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M-LiNk

Building an Effective Hospital Mortality Program

A Focus on Structures & Processes

May 13th, 2011

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Welcome & Introductions

Massachusetts Hospital Association

***Patricia Noga**, **RN, PhD(c), MBA, NEA-BC,** Senior Director, Clinical Affairs*

M-LiNk Webinar Faculty

***Cynthia Page, PT, MHP**, Vice President, Clinical Support Services at Milton Hospital*
***Janice Fitzgerald, MS, RN, CPHQ**, Director, Quality and Medical Management, Division of Healthcare Quality, Baystate Medical Center*
***Elmy Trevejo, RN, MPH**, Senior Consultant for Quality Programs, & **David Rosales, MBA**, Deland Fellow in Healthcare & Society, Brigham and Women's Hospital*

Building an Effective Hospital Mortality Program

Learning Objectives

1. Provide an overview of the M-LiNk Hospital Mortality Review Program Self-Assessment Tool
2. Highlight successful aspects of hospital mortality programs
3. Discuss application of M-LiNk tool to assess and monitor hospital mortality program development.

MHA's Statewide Performance Improvement Agenda

Priorities for Massachusetts hospitals to collectively focus on improving:

1. Safety,
2. Efficiency, and
3. Quality.

The goal to improve quality is by reducing the in-hospital mortality rate

M-LiNk

M-LiNk is a peer-based learning opportunity for hospitals to:

1. Identify best practices correlated with a reduction in mortality;

2. Adopt system supports used in high-reliability organizations; and

3. Implement protocols to identify and differentially treat high-risk patients.

Mortality: Learning-in-Network

MHA offers a portfolio of educational events and programs to help hospitals improve structures, processes and outcomes to reduce hospital mortality

- Focus on Structures & Processes (Apr-Jun)
- Outcome Drivers: Part 1 – Sepsis (Sep-Dec)
- Outcome Drivers: Part 2 - Other Drivers (Jan-Apr)

Hospital Mortality Program Self-Assessment Tool

- The tool was developed in response to suggestions and input from MA hospitals to provide a framework for use in developing or enhancing existing programs for reducing in-patient mortality
- The tool is derived from available evidence and national/local information on effective program components related to reductions in hospital mortality

Mortality Program Components

3 Main Sections

1. **Culture of Quality Improvement for Mortality Reduction**
2. **Mortality Risk Assessment & Surveillance**
3. **Standardization & Reliability of Clinical Processes**

10 Criteria containing a total of 50 Elements

Mortality Program Review Criteria

Hospital Mortality Review Criteria		# Elements
1. Culture of Quality Improvement for Mortality Reduction		
A.	Leadership Mandate	5
B.	Aim for Mortality Reduction	3
2. Mortality Risk Assessment & Surveillance		
C.	Mortality Diagnostic	8
D.	Robust Measurement & Regular Feedback on In-patient Deaths	5
E.	System Level Review	3

Mortality Program Review Criteria

Hospital Mortality Review Criteria		# Elements
3. Standardization/Reliability of Clinical Processes		
F..	Event Detection & Recognition	4
G.	Standardized Communication Protocols	2
H.	Interventions to Reduce HAI's	7
I.	Interventions to Address Adverse Events & Medication Harm	4
J.	Appropriateness of the Setting of Care	9
K.	Other	

M-LiNk Hospital Mortality Program Self-Assessment Tool

Mortality: Learning-in-Network (M-LiNk) HOSPITAL SELF-ASSESSMENT TOOL STRUCTURAL CRITERIA FOR MORTALITY REVIEW PROGRAM	Answer Format								
	Yes	No	NA	1 = nothing in place at this time 2 = informal process established 3 = formal process established - but not specifically for mortality reduction 4 = formal process established to address mortality reduction 5 = robust system/processes in place to prevent/detect/treat at-risk pts/events to reduce in-patient mortality					Comments/ Additional Information
2. Culture of Quality Improvement for Mortality Reduction									
A. Leadership Oversight & Accountability: hospital assures leadership oversight and accountability to track mortality and implement opportunities for improvement	O	O	O	1	2	3	4	5	
B. AIM for Mortality Reduction: hospital clinical and administrative leadership set clear, measurable aims for improvement to reduce in-patient mortality	O	O	O	1	2	3	4	5	
1. Mortality Risk Assessment & Surveillance									
C. Mortality Diagnostic: the hospital has a process in place to monitor in-patient deaths on a regular basis	O	O	O	1	2	3	4	5	
D. Robust Measurement & Regular Feedback on Hospital Deaths: hospital has a process in place for regularly collecting, reporting and benchmarking data on hospital deaths for the purpose of identifying opportunities for improvement	O	O	O	1	2	3	4	5	
E. System-level Review: hospital integrates mortality review data with key performance indicators to identify system level variables to reveal opportunities for improvement	O	O	O	1	2	3	4	5	
3. Standardization and Reliability of Clinical Processes									
F. Event Detection & Recognition: hospital has a process in place to ensure full participation for identifying and addressing triggers for patients, conditions and events at greatest risk of in-patient mortality	O	O	O	1	2	3	4	5	
G. Standardized Communication Protocols: hospital uses standardized communication protocols to transfer information on critical events in a timely and effective manner	O	O	O	1	2	3	4	5	
H. Use of Interventions to Reduce Hospital Acquired Infections: hospital uses evidence-based interventions to prevent, and effectively treat those clinical conditions and events most associated with in-patient mortality	O	O	O	1	2	3	4	5	
I. Use of Interventions to Address Adverse Events & Medication Management: use of prompts, triggers and/or standardized order sets to address potential adverse events	O	O	O	1	2	3	4	5	
J. Appropriateness of the Setting of Care: protocols in place to effectively address end-of-life care within the hospital and community	O	O	O	1	2	3	4	5	
Instructions: add up total number of points from the response to each of the 10 key criteria to estimate the hospital's Stage of Mortality Program Development	**Total**								☐ Stage 1: ≤15 points ☐ Stage 2: 16-25 points ☐Stage 3: 26-35 points ☐ Stage 4: 36-45 points ☐ Stage 5: 46-50 points

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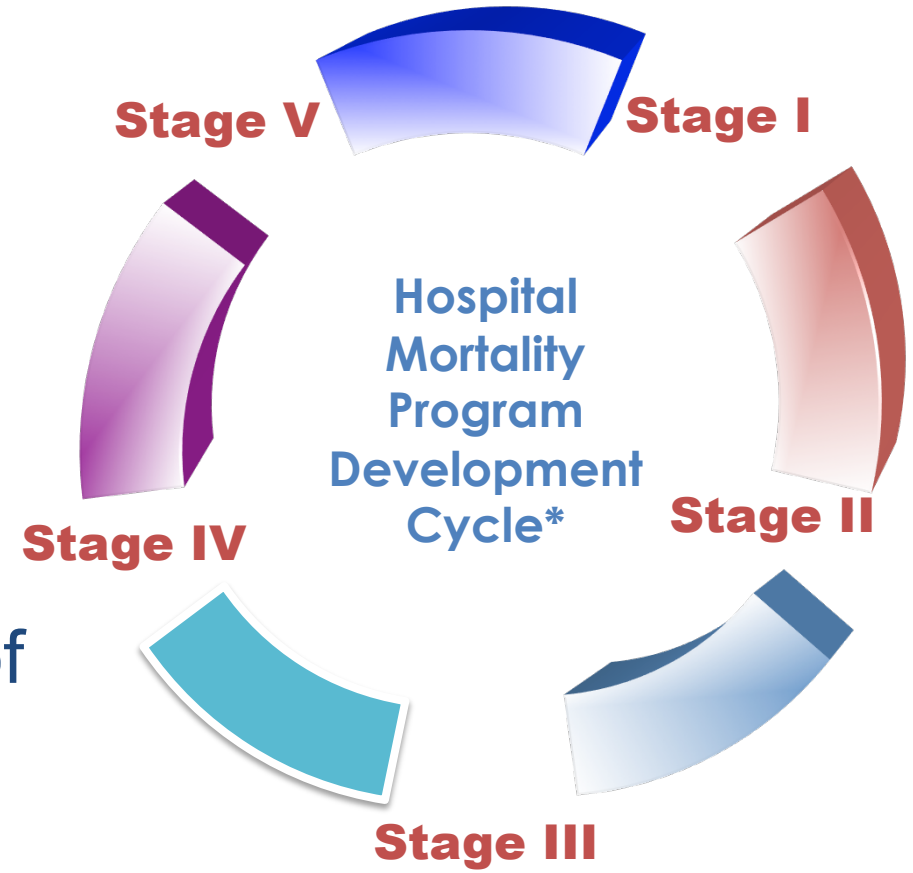
Developing a Comprehensive Hospital Mortality Review Program

- This framework serves as a guide for identifying best practices (criteria) for an effective mortality review program
- Ongoing application of the framework allows hospitals to further integrate key elements of a comprehensive mortality program



Application of Tool

- MHA recommends use of the tool as a starting point to assess baseline performance in suggested areas for Hospital Mortality Program development.
- The tool will be adapted as we continue to assess the effectiveness of the framework and criteria, as applied by MA hospitals over the coming year.

Hospital Mortality Program

Application of Self-Assessment Tool for Mortality Program Development

Cynthia Page, PT, MHP

Vice President, Clinical Support Services

Milton Hospital

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FOCUS on Hospital Mortality

- Shift focus from retrospective analysis of "what happened" to proactive approach of identification, rapid response and prevention of hospital deaths
- System integration of mortality into hospital strategic goals for quality and safety

Tracking of Mortality

- Focus on Improvement vs. Reporting (internally-focused effort)
- Mortality performance becomes measure of quality/safety success
- Expectation that ongoing improvement efforts will impact mortality (culture change)
- **Track mortality data over time on key populations with benchmarks for performance**

Mortality Program Structural Elements

- Suggested criteria for building an effective hospital mortality review program, including:
  - integrated systems, clinical practices and strategies for preventing, recognizing and treating patients/ conditions/events at risk.

Criteria & Elements

- The framework includes
  - 10 core criteria
  - 50 elements or suggested actions within each criterion.

“Other”

- The self-assessment tool includes a final category of "Other" for hospitals to include any criteria or element most relevant to their work on mortality and not currently represented in the self-assessment tool.

Results & Interpretation of Self-assessment Tool

Calculation: add total responses for each question on on the M-LiNk Self-assessment Tool (10 CRITERIA) to estimate the stage of development for your Hospital Mortality Review Program.

- Stage 1: ≤15 points
- Stage 2: 16-25 points
- Stage 3: 26-35 points
- Stage 4: 36-45 points
- Stage 5: 46-50 points

Interpretation: The process of completing the self-assessment survey will provide an approximate idea of the components in place and suggested level of development for your in-patient mortality review program.

Response: The hospital may use information gained from the self-assessment process to set aims for improvement and re-assess data and development of program elements over time.

Hospital Mortality Program: Stages of Development

- Depicts stages of development of a comprehensive hospital mortality review program
- Viewed as a continuum—Stage I being very basic and Stage V being the most robust
- Measured by the % of criteria completed or addressed upon self-assessment

Stages of Development for Hospital Mortality Review Program

Stage	Description
Stage I	**No formal program in place to address mortality reduction, though raw mortality is monitored with identification/creation of minimal elements for hospital to address mortality**
	Less than 15 points
Stage II	**Multi-professional Hospital Mortality Review Committee (or function) in place with responsibility for measuring mortality across patient populations with the reporting of data across clinical departments. Hospital uses data to identify goals for improvement.**
	16-25 points
Stage III	**Hospital mortality Review Program formally established, with effective measurement and feedback systems on mortality data to address staff training and awareness/intervention protocols for patients, conditions/events at greatest risk of mortality.**
	26-35 points
Stage IV	**Hospital Mortality Review Program successfully integrated into hospital management structure, with accountability to Medical Executive Committee. Mortality is monitored across key populations and benchmarked across key targets for performance. Protocols implemented for identification and treatment of high-risk patients and process in place to assess and refer end-of life care.**
	36-45 points
Stage V	**Highly developed and well-integrated Hospital Mortality Review Program in place, with strong emphasis on internal improvement through use of robust measurement and feedback systems, planned maintenance through case review and the hospital quality improvement systems, with hospital and community coordination for addressing effective end-of-life placement and care. Hospital mortality rates have demonstrated sustained improvement (reductions) over protracted period of time (at least 2 years)**
	45-50 points

Hospital Mortality Program Perspective from Milton Hospital

- Leadership / Culture of Quality & Safety
  - --Mortality reduction set as a strategic goal for the organization
  - --Medical staff leadership and board review of mortality measures and performance
- Risk Assessment & Surveillance
  - --Process in place to analyze individual inpatient deaths on a regular basis

Hospital Mortality Program Perspective from Milton Hospital

- Standardization Reliability of Clinical Processes
  - -- Implementation of clinical bundles, VAP, CAUTI, Central line and Sepsis
  - -- Implementation of Rapid Response Teams
  - Improvements in Care for Stroke patients
  - Implementation of anti-coagulation protocols
  - Expansion and integration of hospitalists

Hospital Mortality Program

Developing Structures & Processes for a Robust Hospital Mortality Review Program

Janice Fitzgerald, MS, RN, CPHQ
Director, Quality & Medical Management
Division of Healthcare Quality
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Baystate Health: Reducing Mortality

Jan Fitzgerald MS,RN,CPHQ

Director Quality & Medical Management

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May 13 2011

Baystate Medical Center

- 660 bed tertiary care referral center
- 40 K admissions/year
- Magnet Hospital
- Multiple Beacon Awards
- Western Campus of Tufts University
- Member CoTH, 9 residency programs, 244 residents
- 1200 member medical staff, 206 faculty MDs
- Level 1 Trauma Center
- IHI Mentor Hospital SCIP, AMI, HF, PU, VTE

Awards & Distinctions

Baystate Medical Center

U.S. News & World Report
America's Best Hospitals
Baystate Medical Center
-Endocrinology

Thomson Reuters
Top 50 Hospital System
Baystate Health

Thomson Reuters
Top 100 Hospitals
Top 100 Cardiovascular Hospitals
Baystate Medical Center

LeapFrog Group 2010
Top Hospitals
Baystate Medical Center

SDI Top 100
Integrated Health Networks
Baystate Health

Magnet Hospital
Nursing Excellence
Baystate Medical Center

Awards & Distinctions

Beacon Award
Baystate Medical Center
-Adult ICU Critical Care Excellence

HIMSS Analytics
Top One Percent for Adoption of Electronic Medical Records
Baystate Medical Center

Premier HQID
Top Performers
Baystate Medical Center
-Surgical Care Improvement Project
-Total Joint Replacement Care

Institute for Healthcare Improvement
Mentor Hospital
Baystate Medical Center

PRC
Patient Satisfaction Awards
Baystate Health

Blue Distinction
For Total Joint Replacement & Cardiac Care
Baystate Medical Center

Previous Work

- **IHI Collaborative Communities**
  - Reducing mortality
  - Reducing readmissions
  - TCAB
- **IHI 100, 00 Lives Campaign**
  - Effective clinical care
  - Complication prevention
- **IHI 5 Million Lives from Harm Campaign**
- **Premier Projects**
  - HQID
  - QUEST
  - Partnership for Patients

Implementing Process Improvement

How to start

TEAM

Clinical champions ready, willing, and eager

GAME PLAN

Reliability principles

Interventions to provide failure free care over time

COACH (Quality)

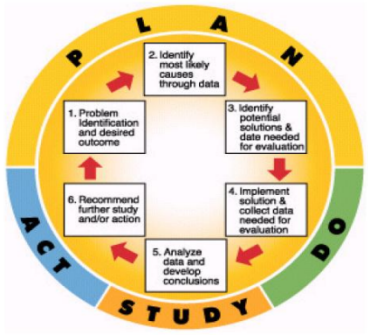
- Provide support

-Measurement

Pt Centered Care

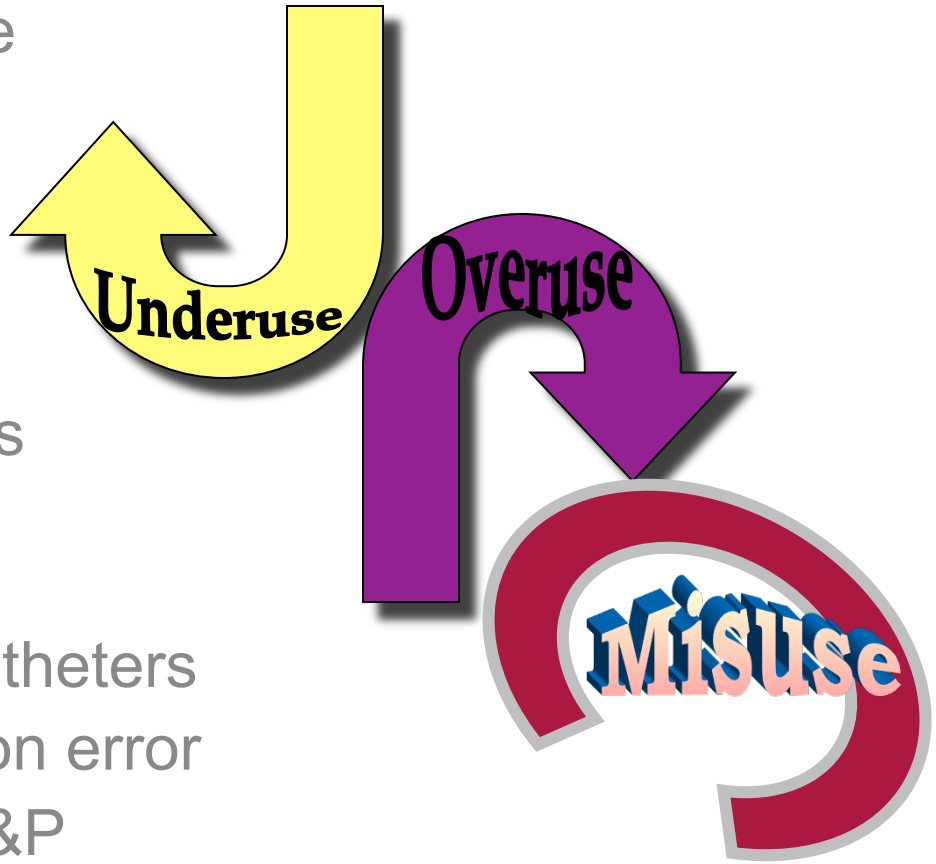
SCIENCE

Evidence based practice



Quality & Safety Reducing Error

- **Underuse:**
  - DVT prophylaxis
  - Peri-op beta blocker use
  - Hand hygiene
  - Aseptic technique
- **Overuse:**
  - Indwelling catheters
  - AB continued > 24 hours
- **Misuse:**
  - Ultrasound
  - Prolonged Indwelling catheters
  - Medication administration error
  - Lack of adherence to P&P



Mortality Review

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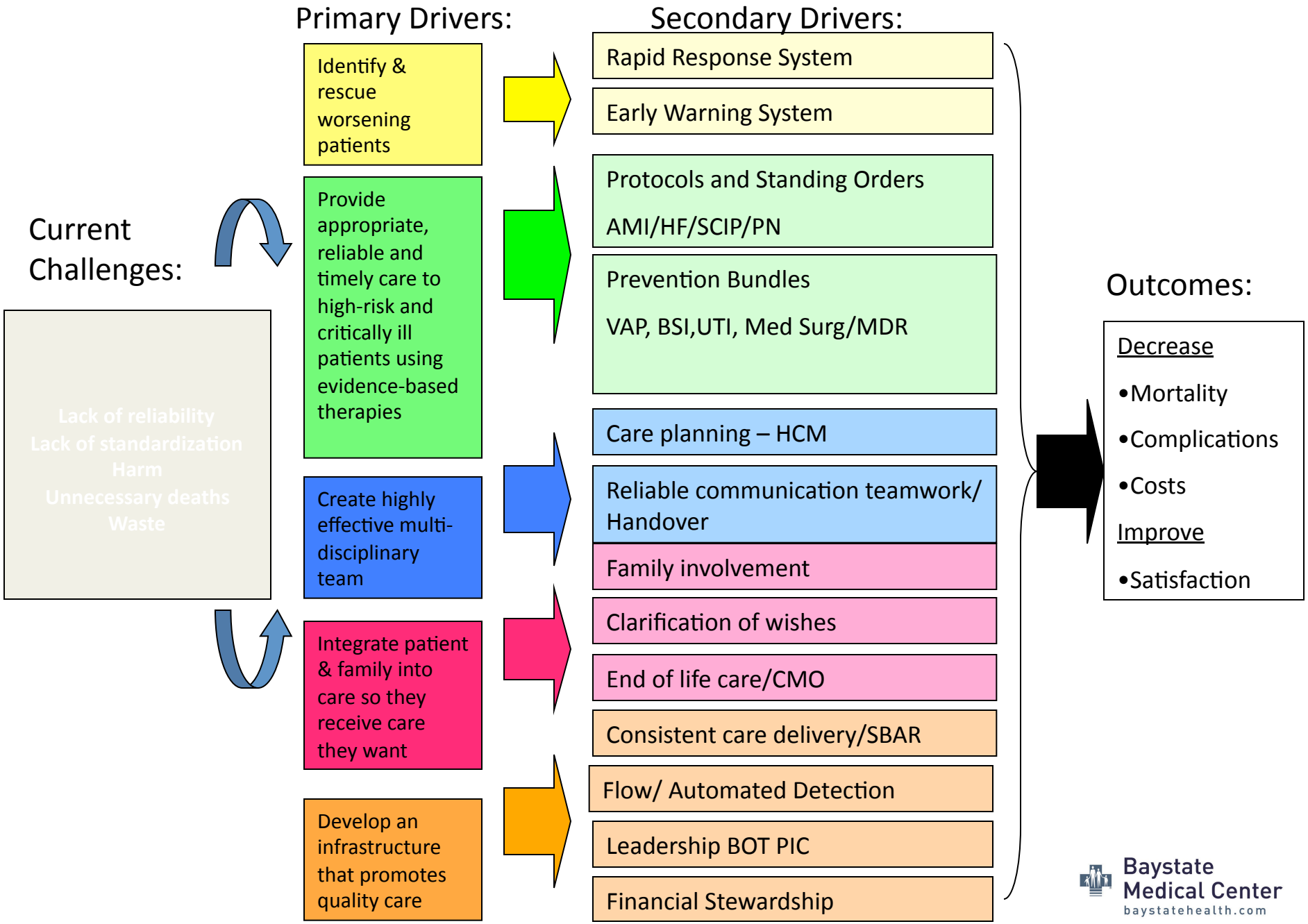
	ICU	NON-ICU Care
Comfort care only	8 pts (16%)	10 pts (20 %)
Not Comfort care only	7 pts (14%)	25 pts (50%)

BMC Improving Outcomes for High-Risk and Critically Ill Patients



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Focus: Potentially Preventable

- Adverse drug events
- Hospital acquired conditions
  - HAIs (CLABSI; CAUTI;VAP;SSI;C Diff;MRSA)
  - Injury
  - Hospital acquired pressure ulcers
  - Venous thromboembolism
- Population based mortality
  - AMI; HF; Pneumonia; Stroke; Sepsis; COPD; OSA

Implementation Plan

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	Critical Care	NON-CC
Comfort care only	☑ Clear ICU admission/triage and transfer criteria	☐ Advance directives (AD) Community outreach AD ☐ Alternative end of life *(in process)* ☐ Palliative care team
Not Comfort care only	☑ Glycemic control ☑ Sepsis interventions ☑ Vent bundle ☐ ICU Multidisciplinary Rounds shared goals *(in process)* ☑ Communication/Handoffs ☑ Central line bundle ☑ Appropriate TV volume for ARDS ☑ Potentially preventable review hospital acquired events ☑ Mortality review ☑ SCIP AB, temp, clip, BB, DVT ☑ Anticoagulation management ☐ High alert meds *(in process)*	☑ RRT ☑ Communication & Handoffs ☑ Early warning system ☑ Non ICU MDR shared goals ☑ Glycemic control ☑ Vent VAP prevention bundle ☑ CVL-BSI prevention bundle technology chgs in place ☑ Advance RRT training – early sepsis recog / inter ☑ Potentially preventable review hospital acquired events ☑ Mortality review ☑ SCIP AB temp, clip, BB, DVT ☑ HQA measures ☑ Anticoagulation management

Part of the Direction for

Everybody.....

	Threshold	Target	Maximum
Mortality:	Sustain risk adjusted mortality index established FY 2010 (Premier QUEST initial top quartile for BMC) for all three BH hospitals.	Mortality: Lower hospital-specific mortality o/e index for each BH hospital by 1%.	Mortality: Lower hospital-specific mortality o/e index for each BH hospital by 2%.
Effectiveness:	2 of 3 BH hospitals achieve effectiveness composite scores in top quartile for 4 of 5 composites (COPD, HF, MI, SCIP & Stroke).	Effectiveness: All BH hospitals achieve effectiveness composite scores in top quartile for 4 of 5 composites.	Effectiveness: All three BH hospitals achieve effectiveness composite scores in top quartile for all 5 composites
Safety:	Preventable harm score (NQF-8) is equal to or below national benchmark	Safety: Preventable harm score is lowered by 5% at all BH hospitals. .	Safety: Preventable harm score is lowered by 10% or achieves zero at all BH hospitals benchmark.
Safety:	All 3 hospitals realize improvement in HA-UTI by 10% or achieve zero rate	Safety: All 3 hospitals realize reduction in HA-UTI rates by 15% or achieve zero rate	Safety: All 3 hospitals realize reduction in HA-UTI by 20% or achieve zero rate.
Readmissions:	Implement standardized DC and readmission avoidance process for COPD (BMC) and HF patients (BFMC & BMLH).	Readmissions: Decrease COPD and HF readmissions by 5% at respective entities.	Readmissions: Decrease COPD and HF readmissions by 10% at respective entities.

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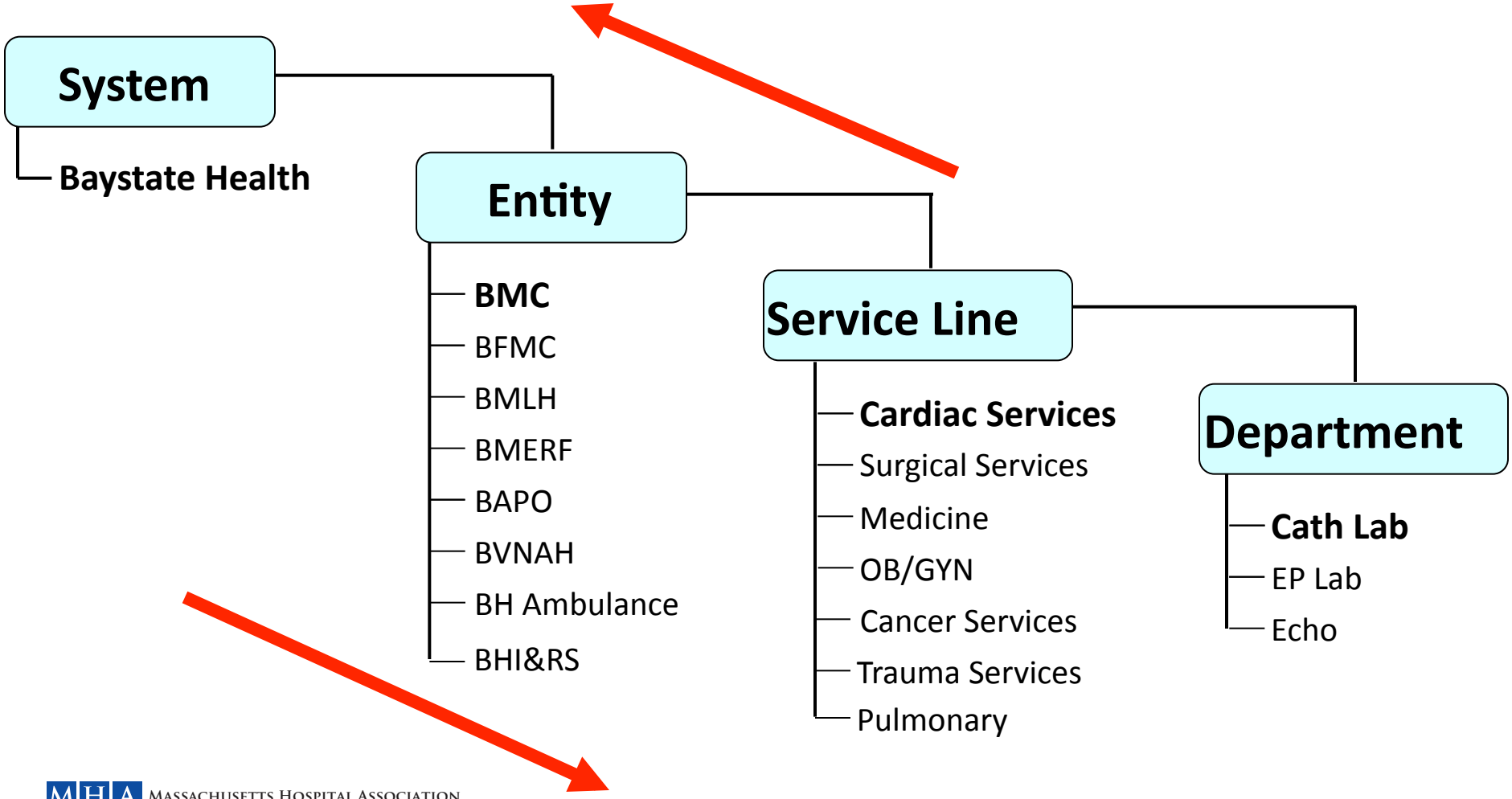
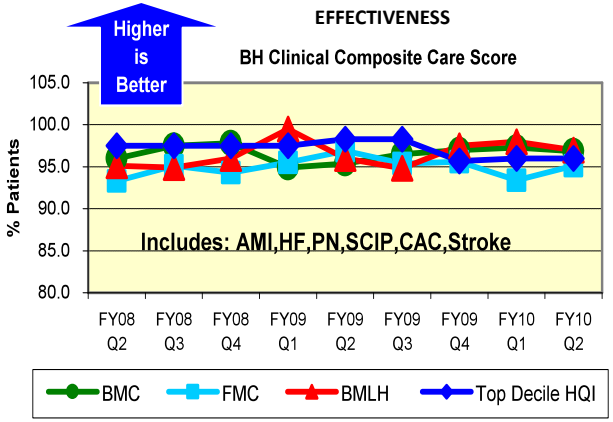
Information and Improvement Cascade

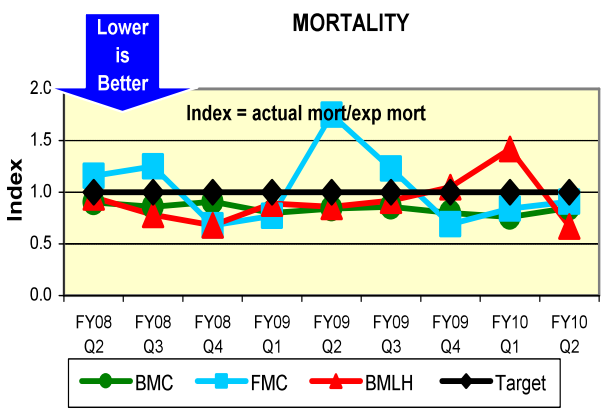


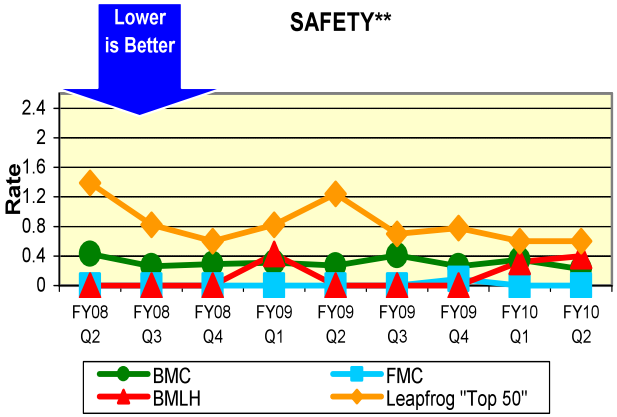
BH Dashboard

BAYSTATE HEALTH STRATEGIC PLAN METRICS
FY 2009 – FY 2013

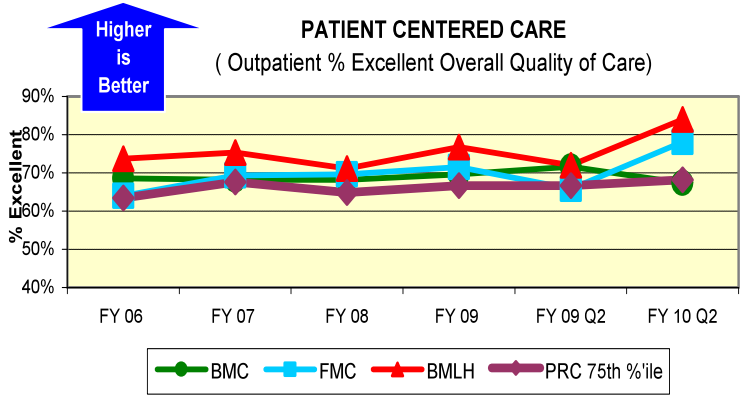
CLINICAL QUALITY

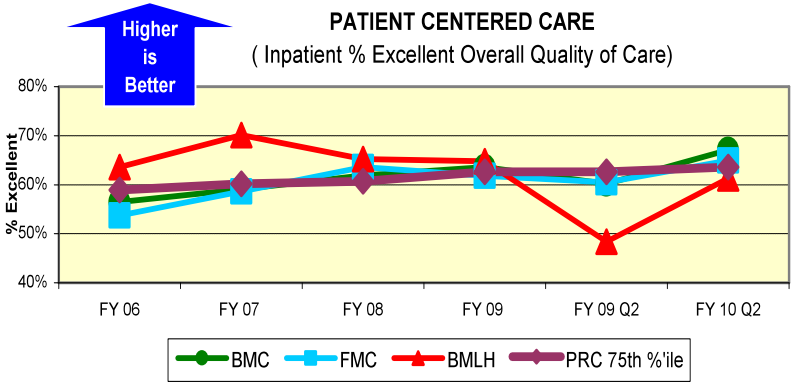






**Safety Score - Rates of BSI, DVT, PO Sepsis, HAPU, Fall/Injury





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QUEST PERFORMANCE REPORT

Final Results: 2010Q3

Report Released 03-24-2011 (Report Generated 3/23/2011)

To achieve unprecedented results in quality, safety, and efficiency

Baystate Medical Center - Springfield, MA

QUEST Charter Member

Evidence-Based Care

Measure Results	Measure Status	Hospital Evidence-Based Care Rate	Variation from Top Performance Threshold	Top Performance Threshold	Measure Num	Measure Denom	Total Eligible Discharges	Top Quartile for Period	Top Decile for Period
All-or-None Composite Current Quarter Jul10-Sep10	☆	87%	13%	84%	933	962	1,120	96%	98%
All-or-None Composite Year to Date Jan10-Sep10	☆	98%	12%	84%	3,076	3,217	3,784	95%	97%
All-or-None Composite Rolling 4 Quarters Oct09-Sep10	☆	86%	11%	84%	4,080	4,305	5,104	95%	97%

Cost of Care: Teaching >= 375 Beds

Measure Results	Measure Status	Hospital Total Inpatient Cost per Case Mix Adj Discharge	Variation from Top Performance Threshold	Top Performance Threshold		Total Eligible Discharges	Median for Period	Top Quartile for Period
Cost per Adj Discharge Current Quarter Jul10-Sep10	☆	$5,140	-$1,400	$6,540		8,707	$5,375	$4,828
Cost per Adj Discharge Year to Date Jan10-Sep10	☆	$5,210	-$1,330	$6,540		26,473	$5,470	$4,883
Cost per Adj Discharge Rolling 4 Quarters Oct09-Sep10	☆	$5,320	-$1,220	$6,540		35,498	$5,555	$5,035

Note: Cost of Care data is considered preliminary until calculated Case Mix Index is available.
If Cost of Care data was submitted but is not shown, preliminary results are provided on the Cost of Care Drill Down Report.

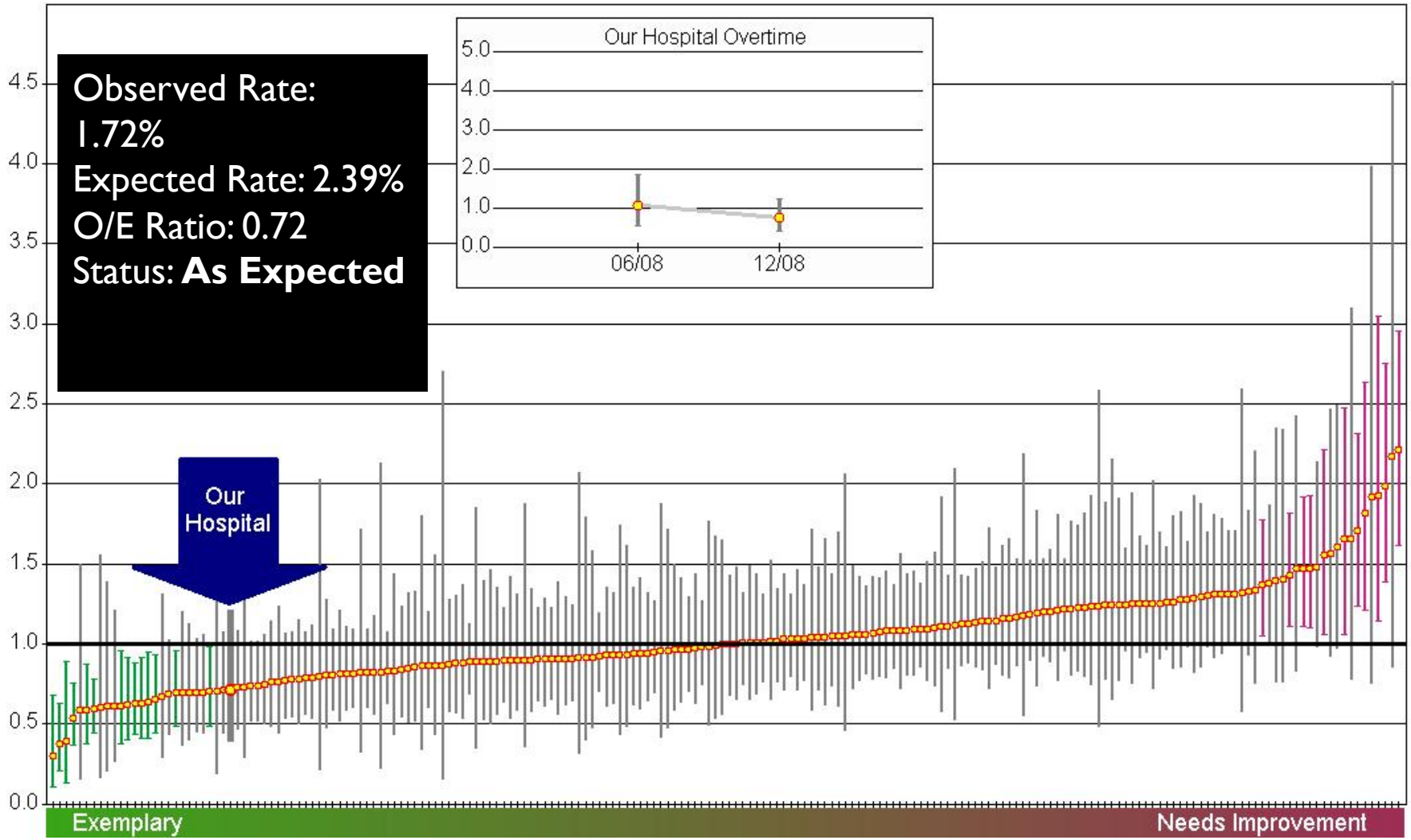
Mortality

Data Reported Through: Sep 2010

Measure Results	Measure Status	Hospital O/E Ratio	Variation from Top Performance Threshold	Top Performance Threshold	Observed Rate	Expected Rate	Total Eligible Discharges	Top Quartile for Period	Top Decile for Period
Severity-Adjusted Mortality Current Quarter Jul10-Sep10	☆	0.82	-0.16	0.98	2.1%	2.6%	9,318	0.62	0.44
Severity-Adjusted Mortality Year to Date Jan10-Sep10	☆	0.88	-0.12	0.98	2.3%	2.7%	28,190	0.70	0.53
Severity-Adjusted Mortality Rolling 4 Quarters Oct09-Sep10	☆	0.87	-0.11	0.98	2.3%	2.7%	37,799	0.71	0.56

Note: Mortality data is considered preliminary until all months in the quarter are submitted. The TPT for Mortality is recalibrated annually; see details below.

NMS Overall* 30-Day Mortality



* Includes General and Vascular Surgery Cases

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Harm Management

- **Clinical care:**
  - Reasonably preventable when reliable evidence-based “perfect” clinical care every time, the first time
  - Ensure safety nets and preventive measures are routinely applied
  - Mortality drill down
- **Administrative care:**
  - Appropriate investigation, follow up & disclosure
  - Ensure appropriate, clear, accurate, reflective documentation
  - Ensure coding practices accurately reflect patient condition as well as course of care

AHA/ASA Guideline

Guidelines for the Early Management of Adults With Ischemic Stroke

A Guideline From the American Heart Association/ American Stroke Association Stroke Council, Clinical Cardiology Council, Cardiovascular Radiology and Intervention Council, and the Atherosclerotic Peripheral Vascular Disease and Quality of Care Outcomes in Research Interdisciplinary Working Groups

The American Academy of Neurology affirms the value of this guideline as an educational tool for neurologists.

Harold P. Adams, Jr, MD, FAHA, Chair; Gregory del Zoppo, MD, FAHA, Vice Chair; Mark J. Alberts, MD, FAHA; Deepak L. Bhatt, MD; Lawrence Brass, MD, FAHA†; Anthony Furlan, MD, FAHA; Robert L. Grubb, MD, FAHA; Randall T. Higashida, MD, FAHA; Edward C. Jauch, MD, FAHA; Chelsea Kidwell, MD, FAHA; Patrick D. Lyden, MD; Lewis B. Morgenstern, MD, FAHA; Adnan I. Qureshi, MD, FAHA; Robert H. Rosenwasser, MD, FAHA; Phillip A. Scott, MD, FAHA; Eelco F.M. Wijdicks, MD, FAHA

Purpose—Our goal is to provide an overview of the current evidence about components of the evaluation and treatment of adults with acute ischemic stroke. The intended audience is physicians and other emergency healthcare providers who treat patients within the first 48 hours after stroke. In addition, information for healthcare policy makers is included.

Methods—Members of the panel were appointed by the American Heart Association Stroke Council's Scientific Statement Oversight Committee and represented different areas of expertise. The panel reviewed the relevant literature with an emphasis on reports published since 2003 and used the American Heart Association Stroke Council's Levels of Evidence grading algorithm to rate the evidence and to make recommendations. After approval of the statement by the panel, it underwent peer review and approval by the American Heart Association Science Advisory and Coordinating Committee. It is intended that this guideline be fully updated in 3 years.

Results—Management of patients with acute ischemic stroke remains multifaceted and includes several aspects of care that have not been tested in clinical trials. This statement includes recommendations for management from the first contact by emergency medical services personnel through initial admission to the hospital. Intravenous administration of recombinant tissue plasminogen activator remains the most beneficial proven intervention for emergency treatment of stroke. Several interventions, including intra-arterial administration of thrombolytic agents and mechanical interventions, show promise. Because many of the recommendations are based on limited data, additional research on treatment of acute ischemic stroke is needed. (***Stroke.*** **2007;38:1655-1711.)**

Key Words: AHA Scientific Statements ■ emergency medical services ■ stroke ■ acute cerebral infarction ■ tissue plasminogen activator

†Deceased.

The American Heart Association makes every effort to avoid any actual or potential conflicts of interest that may arise as a result of an outside relationship or a personal, professional, or business interest of a member of the writing panel. Specifically, all members of the writing group are required to complete and submit a Disclosure Questionnaire showing all such relationships that might be perceived as real or potential conflicts of interest.

This guideline was approved by the American Heart Association Science Advisory and Coordinating Committee on January 6, 2007. A single reprint is available by calling 800-242-8721 (US only) or writing the American Heart Association, Public Information, 7272 Greenville Ave, Dallas, TX 75231-4596. Ask for reprint No. 71-0398. To purchase additional reprints, call 843-216-2533 or e-mail kelle.ramsay@wolterskluwer.com.

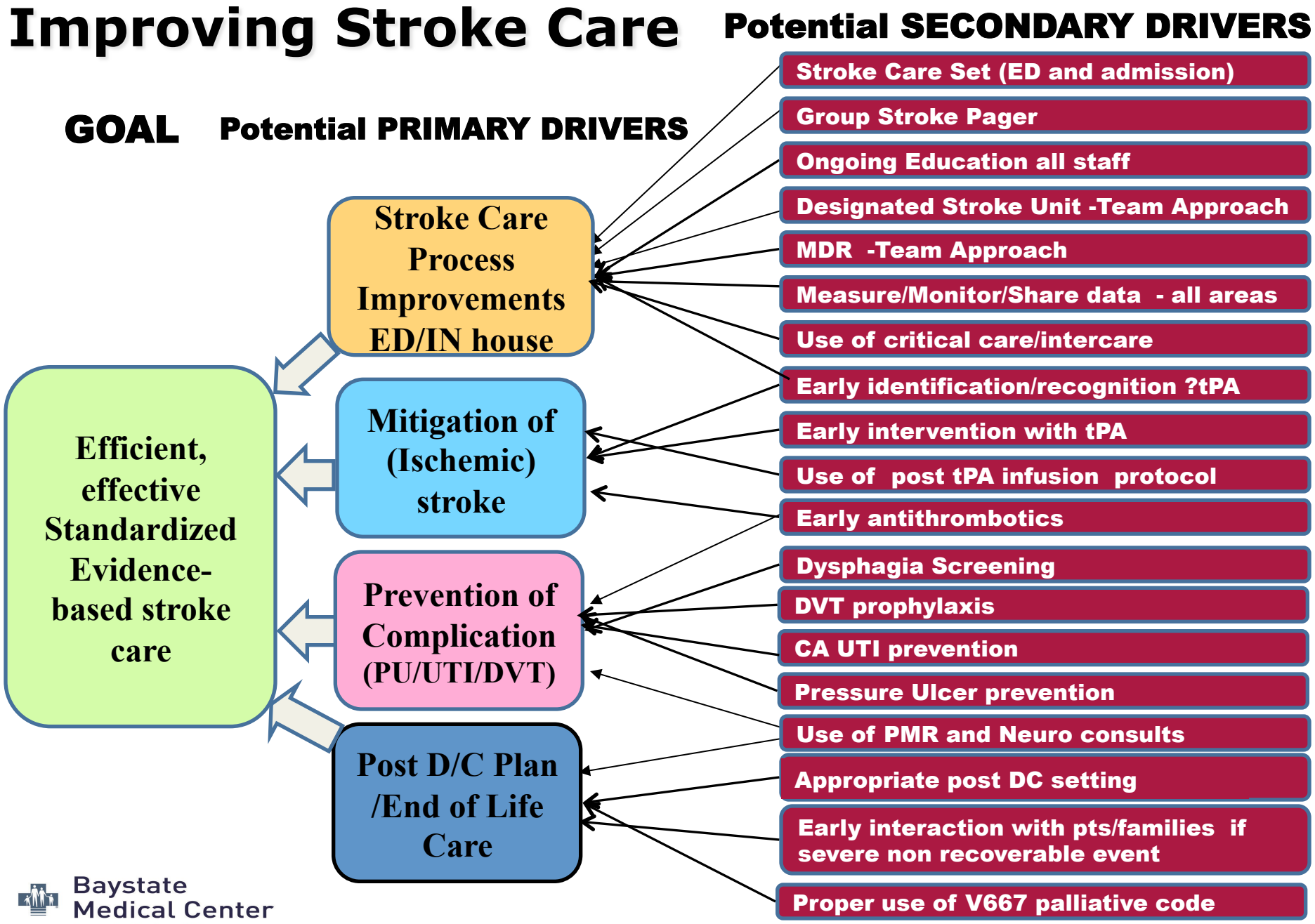
This guideline has been copublished in *Circulation*.

Expert peer review of AHA Scientific Statements is conducted at the AHA National Center. For more on AHA statements and guidelines development, visit http://www.americanheart.org/presenter.jhtml?identifier=3023366.

Stroke **is available at http://www.strokeaha.org** **DOI: 10.1161/STROKEAHA.107.181486**

Order sets usually derived from national guidelines and consensus statements

Improving Stroke Care



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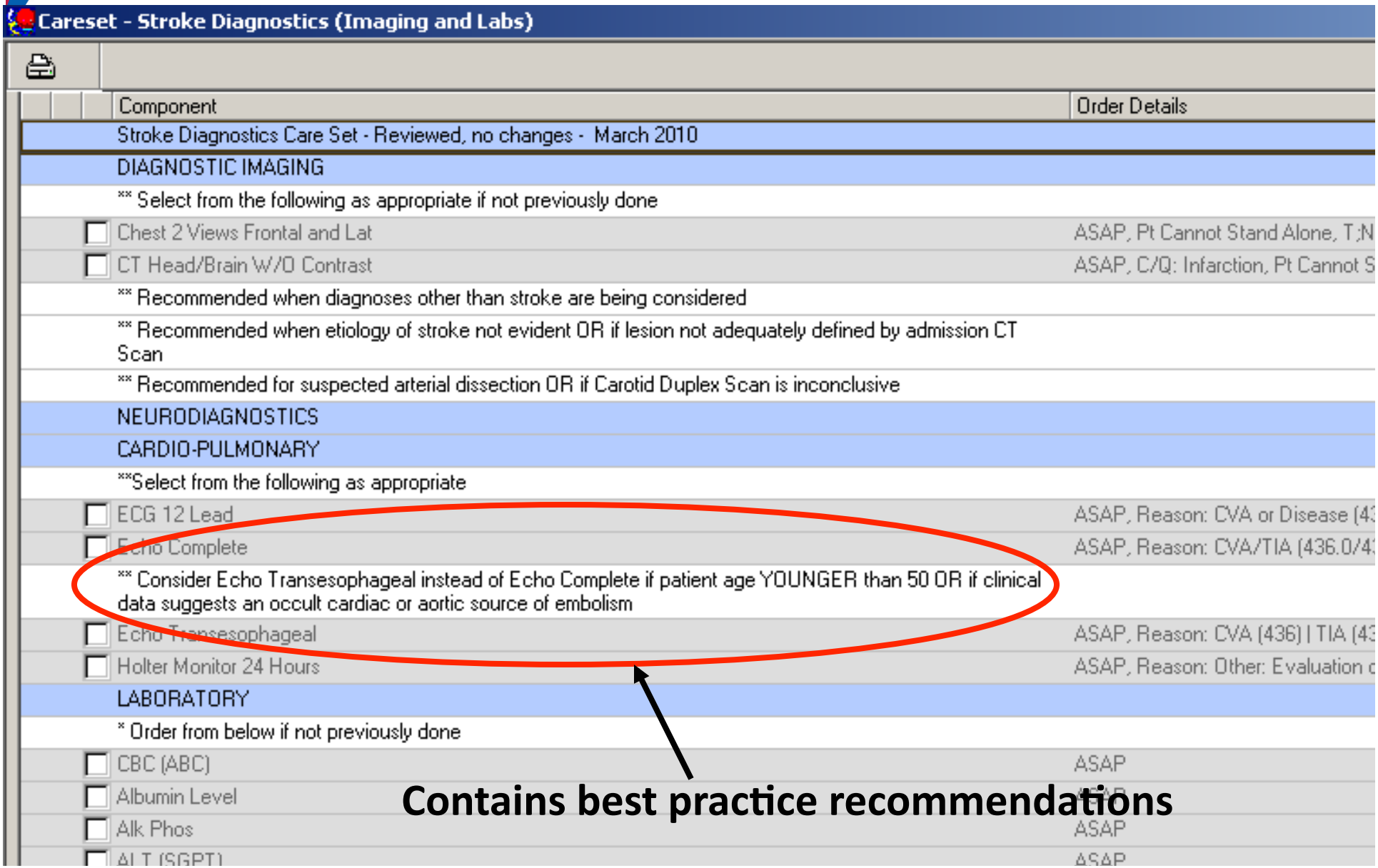
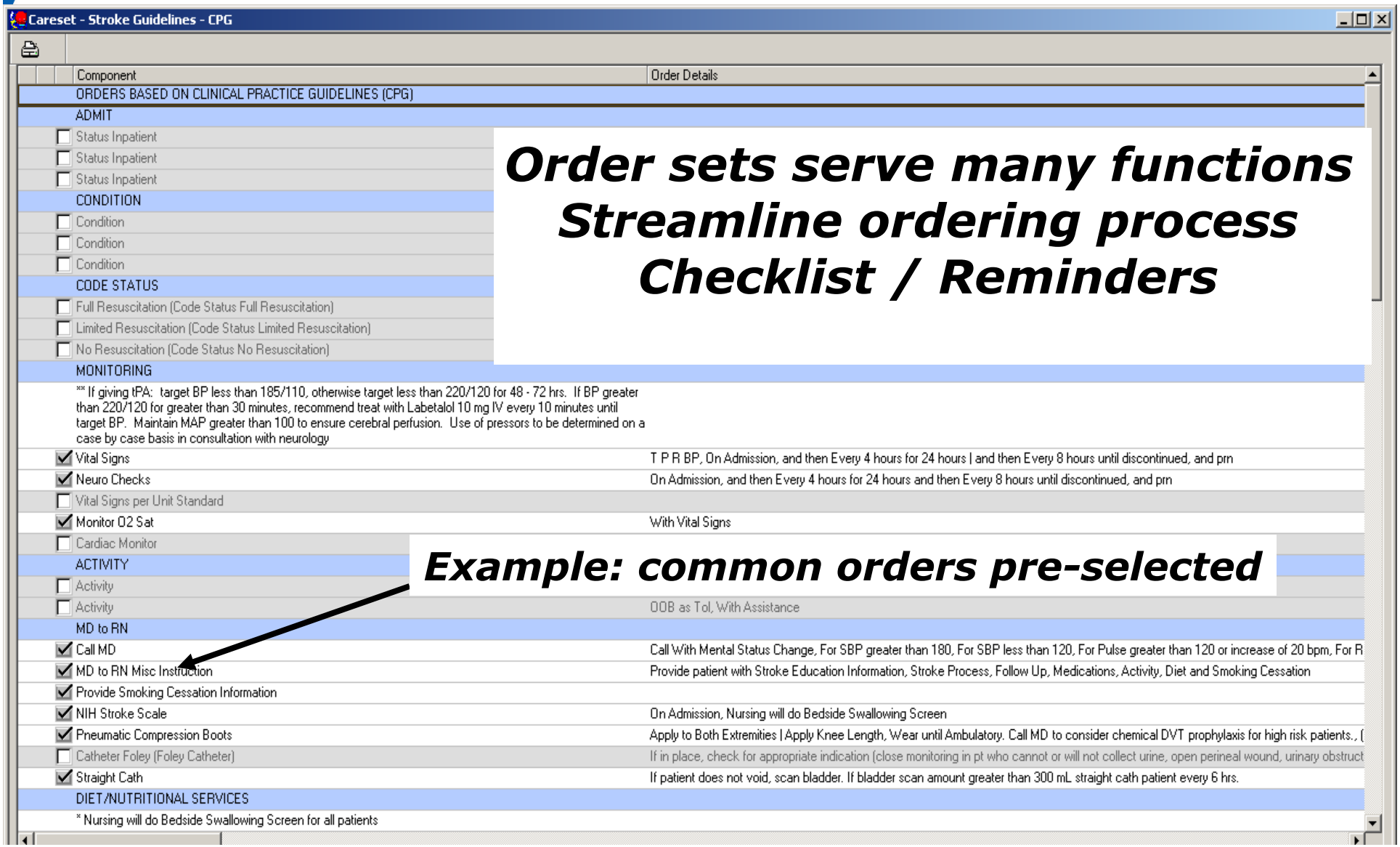
Diagnostic Evaluation

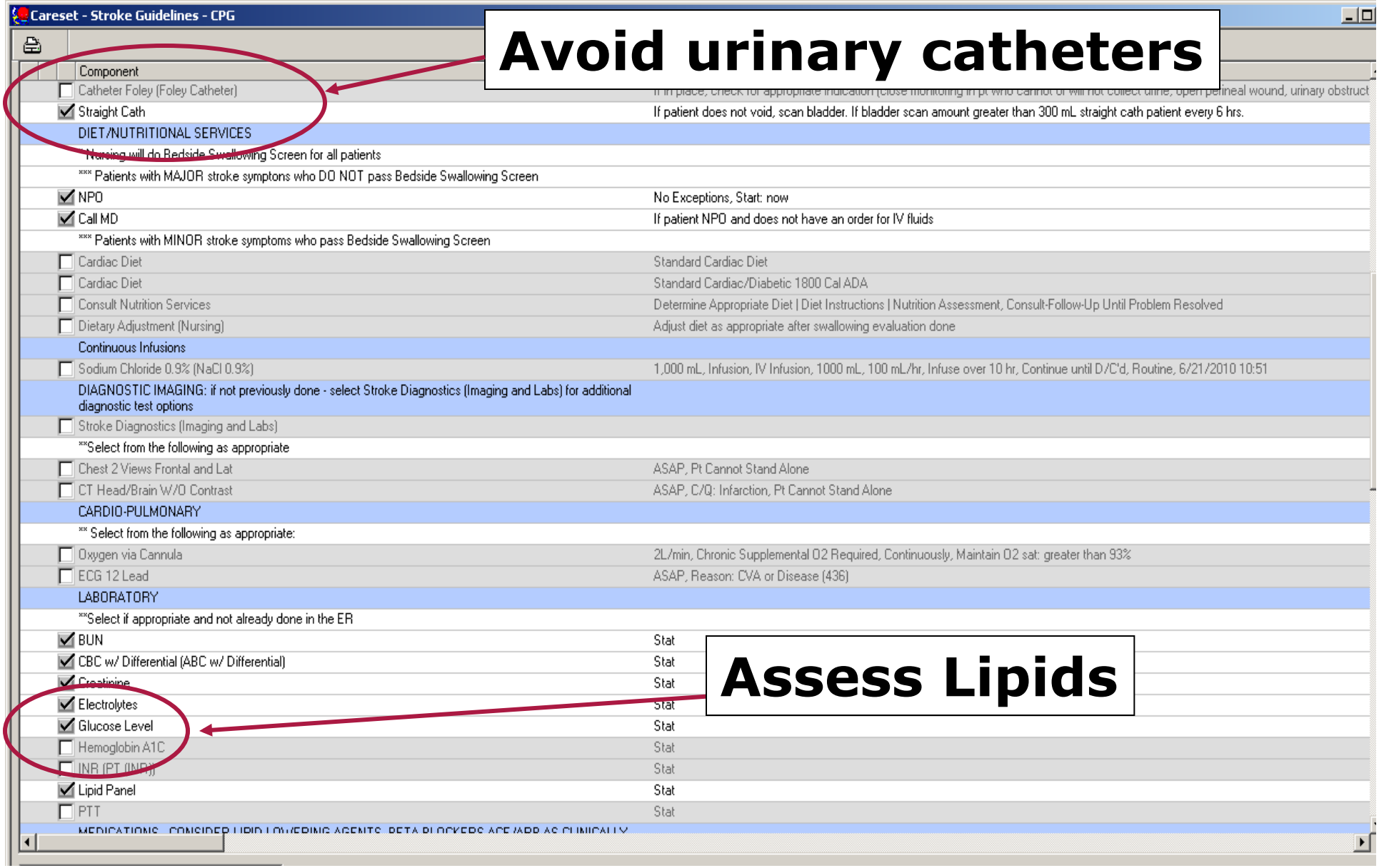


Contains best practice recommendations

Stroke Admission Orders

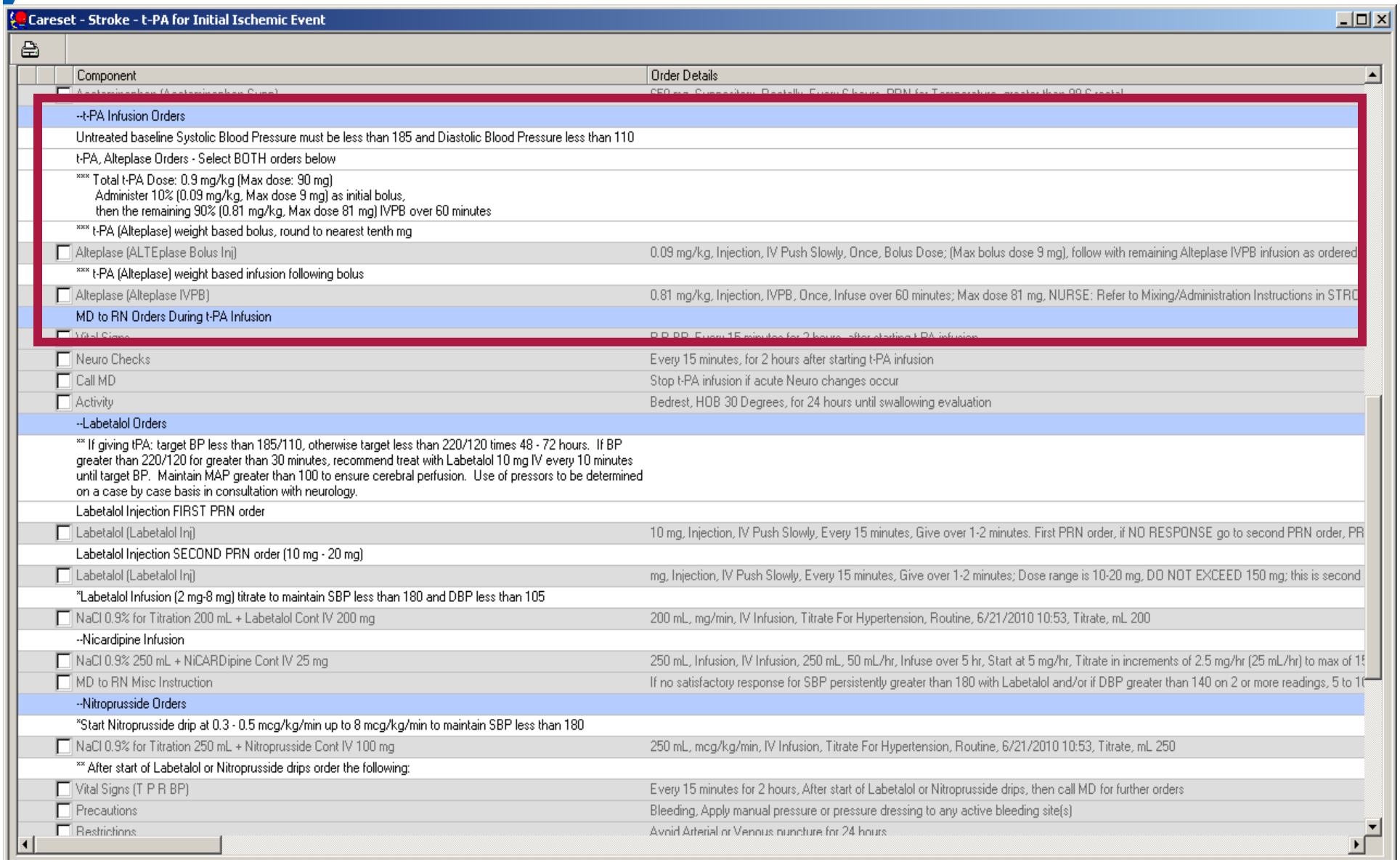


Engineered for Desired Results

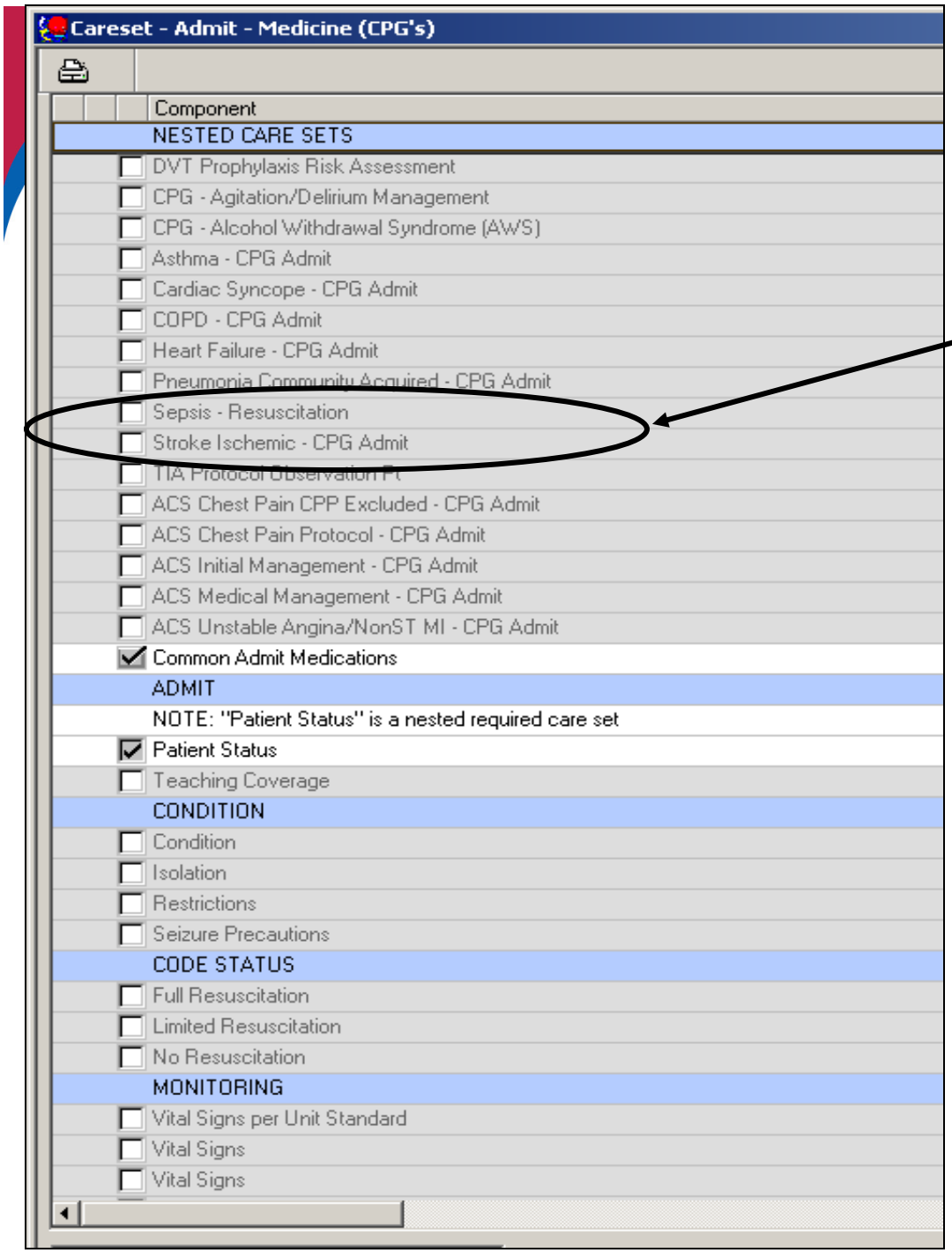


Component	
Catheter Foley (Foley Catheter)	If in place, check for appropriate indication (close monitoring in pt who cannot or will not collect urine, open perineal wound, urinary obstruct
Straight Cath	If patient does not void, scan bladder. If bladder scan amount greater than 300 mL straight cath patient every 6 hrs.
DIET/NUTRITIONAL SERVICES	
*Nursing will do Bedside Swallowing Screen for all patients	
*** Patients with MAJOR stroke symptons who DO NOT pass Bedside Swallowing Screen	
NPO	No Exceptions, Start: now
Call MD	If patient NPO and does not have an order for IV fluids
*** Patients with MINOR stroke symptoms who pass Bedside Swallowing Screen	
Cardiac Diet	Standard Cardiac Diet
Cardiac Diet	Standard Cardiac/Diabetic 1800 Cal ADA
Consult Nutrition Services	Determine Appropriate Diet | Diet Instructions | Nutrition Assessment, Consult-Follow-Up Until Problem Resolved
Dietary Adjustment (Nursing)	Adjust diet as appropriate after swallowing evaluation done
Continuous Infusions	
Sodium Chloride 0.9% (NaCl 0.9%)	1,000 mL, Infusion, IV Infusion, 1000 mL, 100 mL/hr, Infuse over 10 hr, Continue until D/C'd, Routine, 6/21/2010 10:51
DIAGNOSTIC IMAGING: if not previously done - select Stroke Diagnostics (Imaging and Labs) for additional diagnostic test options	
Stroke Diagnostics (Imaging and Labs)	
**Select from the following as appropriate	
Chest 2 Views Frontal and Lat	ASAP, Pt Cannot Stand Alone
CT Head/Brain W/O Contrast	ASAP, C/Q: Infarction, Pt Cannot Stand Alone
CARDIO-PULMONARY	
** Select from the following as appropriate:	
Oxygen via Cannula	2L/min, Chronic Supplemental O2 Required, Continuously, Maintain O2 sat: greater than 93%
ECG 12 Lead	ASAP, Reason: CVA or Disease (436)
LABORATORY	
**Select if appropriate and not already done in the ER	
BUN	Stat
CBC w/ Differential (ABC w/ Differential)	Stat
Creatinine	Stat
Electrolytes	Stat
Glucose Level	Stat
Hemoglobin A1C	Stat
INR (PT (INR))	Stat
Lipid Panel	Stat
PTT	Stat
MEDICATIONS - CONSIDER LIPID LOWERING AGENTS, BETA BLOCKERS ACE/ARB AS CLINICALLY	

t-PA Protocol to Maximize Safety



Component	Order Details
--t-PA Infusion Orders	
Untreated baseline Systolic Blood Pressure must be less than 185 and Diastolic Blood Pressure less than 110	
t-PA, Alteplase Orders - Select BOTH orders below	
**** Total t-PA Dose: 0.9 mg/kg (Max dose: 90 mg) Administer 10% (0.09 mg/kg, Max dose 9 mg) as initial bolus, then the remaining 90% (0.81 mg/kg, Max dose 81 mg) IVPB over 60 minutes	
**** t-PA (Alteplase) weight based bolus, round to nearest tenth mg	
Alteplase (ALTEplase Bolus Inj)	0.09 mg/kg, Injection, IV Push Slowly, Once, Bolus Dose; (Max bolus dose 9 mg), follow with remaining Alteplase IVPB infusion as ordered
**** t-PA (Alteplase) weight based infusion following bolus	
Alteplase (Alteplase IVPB)	0.81 mg/kg, Injection, IVPB, Once, Infuse over 60 minutes; Max dose 81 mg, NURSE: Refer to Mixing/Administration Instructions in STRC
MD to RN Orders During t-PA Infusion	
Vital Signs	B P RR Every 15 minutes for 2 hours, after starting t-PA infusion
Neuro Checks	Every 15 minutes, for 2 hours after starting t-PA infusion
Call MD	Stop t-PA infusion if acute Neuro changes occur
Activity	Bedrest, HOB 30 Degrees, for 24 hours until swallowing evaluation
--Labetalol Orders	
** If giving tPA: target BP less than 185/110, otherwise target less than 220/120 times 48 - 72 hours. If BP greater than 220/120 for greater than 30 minutes, recommend treat with Labetalol 10 mg IV every 10 minutes until target BP. Maintain MAP greater than 100 to ensure cerebral perfusion. Use of pressors to be determined on a case by case basis in consultation with neurology.	
Labetalol Injection FIRST PRN order	
Labetalol (Labetalol Inj)	10 mg, Injection, IV Push Slowly, Every 15 minutes, Give over 1-2 minutes. First PRN order, if NO RESPONSE go to second PRN order, PR
Labetalol Injection SECOND PRN order (10 mg - 20 mg)	
Labetalol (Labetalol Inj)	mg, Injection, IV Push Slowly, Every 15 minutes, Give over 1-2 minutes; Dose range is 10-20 mg, DO NOT EXCEED 150 mg; this is second
*Labetalol Infusion (2 mg-8 mg) titrate to maintain SBP less than 180 and DBP less than 105	
NaCl 0.9% for Titration 200 mL + Labetalol Cont IV 200 mg	200 mL, mg/min, IV Infusion, Titrate For Hypertension, Routine, 6/21/2010 10:53, Titrate, mL 200
--Nicardipine Infusion	
NaCl 0.9% 250 mL + NiCARDipine Cont IV 25 mg	250 mL, Infusion, IV Infusion, 250 mL, 50 mL/hr, Infuse over 5 hr, Start at 5 mg/hr, Titrate in increments of 2.5 mg/hr (25 mL/hr) to max of 15
MD to RN Misc Instruction	If no satisfactory response for SBP persistently greater than 180 with Labetalol and/or if DBP greater than 140 on 2 or more readings, 5 to 10
--Nitroprusside Orders	
*Start Nitroprusside drip at 0.3 - 0.5 mcg/kg/min up to 8 mcg/kg/min to maintain SBP less than 180	
NaCl 0.9% for Titration 250 mL + Nitroprusside Cont IV 100 mg	250 mL, mcg/kg/min, IV Infusion, Titrate For Hypertension, Routine, 6/21/2010 10:53, Titrate, mL 250
** After start of Labetalol or Nitroprusside drips order the following:	
Vital Signs (T P R BP)	Every 15 minutes for 2 hours, After start of Labetalol or Nitroprusside drips, then call MD for further orders
Precautions	Bleeding, Apply manual pressure or pressure dressing to any active bleeding site(s)
Restrictions	Avoid Arterial or Venous puncture for 24 hours



Order set *nested* in general medicine admission order set

This reduces dependence on provider memory to directly access order set

MHA Self Assessment Tool

Mortality: Learning-in-Network (M-LiNk) HOSPITAL SELF-ASSESSMENT TOOL STRUCTURAL CRITERIA FOR MORTALITY REVIEW PROGRAM	Answer Format									
	Yes	No	NA	1 = nothing in place at this time 2 = informal process established 3 = formal process established - but not specifically for mortality reduction 4 = formal process established to address mortality reduction 5 = robust system/processes in place to prevent/detect/treat at-risk					Comments/ Additional Information
2. Culture of Quality Improvement for Mortality Reduction										
A. Leadership Oversight & Accountability: hospital assures leadership oversight and accountability to track mortality and implement opportunities for improvement	x	O	O	1	2	3	4	5	5
B. AIM for Mortality Reduction: hospital clinical and administrative leadership set clear, measurable aims for improvement to reduce in-patient mortality	x	O	O	1	2	3	4	5	5
1. Mortality Risk Assessment & Surveillance										
C. Mortality Diagnostic: the hospital has a process in place to monitor in-patient deat on a regular basis	x	O	O	1	2	3	4	5	5
D. Robust Measurement & Regular Feedback on Hospital Deaths: hospital has a proc in place for regularly collecting, reporting and communicating data on hospital deaths for the purpose of identifying opportunities for improvement	x	O	O	1	2	3	4	5	5
E. System-level Review: hospital integrates mortality review data with key performa indicators to identify system level variables to reveal opportunities for improvement	x	O	O	1	2	3	4	5	4
3. Standardization and Reliability of Clinical Processes										
F. Event Detection & Recognition: hospital has a process in place to ensure full participation for identifying and addressing triggers for patients, conditions and even at greatest risk of in-patient mortality	x	O	O	1	2	3	4	5	3
G. Standardized Communication Protocols: hospital uses standardized communicatio protocols to transfer information on critical events in a timely and effective manner	x	O	O	1	2	3	4	5	4
H. Use of Interventions to Reduce Hospital Acquired Infections: hospital uses evidence based interventions to prevent, and effectively treat those clinical conditions and ever most associated with in-patient mortality	x	O	O	1	2	3	4	5	5
I. Use of Interventions to Address Adverse Events & Medication Management: use of prompts, triggers and/or standardized order sets to address potential adverse events	x	O	O	1	2	3	4	5	4
J. Appropriateness of the Setting of Care: protocols in place to effectively address end of-life care within the hospital and community	x	O	O	1	2	3	4	5	3
Instructions: add up total number of points from the response to each of the 10 key criteria to estimate the hospital's Stage of Mortality Program Development	**Total**			43					◆ Stage 1: ?15 points ◆ Stage 2: 16-25 points ◆ Stage 3: 26-35 points ◆ Stage 4: 36-45 points ◆ Stage 5: 46-50 points

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Mortality Review Follow Up

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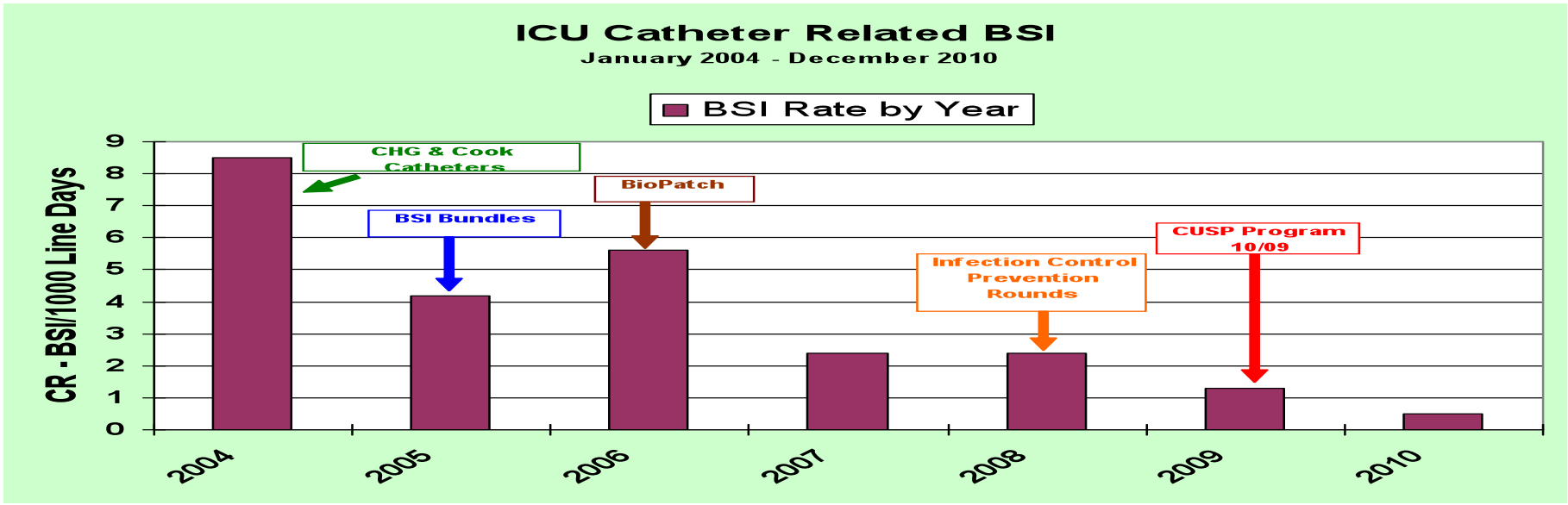
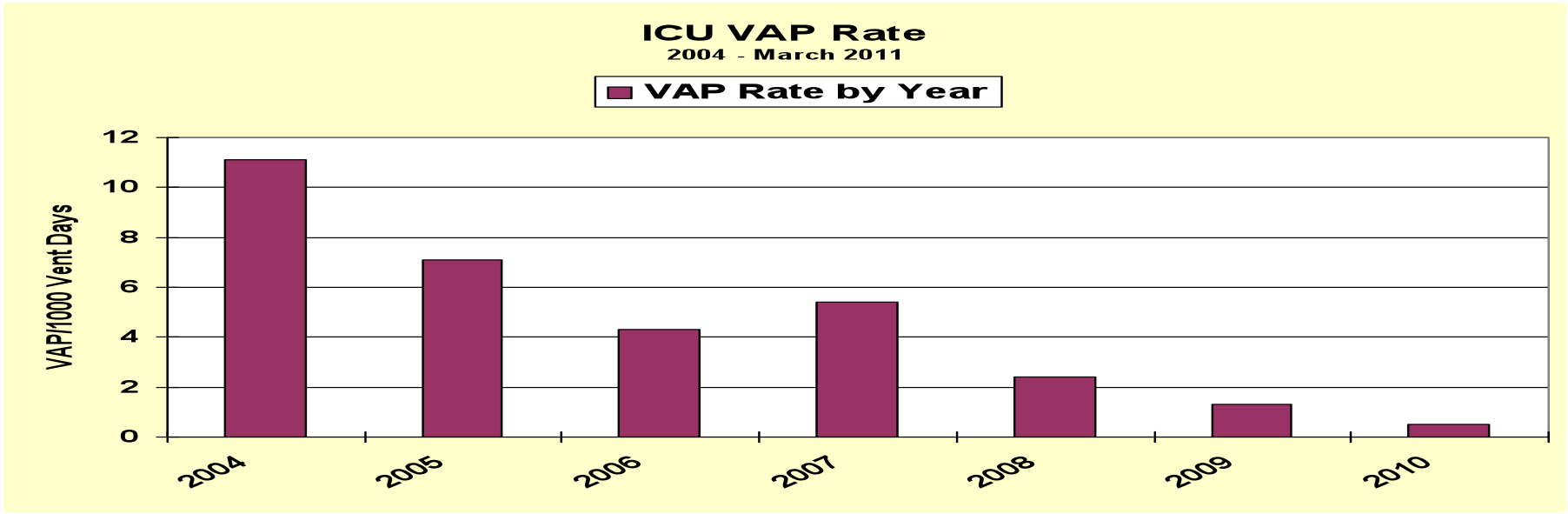
	ICU	NON-ICU Care
Comfort care only	8 pts (16%) **3 pts (7%)** Lower is Better	10 pts (20 %) **21 pts (42%)** Higher is Better
Not Comfort care only	7 pts (14%) **12 pts(24%)** Higher is Better	25 pts (50%) **14 pts (28%)**





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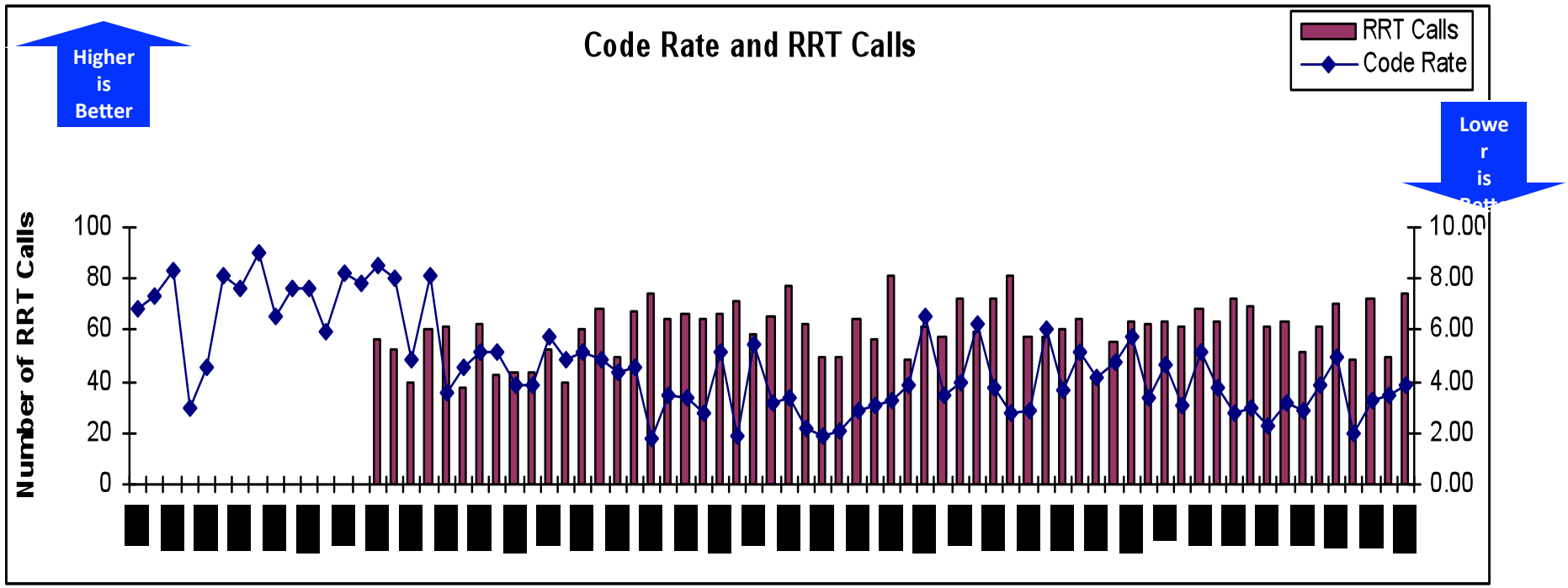
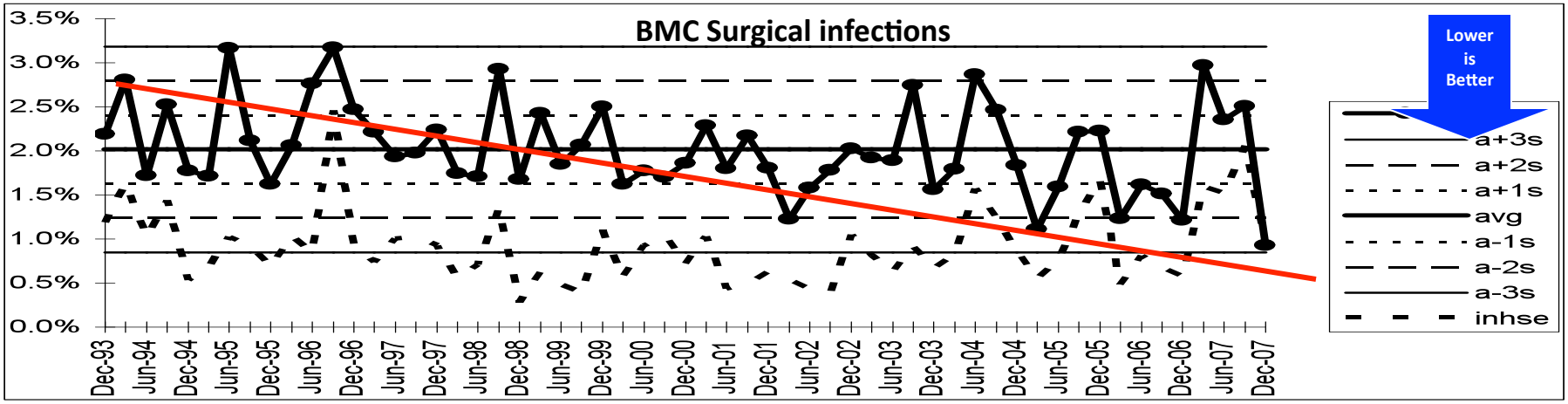
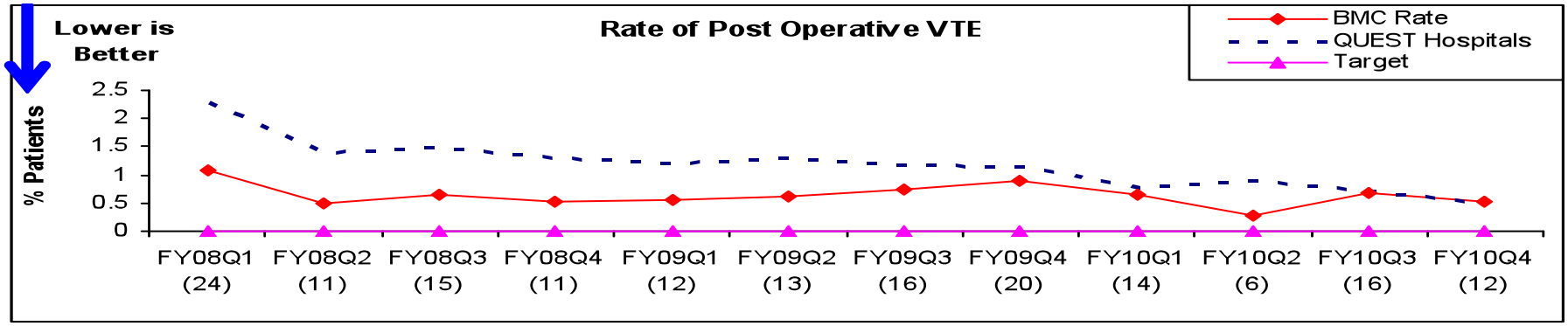


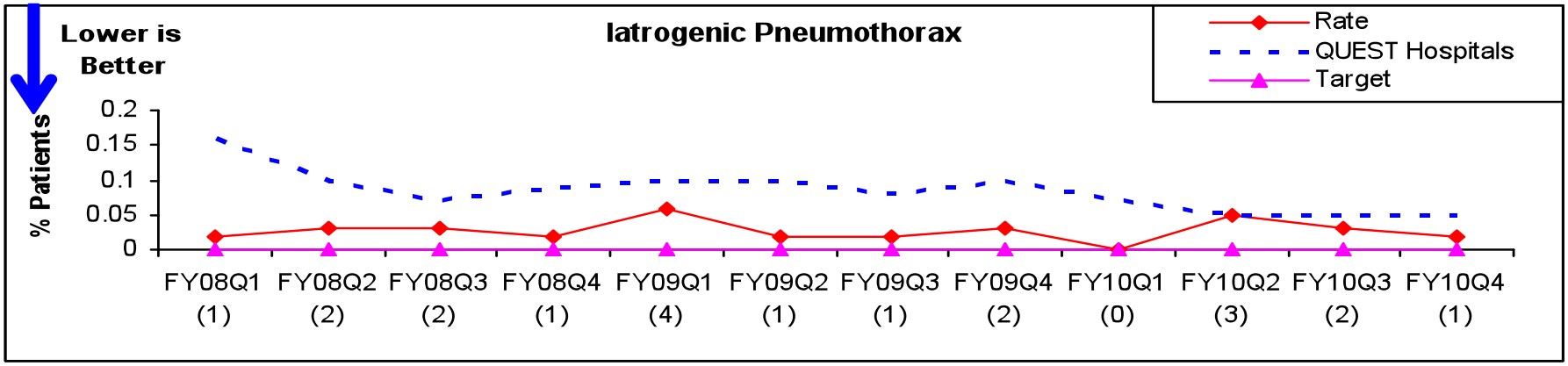
Key Results

- Adult RRT implemented in March 2006 - - >3000 calls to date
- Pedi RRT implemented in Sept 2007 - - 40 calls to date
- Overall code rate decreased from 8/1000 pt days to 3/1000 pt days
- Pre RRT: 76% of codes were non cardiac codes, now 10% of codes are noncardiac
- CIS ➔ EWS earlier identification of pts as risk

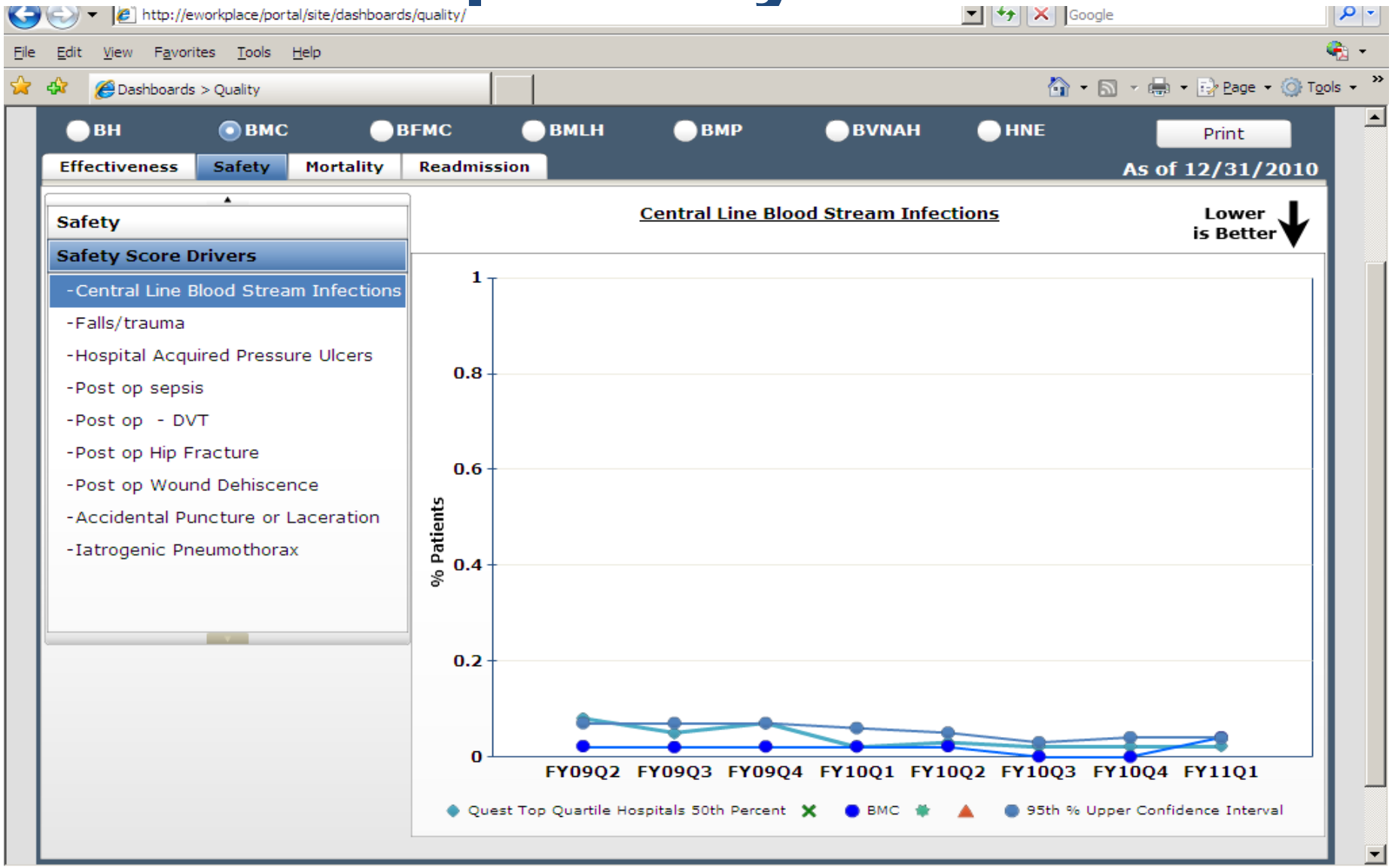
- Staff satisfaction has been very high since implementation;
  "Best thing BMC has ever done for patients and staff"
- Family activation in place –small numbers but there if needed


BMC Surgical infections
Lower is Better
3.5%
3.0%
2.5%
2.0%
1.5%
1.0%
0.5%
0.0%
Dec-93
Jun-94
Dec-94
Jun-95
Dec-95
Jun-96
Dec-96
Jun-97
Dec-97
Jun-98
Dec-98
Jun-99
Dec-99
Jun-00
Dec-00
Jun-01
Dec-01
Jun-02
Dec-02
Jun-03
Dec-03
Jun-04
Dec-04
Jun-05
Dec-05
Jun-06
Dec-06
Jun-07
Dec-07
a+3s
a+2s
a+1s
avg
a-1s
a-2s
a-3s
inhse

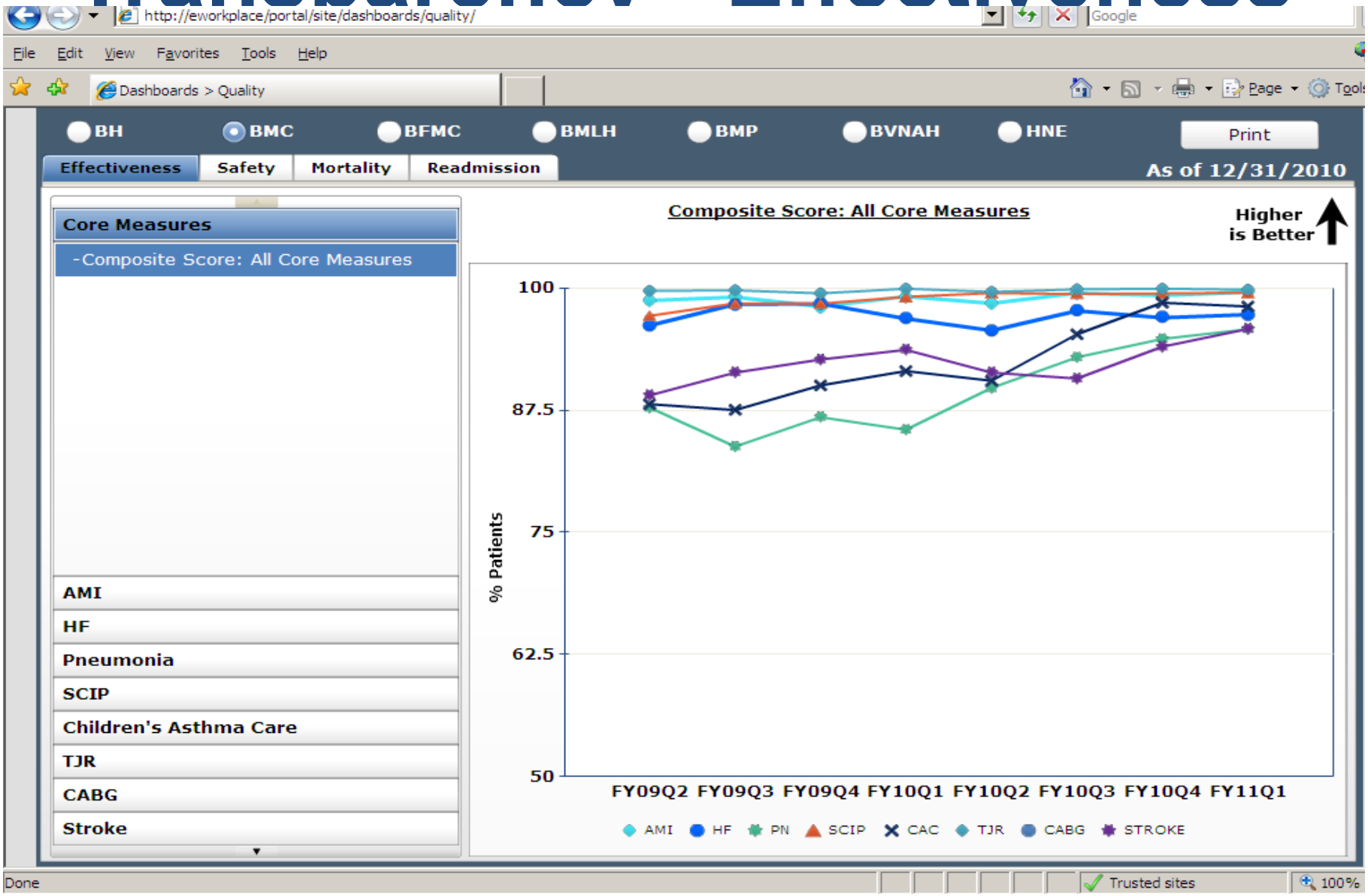

Lower is Better
Rate of Post Operative VTE
BMC Rate
QUEST Hospitals
Target
% Patients
2.5
2
1.5
1
0.5
0
FY08Q1 (24)
FY08Q2 (11)
FY08Q3 (15)
FY08Q4 (11)
FY09Q1 (12)
FY09Q2 (13)
FY09Q3 (16)
FY09Q4 (20)
FY10Q1 (14)
FY10Q2 (6)
FY10Q3 (16)
FY10Q4 (12)


Lower is Better
Iatrogenic Pneumothorax
Rate
QUEST Hospitals
Target
% Patients
0.2
0.15
0.1
0.05
0
FY08Q1 (1)
FY08Q2 (2)
FY08Q3 (2)
FY08Q4 (1)
FY09Q1 (4)
FY09Q2 (1)
FY09Q3 (1)
FY09Q4 (2)
FY10Q1 (0)
FY10Q2 (3)
FY10Q3 (2)
FY10Q4 (1)

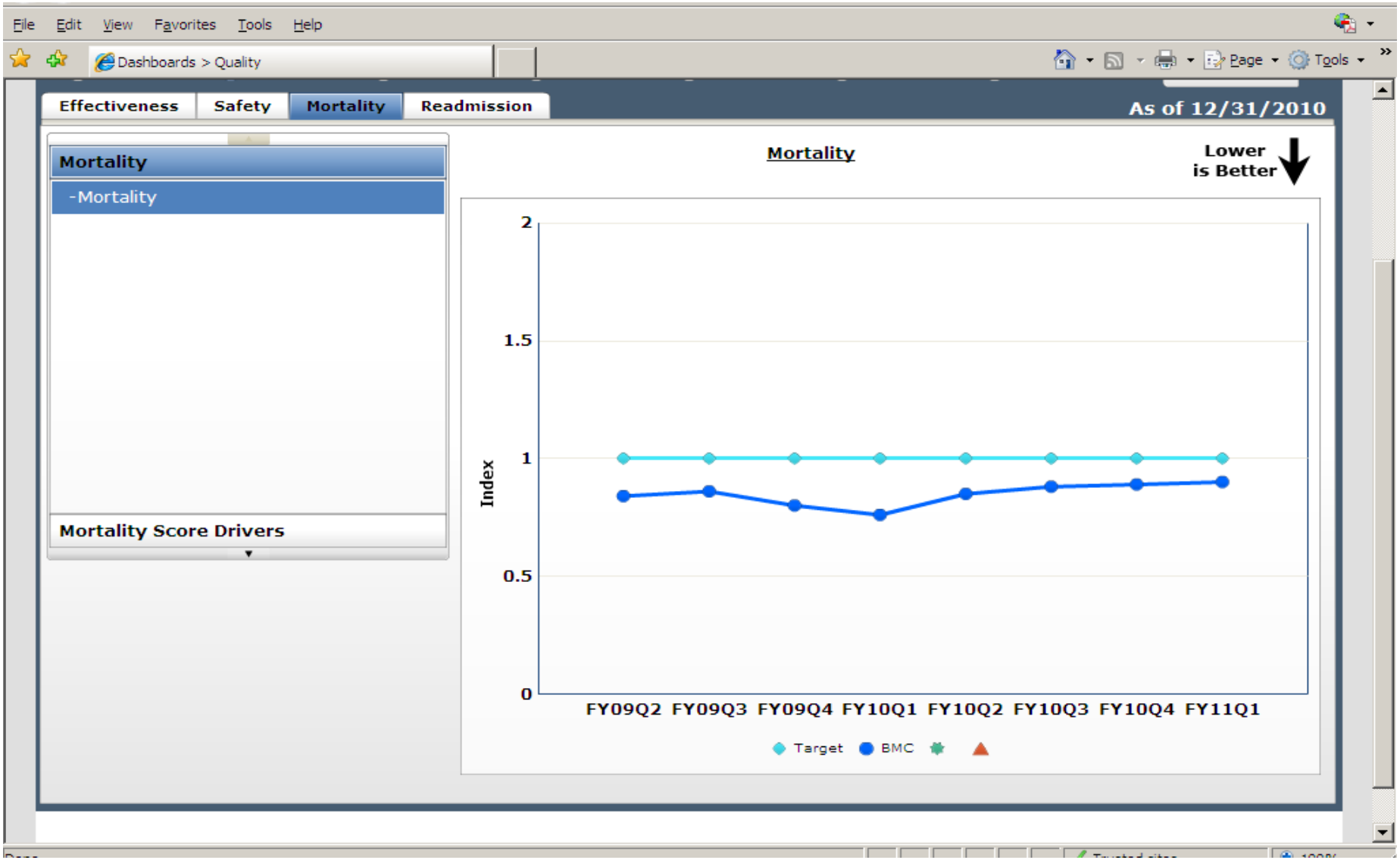
Transparency - Harm



Transparency - Effectiveness



Transparency - Mortality



Stay Vigilant

- Review Mortality Charts
  - Appropriate documentation
  - Validation and verification
  - ?? Issue
    - Process =>PI teams
    - Person => Peer Review
  - RCA
    - Lessons identified
    - Action plans

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Visit the Baystate Health Quality Report at www.baystatehealth.org

Hospital Mortality Program
A Model for Tracking & Learning from Hospital In-patient Deaths

Elmy Trevejo, RN, MPH
Senior Consultant for Quality Programs
David Rosales, MBA
Deland Fellow in Healthcare & Society
Brigham and Women's Hospital

MHA Massachusetts Hospital Association
The leading voice for hospitals.

BWH Mortality Review

May 2011

Presenters:

Elmy Trevejo (BWH Center for Clinical Excellence)

David Rosales (Administrative Fellow)

MHA Massachusetts Hospital Association

The leading voice for hospitals.

BWH BRIGHAM AND WOMEN'S HOSPITAL

BWH is implementing a standardized, hospital-wide process to review *all inpatient deaths*

Objectives

Institution-level

- Measure number of preventable deaths
- Identify system-wide issues for improvement
- Initiate and guide improvement efforts to reduce inpatient mortality

Clinician-level

- Give our caregivers an opportunity to disclose concerns related to quality/ safety and request M&Ms
- Increase awareness of systems issues
- Provide opportunity to request peer support

Where We Started: Inventory

- The majority of clinical departments and divisions conduct some type of **routine** review; **however**:
  - Not all areas review all deaths
  - Case identification procedures and data collection methods among departments are **heterogeneous**
  - Purpose of departmental M&M is **primarily educational**
  - Data collected currently does **not focus on system-wide** improvement and is often **not disseminated** to other departments

Consensus Building

Quality Assurance/Risk Management (QA/RM) Committee

Quality Leadership Council

Quality & Safety Directors

- **Nursing Leadership**
- **Residency Program Directors**
- **ICU Leadership Committee**

- **Care Improvement Council (Board Sub-Committee)**
- *Future areas:*
  - *Residency Programs*
  - *Individual Service Lines*

Mortality Review Process:
Designed from Consensus on Guiding Principles

Design Area	Consensus Principle
Scope	Process must cover **all deaths**
Source	**Front-line clinician input** can provide more information than a centralized process (3rd party clinician review) Must include **entire care team** (e.g., attending, house officers, nursing)
Speed	Must be **quick and efficient** (many deaths at BWH are not preventable)
Infrastructure	Data collection must be **electronic**
Timing	Completed **within 48-72 hours** after the death (memory)
Reporting	Data should be **aggregated and trended** across all depts
Additional Review	Some cases may require **further inquiry** or may need to be reviewed by **other departments**

Information Collected in Review

Systems-level Events/Issues

Healthcare Acquired Infections
eg, VAP

Selected Complications
eg, VTE

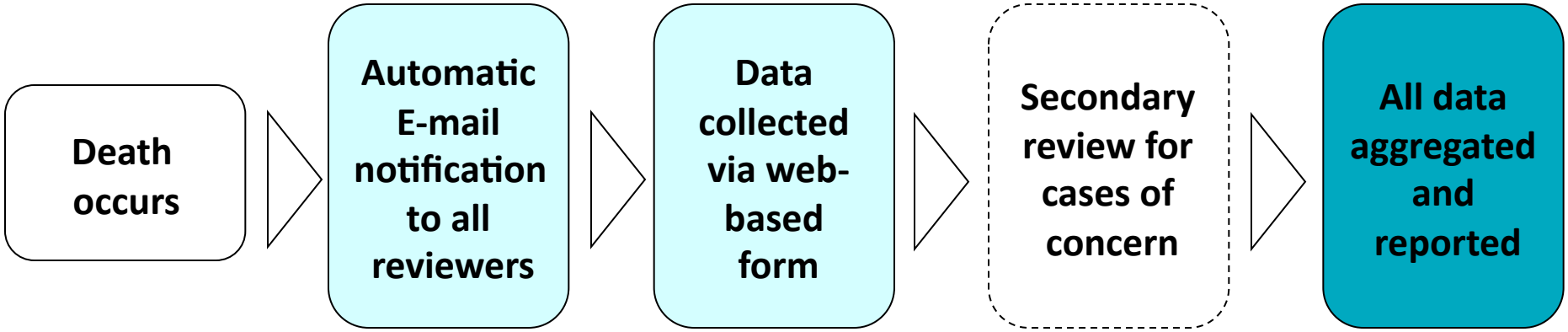
Delays
eg, receiving blood work

Communication Issues
eg, floor to ICU

Other Information

- Opinion on **preventability** of death
- **End-of-life** related information
- Short clinical **summary**
- Ability to request **M&M**
- Ability to request **peer support**
- **Suggestions** for systems improvement

Mortality Review Process



Admitting officially discharges patient

Contains customized link taking clinicians directly into that patient's review

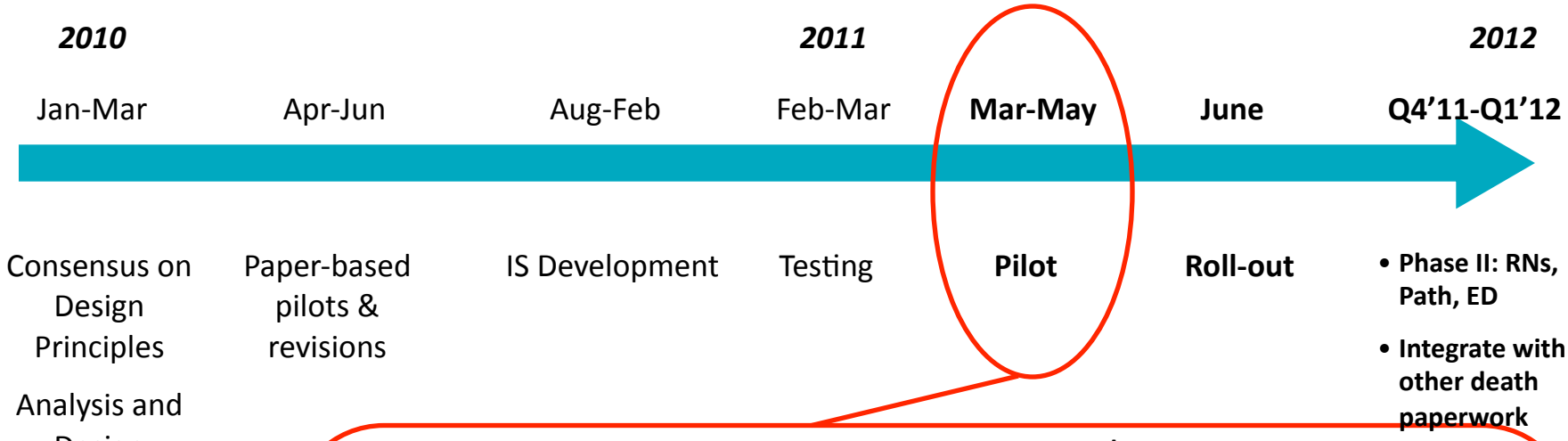
Should take approx. 5 min.; minimal free text; primarily 'check boxes'

Cases scored preventable or those with several identified issues

Other Features

- **Peer-review** protected
- **Confidential**: not shared with other members of the care team
- Questions should be answered based on **knowledge/memory** of case (chart review not required)
- Clinician can suggest **additional reviewers** easily through form

Timeline



PILOT (Began March 8th)

- **Goals**:
  - User interface: ensure ease of use and clarity of questions
  - Define implementation process
  - Confirm completion and turn-around times

- **Scope:** *MICU, General Medicine, Trauma/Burn, Cardiac Surgery, Neurosurgery*
  - Represents ~40% of all inpatient deaths at BWH

Pilot Highlights & Preliminary Data

Goal	Findings
User interface: ensure ease of use and clarity of questions	• Continue to refine formatting and content • Purpose, content, and process of review is self-explanatory
Define implementation process	• No training required
Confirm completion and turn-around times	*Preliminary Data* • Turn around times well below 72 hr target (median: 19 hrs.) • High response rate (> 90%) • Time-to-fill-out < 10 min (median 6 min.)

Success Factors

- **Consensus** building with key stakeholders and agreement on guiding design principles; clinical **champions** within each area
- Collaborative relationship with highly responsive, engaged, and skilled **IS team**
  - Iterative design/development process, with usability a central priority
  - Flexibility to adapt content and incorporate user feedback during pilot
- **Measurement** and **Reporting**
  - Designed with measurement in mind
  - Data access/reporting owned by business area (Center for Clinical Excellence)
- Starting with ***mortality*** (vs morbidity):
  - Clear patient population
  - Universal appeal with providers: "if a patient dies at our institution; we can give 5 minutes of our time"

Next Steps

- Process/criteria for secondary reviews (cases of concern)
- Reporting process
  - Reporting of results throughout various clinical quality governance bodies
  - Process to initiate improvement efforts based on systems-level issues that will emerge from the data
- Phase II areas: Nursing, Pathology, ED

Appendix

Email Notification

From: BWH Mortality Review
Sent: Monday, May XX, 2011
To: [clinician name]
Subject: Mandatory Mortality Review - Action Required

Dear Mary,

As part of BWH's quality and safety efforts, we are now routinely asking team members to provide their opinion in all cases in which a patient dies at BWH.

John Doe, 1234567 passed away on 5/xx/11.

You have been identified as one of the clinicians that cared for this patient.

Please click on the following link to complete a brief review for this patient. This survey should take approximately **3-5 minutes** to complete and is **mandatory**. You are asked to complete this based on what you know and a chart review is not required. The review must be completed within 72 hours of the death.

All of your responses fall under peer-review protection, will remain confidential, and will not be shared with other members of the clinical team. The success of resulting improvement efforts depends entirely on what you report. Please take this as an opportunity to candidly express any concerns.

Click Here to review the patient death
If you believe you are receiving this email notification in error please click on the link below.

Click Here to assign review to another clinician
For any questions or concerns, please e-mail us at bwhmortalityreview@partners.org.
Thank you,
BWH Quality and Safety

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Summary

- Mortality Program Self-Assessment tool is an instrument for hospital's to use to assess **internal** opportunities for reducing in-patient mortality
- The associated structures and processes are ideally linked to a strategic vision and leadership of specific aims for mortality reduction
- MHA seeks to find and share the frameworks, tools, and learning to help hospitals continue to improve mortality reduction efforts.

M-LiNk – Next Steps

- Focus on Hospital Mortality - Structures & Processes continues with:
  - Jun 3rd Mini-Conference: (sponsored by BoRM) *Engaging Physicians in Health Care Facility Patient Safety and Quality Programs, Worcester MA*

M-LiNk – Next Steps

- We will contact you to complete an online survey of your feedback from participation in this session
- Please visit MHA's website to view the schedule of upcoming offerings and related resources

Thank you for your participation.

Questions?