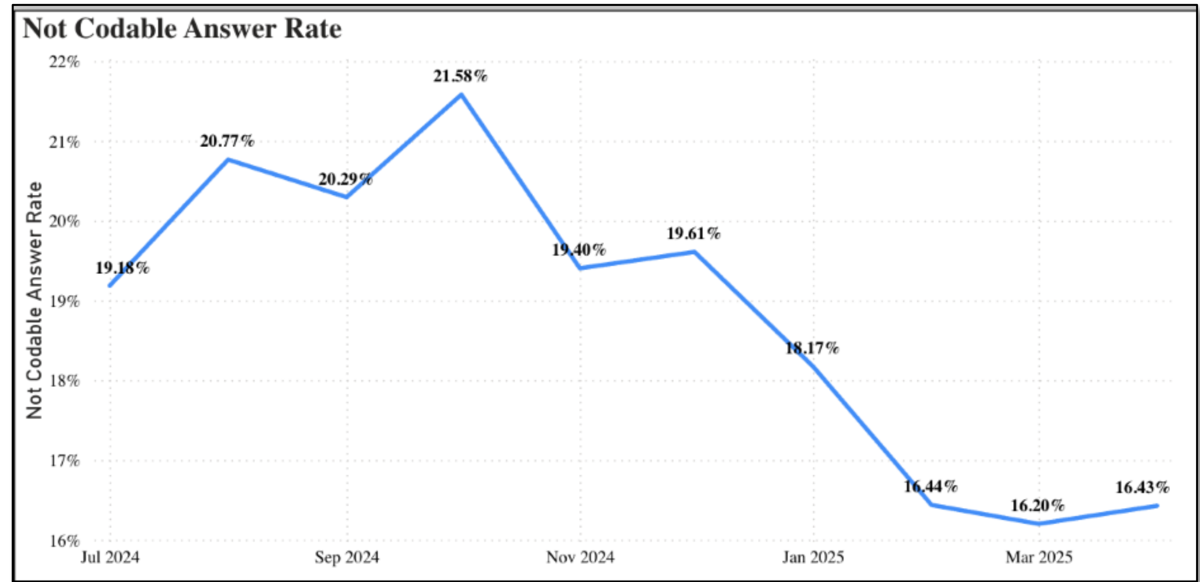

Source: Power BI – QAST Performance Tracker, Brooklyn Methodist Hospital (January 2025 – May 2025)

Results: % Expected Mortality

% EXPECTED MORTALITY

4.70
4.20
3.70
3.20
2.70
2.20

3.35
2.94
2.36
2.65
3.32
3.73
3.56
3.29
4.1
4.2
3.91
4.2
4.78
4.86

JAN-22 APR-22 JUL-22 OCT-22 JAN-23 APR-23 JUL-23 OCT-23 JAN-24 APR-24 JUL-24 OCT-24 JAN-25

TIME

Source: Power BI – Vizient CDB – Inpatient Adult Mortality Dashboard, % Expected, Brooklyn Methodist Hospital (January 2022 – May 2025)

Results: NYP-BMH Mortality Index 2021

TIME	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2021 MI	1.27	0.85	0.87	1.07	0.96	1.05	1.24	1.1	1.15	1.07	1.03	1.19

MORTALITY INDEX (axis: 0.30, 0.50, 0.70, 0.90, 1.10, 1.30, 1.50)

Source: Tableau - Inpatient Adult Mortality Dashboard, Brooklyn Methodist Hospital (January 2021 – December 2021)

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Results: NYP-BMH Mortality Index 2022

TIME	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2022 MI	1.14	1.18	0.86	0.96	0.93	0.86	0.6	0.78	0.9	0.88	1.04	1.05

MORTALITY INDEX: 1.50, 1.30, 1.10, 0.90, 0.70, 0.50, 0.30

Legend: 2021 MI, 2022 MI

Source: Power BI – Vizient CDB – Inpatient Adult Mortality Dashboard, Brooklyn Methodist Hospital (January 2022 – December 2022)

Results: NYP-BMH Mortality Index 2023

MORTALITY INDEX

1.50
1.30
1.10
0.90
0.70
0.50
0.30

0.76
0.8
0.56
0.71
0.79
0.64
0.6
0.69
0.72
0.69
0.73
0.59

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

TIME

2021 MI
2022 MI
2023 MI

Source: Power BI – Vizient CDB – Inpatient Adult Mortality Dashboard, Brooklyn Methodist Hospital (January 2023 – December 2023)

Results: NYP-BMH Mortality Index 2024

MORTALITY INDEX

1.50
1.30
1.10
0.90
0.70
0.50
0.30

0.49
0.47
0.51
0.4
0.35
0.44
0.4
0.53
0.58
0.52
0.42
0.52

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

TIME

2021 MI
2022 MI
2023 MI
2024 MI

Source: Power BI – Vizient CDB – Inpatient Adult Mortality Dashboard, Brooklyn Methodist Hospital (January 2024 – December 2024)

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Results: NYP-BMH Mortality Index 2025

MORTALITY INDEX

1.50
1.30
1.10
0.90
0.70
0.50
0.30

0.55
0.57
0.57
0.54
0.47

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

TIME

2021 MI
2022 MI
2023 MI
2024 MI
2025 MI

Source: Power BI – Vizient CDB – Inpatient Adult Mortality Dashboard, Brooklyn Methodist Hospital (January 2025 – May 2025)

Lessons Learned

Maximizing Resource Utilization

- Appointing a CDI physician partner
- Using successes to advocate for focused staffing expansion
- Building a strong relationship with Hospice partner to improve efficiency

Earlier GOC Discussions

- Shift GOC discussions and referrals to earlier in the hospital course
- Real time discussions of barriers and missed opportunities
- Clear understanding of hospice conversion process

Engagement of All Key Personnel

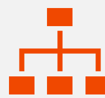
- Consistent messaging and education
- Engaging all specialties at all levels
- Active involvement of leadership
- Tailoring processes to specific departments to achieve mortality goal

Key Takeaways

Understanding Our Processes and Addressing Our Pain Points

Consistent Education and Messaging

Constant Data Review and Reinforcement


Clear Escalation Pathways

Engagement of Leadership and Buy-in of Physicians

Thank you!

- Dr. Baruch Fertel
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- Dr. Anna Goehring
- Dr. Xenia Frisby
- Lisa Linsangan

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- Joanne Russo
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- Sam Sarkissian, Lucy Zhang, Sijia Dong, David Chen & the Analytics team
- The NYP-BMH QPS Team

And many others!

Questions?

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