Centralizing Multi-Hospital Mortality Reviews

IHI 28th National Forum

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Objectives

- Describe the centralized mortality review process used at Northwell Health
- Discuss key findings of the primary and secondary reviews
- Explain how a centralized mortality review process can enhance patient safety, improve quality of care and support value based purchasing initiatives across a multi-hospital organization

The Presenters Have Nothing To Disclose
Key Facts

...The first and largest integrated health system in NY State

- 21 hospitals
- Children's Hospital
- 2 Psychiatric Hospitals
- 4 Nursing/Sub-acute facilities
- Over 450 ambulatory locations
- Over 13,600 affiliated physicians
- 3,900 member physician medical group
- Broad geographic coverage
  - 7 Counties - 10.8 million population
  - Provides care to 4 million persons
  - 27% inpatient share
  - $9.5 billion revenue
  - "A" rated Insurance Company – Over 90,000 members
- 61,000 employees*
- Largest private employer in NYS
- Major academic and research center
- A continuously growing footprint
- Comprehensive and full continuum of care

*Inclusive of affiliates, 58,000 Northwell Health employees
The Dashboard to Our Success

Physician Partnership

- Quality
- Financial Performance
- Patient/Customer Experience
- Population Health
- Community Benefit
- Employee Investment
- Teaching & Research
- Market Growth

90% by 2019

Workforce Engagement
Customer Experience
Mission
Northwell Health strives to improve the health and quality of life for the people and the communities it serves by providing world-class service and patient-centered care.

Vision
The vision of the Institute for Clinical Excellence is to help transform the organization to become the most trusted name in health care.

Clinical Excellence
Clinical Excellence is the result of systems designed to achieve predictable, optimal outcomes that consistently meet or exceed customer expectations.
Guiding Principles

- Patients first, safety always
- The Six Aims of the Institute of Medicine. Healthcare must be:
  1) Safe
  2) Effective
  3) Patient Centered
  4) Timely
  5) Efficient
  6) Equitable
- Teamwork and open, two-way communication promote a culture of patient safety
- High reliability and resilience are essential for optimal patient outcomes
- Individuals make mistakes. Expect them and prepare for them
2016-2017 Key Quality Priorities
To Eliminate All Preventable Harm

- **Lowest Mortality**
  - Reduce Mortality
  - Example: Acute MI, Heart Failure, Pneumonia, COPD, Sepsis, Mortality Review

- **Safest Healthcare**
  - Zero Healthcare-Acquired Conditions
  - Example: CAUTI, CLABSI, C diff, MRSA, SSI

- **Best Value**
  - Evidence-Based Practice
  - Example: Reduced Readmissions, Stroke, Advanced Illness
<table>
<thead>
<tr>
<th>STRATEGIC PARTNERS</th>
<th>BEST VALUE</th>
<th>LOWEST MORTALITY</th>
<th>READMISSIONS</th>
<th>INFECTION PREVENTION</th>
<th>PREVENTABLE HARM</th>
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Lowest Preventable Mortality

3M Grouper Change
Hospice Beds
Documentation
Coding

“The Patient!”

IHI Mortality Tool
Sepsis project
HAC’s (CLABSI, CAUTI)
System-wide Mortality Tool and Data Base
Hospitalist Redesign
Mortality Surveillance
Identify and Prioritize Actionable Initiatives

Issues Identified:
- Mortalities reviewed at individual hospitals
  - No consistent process
  - No database available at any hospital
  - No means to aggregate/analyze data across organization

System Response:
- Patient Safety Program established incorporating Mortality Surveillance
  - Centralized Structure
  - Reliable and Valid Review Process
  - Standardized Surveillance and Second Level Review Tools
  - Internal System Database Created for Entry and Analysis

IOM: To Err is Human 1999
Centralized Standard Mortality Review
‘Digital Autopsy’

13 Hospitals

100% Retrospective MR Review
Our Journey -
Centralized Mortality Review Process

- 2011 IHI Strategic Partnership
  - Expertise
  - Resources
  - Tools

- 2012 Senior Leadership Established a Patient Safety Program
  - Patient Safety Team
    - Experienced, Registered Professional Nurses (RNs)
    - Physician Advisor
  - Medical Record Reviews using the IHI Global Trigger Tool (GTT)
Institute for Healthcare Improvement 2x2 Matrix

This 2x2 Matrix is used to analyze patient mortality based on the assigned level of care at the time of admission, intensive care unit (ICU) or Non-ICU, and whether patients are admitted solely for comfort care.

**Box 1 & 2 Opportunities**
- Advance Directives
- Alternatives to hospital for end of life care
- Clarity of ICU Admission Criteria

**Box 3 & 4 Opportunities**
- Was perfect care rendered?
- If not, could the outcome of death have been prevented?
- Was there a failure to recognize, plan or communicate?

**Legend**
- **Admitted To The ICU?**
  - Yes
  - No

- **Admitted For Comfort Care Only?**
  - Yes
  - No

- **Box 1**
- **Box 2**
- **Box 3**
- **Box 4**
Our Journey - Centralized Mortality Review Process (con’t)

- 2013 Expanded Program
  - 12 acute care hospitals

- Created Initial Mortality Review Tool and Glossary

- Enhanced Mortality Review Tool by Intra-Professional Team (June)
  - Demographics
  - Hospitalization/Readmission/Admit Source
  - Level of care
  - Adverse Events/Infection/Procedural Complications
  - Case Summary, including events leading to expiration
  - Advance care planning/End of Life Care
  - IHI 2x2 Matrix
  - Post-mortem documentation
  - Triggers for second level review

- Developed Web-based Database (KQMI)
- Tested & Revised
- Implemented Across the Organization (October)
First Level
Mortality Review
Process Flow

1. Patient Safety Program
2. Primary Mortality Review (First Level)
   (100% of expirations excluding Peds, Psych, Rehab, Hospice)
3. Data entered into KQMI Mortality Surveillance web tool
4. Variations/issues noted during the review process
   - Yes: Discuss at Patient Safety RN weekly peer-review team meeting for consensus to refer to second level site review
   - No: End review in Mortality Database
5. Referral for second level site review?
   - Yes: Case trigger for second level site review entered into database
     - E-mail notification to Quality Department when primary reviews are completed
     - Second level review initiated at site
   - No:
Second Level Mortality Review Process Flow

1. Patient Safety Program referral for second level review based on “trigger”

2. Mortalities that are referred for second level review are assessed by each Hospital’s Quality Department

3. The appropriate Department or designated physician reviews the case utilizing the standardized second level review tool

4. Final review entered into the electronic database

5. Hospital site reporting and analysis of review for changes in hospital processes, policies, systems, etc.

6. System analysis for trends, areas of focus, potential projects/initiatives

7. Decrease in preventable mortalities, enhance patient safety, and improve quality of care
Triggers for Second Level Review

Criteria:

- Adverse Event contributed or led to death
- Major complication
- New onset medical problem unrelated to disease process
- May meet regulatory reportable event criteria
- Restraint use within 24 hours of expiration (excludes soft wrist restraints/mittens)
- RN determines case needs further review
  - Appropriateness of level of care
  - Failure to communicate
  - Failure to plan
  - Failure to recognize
  - Quality of care issue
Further Enhancing the Process

- Inter-rater Reliability Testing among RNs
  - Percent Agreement 92%-100%
  - Kappa Score 0.6-1.0

- Developed Peer Review Process for RNs to standardize referrals
  - Decreased Referrals from 20% to < 10%
  - Appropriateness of second level referrals increased from 65% in 2015 to 85% in 2016 (Q3 YTD)

- Clarified the Glossary of Terms

- Modified First Level Mortality Review Tool

- Streamlined Medical Record Review

- Development of Standardized Reports with Hospital Access
Report Data (examples)

First Level Review

- Total number of mortality reviews
- Number of referrals for second level (site) review
- Top ten primary diagnoses
- Patient age range
- Admit source
- 24 hour, 7 and 30 Day Readmissions
- Deaths within 24 hours of admission
- Results of the IHI 2x2 Matrix
- Deaths related to an adverse event
- Deaths related to surgical/procedural events
- Referral/timeliness of end of life care
- Triggers for second level review

Second Level Review

- Planning
- Communication
- Recognition
- Documentation
- Level of Care
- Standard of Care
- Preventability
Further Enhancing the Process (con’t)

- Physician Education
  - Great variability in the methods used and the depth of analysis by physicians in the system hospitals
  - To standardize the process, an *iLearn* Module was created
  - Physicians performing Second Level Reviews complete module and short quiz prior to participating in the program
Further Enhancing the Process (con’t)

**iLearn Module Course Objectives:**
- Explain the significance of the IHI 2 x 2 Matrix
- Describe the components of the Medical Record used to conduct the Second Level Review
- Perform a comprehensive “Deep Dive” Second Level Mortality Review
- Answer “Deep Dive” questions pertaining to harm
- Identify pattern of harm such as:
  - Failure to Communicate
  - Failure to Plan
  - Failure to Recognize
Further Enhancing the Process (con’t)

**iLearn Module**
- Takes the physician through a hospital admission detailing how to toggle back and forth between all the stored patient data
- The goal is a thorough exhaustive review of the entire hospitalization

**Mortality Review Process**

I. Review initial First Level Nurse Clinical Summary
II. Review point of access to the Health System
   - Pre-op medical clearance
   - Anesthesiologist evaluation
   - ER admission (check triage sheet, medications, vital signs, lab data on admission)
   - Review the initial level of care ICU/floor
III. Review of the Progress Notes and Consultant Notes
IV. Toggle through the EHR for data not in the progress notes; i.e., nurses notes, flowsheet, vital signs, lab data, medications
V. Complete the electronic based Second Level Review form
Further Enhancing the Process (con’t)

- Evaluation of the Death:
  - Was the death preventable?
  - Was the standard of care met?
  - What was the cause of death?
  - Were there opportunities to improve care in:
    - Communication
    - Care planning
    - Recognition
    - Documentation
    - Level of care
Keys to Ongoing Success

Physician Engagement
- Modification of tools/processes based on elicited feedback
- Sharing of reports/results
- Ongoing Communication

Example:
Quick Tips: Locating the iLearn for Second Level Physician Mortality Course
Key Findings
Key Findings/Results – First Level Mortality Reviews

- 12,502 Reviews conducted from 2014 through Q3 2016

- Top Primary Diagnoses:
  - Sepsis
  - Acute Respiratory Failure
  - Pneumonia
  - Non STEMI / Subendocardial Infarct

- Admission Source of Home (68%)
  - Disproved hypothesis that majority were from skilled nursing facilities
The results from analysis of the IHI 2 x 2 Matrix provided important information about the appropriateness of level of care and care planning.

<table>
<thead>
<tr>
<th>Comfort Care</th>
<th>ICU Admission</th>
<th>Box Definitions:</th>
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<tbody>
<tr>
<td>YES</td>
<td>YES</td>
<td><strong>Box 1</strong>: admitted to ICU for comfort care only</td>
</tr>
<tr>
<td></td>
<td>583</td>
<td><strong>Box 2</strong>: admitted to non ICU for comfort care only</td>
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<tr>
<td></td>
<td>4.7%</td>
<td><strong>Box 3</strong>: admitted to ICU for active treatment</td>
</tr>
<tr>
<td></td>
<td>888</td>
<td><strong>Box 4</strong>: admitted to non-ICU for active treatment</td>
</tr>
<tr>
<td>NO</td>
<td>YES</td>
<td>N= 12,502 Total Mortality Reviews</td>
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<td>4,610</td>
<td>Note: Percent may not add to 100.00% due to rounding.</td>
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<td>36.9%</td>
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<td></td>
<td>51.2%</td>
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<td>Box 3</td>
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Data Source: KQMI Mortality Database
Run Date: November 17, 2016
Key Findings/Results – Second Level Mortality Review

Northwell Health 2015 – 3Q 2016 Results

Opportunities for Improvement

<table>
<thead>
<tr>
<th>Cases with opportunities for improvement</th>
<th>2015</th>
<th>2016 (Q3 YTD)</th>
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</thead>
</table>

Major Themes:
- **Planning:** Clinical Judgment, Delays, Interventional/Therapeutic Complication
- **Communication:** Teamwork, Escalation
- **Recognition:** Condition/Severity of Illness
- **Documentation:** Completeness/Accuracy
- **Level of Care:** Level of Care/Appropriateness of Treatment Setting

Note: Multiple OFI Categories may be selected for each individual case

Data Source: KQMI Mortality Database
Run Date: November 17, 2016
From Centralized Mortality Reviews to VBP AMI & HF Mortality
VBP - AMI and HF Mortality Program

Established VBP Steering Committee – September 2014

Pilot Sites Chosen – December 2014

System PICG Presentation – March 2015

Pilot Site Visits Completed – February 2015

Process Tool Submission to KQMI – July 2015

All Site Visits Completed – September 2015

Preliminary Reports Generated – November 2015

Regional Meetings – December 2015

Redesign of Process Tool to Database Application – January 2016

Pilot of Database Application – February 2016

Expansion to all system hospitals – June 2016

First Quarter preliminary reports presented – September 2016
2016 AMI & HF Mortality Review Process Flow

Patient Safety Analyst completes First Level Mortality Review

AMI & HF Mortalities populated into KQMI newly developed database application for primary diagnosis of AMI & HF

Site accesses to the AMI & HF Process Tool of all patients with a primary diagnosis of AMI or HF

All AMI and HF Mortality reviews are completed by the designated site representative using the KQMI Database Application

KQMI generates site specific reports based on completed AMI & HF mortality case review

Reports reviewed at various forums, including site specific committees, regional meetings and VBP Steering Committee for the identification, evaluation and improvement of newly developed database application and analytic data

Development and implementation of action plans

Improve outcomes and decrease preventable AMI & HF mortalities
Opportunities For Improvement  Q1-Q2 2016 Reporting

Acute myocardial infarction (AMI)
- Standard medication therapy (compliance 93%)
- DTB time <90 minutes (compliance 99%)
- Documentation of contraindication/exclusion criteria (compliance 87%)

Heart Failure (HF)
- Standard medication therapy (compliance 84%; main outlier Aldosterone Antagonist)
- Documentation of medication contraindications (compliance 78%)

Readmission
- Follow-up appointment scheduling prior to discharge
- Comprehensive medication reconciliation upon discharge
Centralized Mortality Review Process

- Further increase understanding of health care delivery and preventable versus expected death

- Beneficial in developing effective and targeted strategies to reduce preventable harm and mortality

- Standardized across multiple hospitals of varying types

- Easily replicated by other health care organizations
Thank you