Translating Institutional Goal-Setting and Benchmarking to the Bedside: Dashboards, Clinical Service Groups and Goal Sheets

The Quality Colloquium on the Campus of Harvard University
August, 2006
Overview

I. Prioritizing Organizational Goals

II. Developing a Quality Structure to Achieve Organizational Goals

III. Translating Organizational Goals into Action: Utilizing Dashboards to Drive Change

IV. Integrating Performance Improvement into Daily Activities: Daily Goal Sheets
Prioritizing Organizational Goals

- Patient Safety
- Congruent with the mission, vision, values, and strategic plan of the institution
- High-volume diagnoses, procedures, processes
- High-cost diagnoses, procedures, processes
- Problem-prone procedures, processes
- Input from external sources (licensing, regulatory agencies)
Barriers To Effective Integration

- Hospital
  - Diversity of patient populations
  - Diversity of healthcare populations
  - Crisis management/Day-to-day imperatives
  - Fiscal constraints
  - Physician culture

- Academic Medical Center
  - Lack of alignment between School of Medicine and Hospital
  - Clinical service chiefs are academic department heads
  - Hospital physicians are primarily faculty
**GOALS**  
Performance Improvement Activities & Measurements

**PRIORITIZATION**  
Performance Improvement Priorities

**STRATEGY**  
Strategic Initiatives

**FOUNDATION**  
Mission, Vision, Values

- Public Reporting Data/JCAHO & CMS: Heart, Medicine, Emergency Medicine, Obstetrics, Pediatrics
- Internal Reporting/Hospital Dashboards for Clinical Service Groups and other Services/Departments

- Patient Safety
- IHI’s 100,000 Lives Saved Campaign
- Surviving Sepsis Campaign
- Heart/Cancer Services
- Perinatal Services
- Patient Satisfaction
- Required Measures
- CARE effort

- Performance Standards
  - Enhance Quality Program
  - Implement Electronic Patient Record
  - Implement Strategic Plan
  - Improve Satisfaction
  - Meet Financial Targets
Malcolm Baldrige National Quality Award: A System Perspective

Organizational Profile: Environment, Relationships, and Challenges

1. Leadership
2. Strategic Planning
3. Focus on Patients, Other Customers, and Markets
4. Measurement, Analysis, and Knowledge Management
5. Staff Focus
6. Process Management
7. Organizational Performance Results
Developing a Quality Structure to Achieve Organizational Goals

**What didn’t work:**
- Hospital-Within-Hospital (HWH) Structure
  - Led by administrative triad (Physician, Nurse, Operations Administrator)
  - Quality structure supported HWH Quality Councils led by administrative triad
  - HWH Quality Councils overseen by Executive Quality Council

**Why it didn’t work:**
- Those closest to operational processes not involved in performance improvement efforts and measurement
- Not enough specificity in terms of indicator development and measurement to identify relevant opportunities for improvement
- Disparate databases not conducive to obtaining readily available data for performance improvement (Solution: Create Decision Support Services Dept)
- Attempting to measure “the universe” for all patient populations rather than using Pareto principle (80/20 rule)
Modalities to Overcome Barriers

- Structure
- Measurement
- Expression of Measurement
- Dissemination
- Consistency
- Feedback
- Response
Executive Leadership Changes Led to Structural Changes
  - Administrative Table of Organization
  - Quality Management Structure
    - Formation of Quality Committee of the Governing Body
    - Formation of Quality Coordinating Group
      - Reviews organizational data
      - Identifies opportunities for improvement
      - Delegates responsibility to appropriate quality committee for follow-up and improvement
  - Formation of Clinical Service Groups
  - Development of Institutional and Clinical Service Group Dashboards
  - Evolution to identify relevant indicators for key processes through service groups
Measurement: Expectations for Clinical Service Groups

- Ownership
- Derivation
- Iteration
- Feedback
- Response
Clinical Service Groups (CSGs)

- Interdisciplinary service group consisting of physicians, nurses, administrators, ancillary, support staff, clinical educators and additional health care professionals, as necessary

- Focused on quality, operations, service, utilization, and financial improvement

- Performance elements reflect the above areas for improvement
Expression of Measurement: Dashboards

- Elements derived from Clinical Service Groups/Regulatory requirements
- Clarity/Focus (green, yellow, red)
- Explicit trending
- Benchmarks
- Data dictionary
  - Numerator definitions
  - Denominator definitions
  - Target sources
Expression and Dissemination of Measurement Through Quality Dashboards

- JCAHO/ORYX Core Measures
- CMS Public Reporting Project
- Service Group Specific Indicators
- Other Indicators and Opportunities for Improvement Prioritized Using the Following Criteria
  - Quality focus
  - Patient Safety
  - Meets mission and strategic goals of the hospital
  - High-risk
  - Problem-Prone
  - High Volume
  - High-cost
- Intranet Access/Direct E-mail
Expression of Measurement Through Quality Dashboards

- **JCAHO/ORYX Core Measures Sets**
  - Acute Myocardial Infarction
  - Pregnancy and Related Conditions
  - Community Acquired Pneumonia

- **CMS Public Reporting Project:**
  - Acute Myocardial Infarction
  - Community Acquired Pneumonia
  - Congestive Heart Failure
  - Future Emphasis
    - Patient Satisfaction
    - Surgical Care Improvement
    - Linkage to Pay for Performance (Pay for Quality)
Translating Organizational Goals Into Action: Utilizing Dashboards to Drive Change

- What works:
  - Involving those closest to processes that are being improved
  - Multiple disciplines involved in key indicator development
  - Access to multiple databases using one source (Decision Support Services)
  - Collecting “actionable” data
  - Demonstrating value to improve organizational performance and gain buy-in
  - Recognize and celebrate successes
Translating Organizational Goals Into Action: Utilizing Consistent Dashboards to Drive Change

Roadmap to Developing Dashboards
  - Utilized “Value Compass” Approach
    - Clinical Outcomes
    - Functional Outcomes
    - Patient/Employee/Customer Satisfaction
    - Administrative/Financial Outcomes
  - Aligned strategic goals with quality goals
  - Identified key metrics associated with strategic quality goals using prioritization mechanism through service group structure
    - Top-down and bottom-up approach for identifying key metrics by service
    - Utilized benchmarking and evidence-based literature to identify key metrics and targets
Translating Organizational Goals Into Action: Utilizing Consistent Dashboards to Drive Change

- **How do we populate dashboards?**
  - Data collected:
    - Manually
    - Electronically
    - Hybrid
  - Data submitted to Quality Management Department or Decision Support Services Department as data repository
  - Key individuals responsible for dashboard population

- **How is dashboard information shared?**
  - Clinical Service Group liaisons (Quality Management representatives) bring updated dashboards to Clinical Service Group meetings
  - Participants at Clinical Service Group meetings share and distribute dashboards at Joint Practice meetings, staff meetings, team meetings and other relevant forums
  - Distributed electronically to clinical chairs, executive staff and “C” Suite
  - Data are posted on performance improvement boards on the units
  - Shared at Quality Committee of the Governing Body meetings as well as with the Governing Body itself.
Decision Support Services: “One Stop Shop” for Consistent Data and Analysis

- **Access to all relevant databases**
  - University HealthSystem Consortium (UHC)
  - Healthshare 2
  - Solucient
  - Press Ganey
  - Patient Complaints
  - Patient Safety Net
  - Service-Specific
    - Surgery: National Surgical Quality Improvement Program
    - Trauma Registry
    - Cardiology Databases

- **Future State**
  - Data warehouse with distributed access
Decision Support Services

- Assists to Support Quality-Driven Initiatives
  - Performance Standards/Dashboard elements
  - Clinical Resource Management
    - Identifying areas for potential improvement
    - Focused “drill downs” for follow-up analyses
  - Critical Care
    - SICU, PICU, MICU: IHI Collaborative project
    - MICU: Data collection/analyses; data manager
  - Physician Feedback Reports (for quality review and recredentialing)
  - Ad-hoc analyses for Clinical Service Groups, CQI Teams, Hospital Initiatives
Data/Information Feedback and Communication

Governing Body

Quality Committee of the Governing Body

Nursing Forums

Physician Forums

Administrative Forums

Clinical Service Groups via Dashboards

CQI Teams
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<th>Operations</th>
<th>Target</th>
<th>Jun-05</th>
<th>Jul-05</th>
<th>Aug-05</th>
<th>Sep-05</th>
<th>Oct-05</th>
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## Stony Brook University Hospital - Executive Summary Dashboard

"Confidential and required to be collected and maintained pursuant to Public Health Law Sections 2805 - j,k,l and m."

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<th>Core Measures - Acute Myocardial Infarction</th>
<th>Target</th>
<th>Average Rate - SBUH Q2 2003</th>
<th>Average Rate - SBUH Q3 2003</th>
<th>Average Rate - SBUH Q4 2003</th>
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<th>Average Rate - SBUH Q2 2004</th>
<th>Average Rate - SBUH Q3 2004</th>
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Updated 7/24/06
Consistency

- Measurement expression (dashboards)
- Overlap of measurements on separate dashboards when performance is shared
- Dashboard elements consistent over time
- Data dictionary is explicit
- Ownership
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<tr>
<td>Room cleaning turnaround time on discharge</td>
<td>&lt;=60 min</td>
<td>61</td>
<td>59</td>
<td>57</td>
<td>56</td>
<td>58</td>
<td>58</td>
<td>57</td>
<td>57</td>
<td>58</td>
<td>56</td>
<td>59</td>
<td>59</td>
<td>59</td>
</tr>
<tr>
<td>Abandonment rate for telephone operators (total number of calls)</td>
<td>&lt;=10%</td>
<td>N/A</td>
<td>7%</td>
<td>6.8%</td>
<td>8.1%</td>
<td>6.9%</td>
<td>7%</td>
<td>7%</td>
<td>9.54%</td>
<td>7.12%</td>
<td>7.43%</td>
<td>6.53%</td>
<td>5.21%</td>
<td>6.1%</td>
</tr>
<tr>
<td>Purchasing - Commodities</td>
<td>Target</td>
<td>Aug-04</td>
<td>Sep-04</td>
<td>Oct-04</td>
<td>Nov-04</td>
<td>Dec-04</td>
<td>Jan-05</td>
<td>Feb-05</td>
<td>Mar-05</td>
<td>Apr-05</td>
<td>May-05</td>
<td>Jun-05</td>
<td>Jul-05</td>
<td>Aug-05</td>
</tr>
<tr>
<td>Percentage of orders (under $75,000) completed within 5 days</td>
<td>&gt;=85%</td>
<td>90.76%</td>
<td>93.09%</td>
<td>90.99%</td>
<td>87.96%</td>
<td>91.75%</td>
<td>92.38%</td>
<td>92.04%</td>
<td>91.93%</td>
<td>88.91%</td>
<td>89.91%</td>
<td>86.72%</td>
<td>87.61%</td>
<td>90.29%</td>
</tr>
<tr>
<td>Percentage of orders (under $75,000) completed same day the requisition went on system</td>
<td>&gt;=20%</td>
<td>16.85%</td>
<td>22.86%</td>
<td>26.9%</td>
<td>20.98%</td>
<td>22.52%</td>
<td>23.46%</td>
<td>24.40%</td>
<td>22.98%</td>
<td>29.69%</td>
<td>23.24%</td>
<td>21.24%</td>
<td>23.38%</td>
<td>21.41%</td>
</tr>
<tr>
<td>Percentage of orders (under $75,000) completed in longer than 5 days</td>
<td>&lt;=10%</td>
<td>9.24%</td>
<td>6.91%</td>
<td>9.91%</td>
<td>12.64%</td>
<td>8.25%</td>
<td>7.62%</td>
<td>7.96%</td>
<td>8.07%</td>
<td>11.09%</td>
<td>10.09%</td>
<td>13.28%</td>
<td>12.39%</td>
<td>9.71%</td>
</tr>
<tr>
<td>Percentage of approved Local Purchase Authorizations approved versus number requested</td>
<td>100%</td>
<td>6.7%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>83%</td>
<td>78%</td>
<td>89%</td>
<td>91.6%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>92%</td>
</tr>
<tr>
<td>Percentage of Non-Contract Equipment Orders (over $20,000) that were processed within 7 weeks or less</td>
<td>&gt;=85%</td>
<td>98.79%</td>
<td>99.86%</td>
<td>99.87%</td>
<td>99.72%</td>
<td>99.87%</td>
<td>99.82%</td>
<td>100%</td>
<td>100%</td>
<td>99.72%</td>
<td>98.39%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Information Technology - Cerner</td>
<td>Target</td>
<td>Aug-04</td>
<td>Sep-04</td>
<td>Oct-04</td>
<td>Nov-04</td>
<td>Dec-04</td>
<td>Jan-05</td>
<td>Feb-05</td>
<td>Mar-05</td>
<td>Apr-05</td>
<td>May-05</td>
<td>Jun-05</td>
<td>Jul-05</td>
<td>Aug-05</td>
</tr>
<tr>
<td>Application uptime: percentage of availability based on a 24/7 operation</td>
<td>&gt;=99.0%</td>
<td>98.79%</td>
<td>99.86%</td>
<td>99.87%</td>
<td>99.72%</td>
<td>99.87%</td>
<td>99.82%</td>
<td>100%</td>
<td>100%</td>
<td>99.72%</td>
<td>98.39%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Unplanned downtime: number of unplanned downtime occurrences</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Information Technology - Help Desk</td>
<td>Target</td>
<td>Aug-04</td>
<td>Sep-04</td>
<td>Oct-04</td>
<td>Nov-04</td>
<td>Dec-04</td>
<td>Jan-05</td>
<td>Feb-05</td>
<td>Mar-05</td>
<td>Apr-05</td>
<td>May-05</td>
<td>Jun-05</td>
<td>Jul-05</td>
<td>Aug-05</td>
</tr>
<tr>
<td>Call Abandoned Rate: percentage of abandoned calls to total received calls</td>
<td>&lt;=15%</td>
<td>13.2%</td>
<td>11.0%</td>
<td>14.9%</td>
<td>15.1%</td>
<td>10.4%</td>
<td>14.9%</td>
<td>13.9%</td>
<td>9.7%</td>
<td>10.8%</td>
<td>8.9%</td>
<td>8.7%</td>
<td>8.6%</td>
<td>11.1%</td>
</tr>
<tr>
<td>Routine (problem) ticket resolution turnaround time: percentage of routine tickets closed on the same day</td>
<td>&gt;=98.0%</td>
<td>92.3%</td>
<td>95.0%</td>
<td>85.8%</td>
<td>83.1%</td>
<td>84.2%</td>
<td>Under review</td>
<td>99.4%</td>
<td>99.5%</td>
<td>99.8%</td>
<td>99.7%</td>
<td>99.8%</td>
<td>99.8%</td>
<td>99.7%</td>
</tr>
</tbody>
</table>
Dashboard Development

- Clinical Service Group Dashboards
  - Heart
  - Emergency Medicine
  - Obstetrics
  - Pediatrics
  - Medicine
  - Trauma
  - Neurosurgery
  - Orthopedics
  - Transplant & Urology
  - Cancer
  - Psychiatry
  - Operating Room
  - Surgery
  - GI Medicine/Surgery
  - ICU

- Departmental Dashboards
  - Laboratories
  - Radiology
  - Physical Therapy/Occupational Therapy
  - Support Services

- Non-Clinical Dashboards
  - Admitting
  - Patient Accounts
  - Time & Attendance
  - Cost & budget
  - Purchasing
  - Labor Relations
  - Human Resources
  - Facilities
  - Information Technology

- Miscellaneous
  - Medical Quality Assurance
    - Nutrition Committee
    - Pharmacy & Therapeutics Committee
    - Surgical Review Committee
    - Medical Record Committee
    - Infection Control Committee
  - Patient Satisfaction
Response: Modalities of Change Management

- Consensus building
- Dashboard expression
- CQI efforts
- Benchmarking/collaborative projects
- Regulatory initiatives
Response: CQI Activities

- **Facilitation**
  - **Clinical Service Groups**
    - Dashboard development/maintenance
    - Coordinate performance improvement activities
  - **CQI Teams**
    - IHI Collaborative: Reducing Complications in the SICU, PICU, MICU, and NICU
    - Code H Team
    - Rapid Response Team
    - Mislabeled/Unlabeled Specimens Team
    - Deep Vein Thrombosis Prophylaxis Team
    - ED Patient Satisfaction Steering Committee
    - UHC Surgical Services Initiative
      - Supply expenses
      - Facility utilization
  - **Root Cause Analyses/Failure Mode and Effects Analyses**
    - Resident to Resident Communication: Patient Handoffs on Medicine Service
Response: CQI Activities

- Institute for Healthcare Improvement’s 100,000 Lives Saved Campaign
  - Deployment of rapid response teams (RRTs)
  - Delivery of reliable, evidence-based care for acute myocardial infarction (AMI)
  - Prevention of adverse drug events
  - Prevention of central line infections
  - Prevention of ventilator associated pneumonia
  - Prevention of surgical site infections
Response: CQI Team Efforts For AMI Care

- AMI: ED Door to Balloon Team
  - ACS guideline development/implementation
  - Developed/implemented Code “H” process
Response: Benchmarking/Collaborative Projects

- Institute for Healthcare Improvement’s Reducing Complications in the ICU Collaborative
- Institute for Healthcare Improvement’s Saving 100,000 Lives Campaign
- Institute for Healthcare Improvement’s Critical Care Collaborative
CQI Team Efforts: Benchmarking/ Collaborative Projects

Implementing an Idealized Model for Critical Care: Preventing Harm and Promoting Healing – November 2005 Collaborative

- Communication and Collaboration of a Multi-disciplinary team (continued)
- Reducing Complications from Ventilators (continued)
- Reducing Complications from Central Lines (continued)
- Improved Glucose Control
- Reducing Mortality due to Severe Sepsis in collaboration with the Surviving Sepsis Campaign
Prevent Central Line Infections

- Hospital-wide standardized central line kit includes:
  - Gown
  - Cap
  - Mask
  - Full Body Drape 55" x 77" w/ 4" Fenestration
  - CHG Prep
  - Biopatch Dressing
  - Tegaderm Dressing 10cm x 12cm
  - Central Line Audit Tool
  - Description of the Bundle

- Early removal
- Daily review of necessity
- Insertion audits
- Feedback regarding compliance
Integrating Performance Improvement Into Bedside Activities: Daily Goal Sheets

- Change Management at the Bedside:
  IHI Reducing Complications in the ICU – Collaborative September 2004
  - Daily Goal Sheets (at bedside)
  - Multidisciplinary Rounding (at bedside)
  - Team Meetings
Establish Daily Goals

- Establish appropriate, explicit daily goals for patients
  - DVT/PUD prophylaxis
  - Head of bed ≥ 30°
  - Nutritional goals
- Use daily goal sheet to document and communicate
  - Used in conjunction with rounding
- Use daily goal sheet to evaluate patient safety risks
  - Assessment to wean
  - Assessment of need for central line (early removal)
  - Sedation vacation
  - Sepsis screen

Modified from 2004 Institute for Healthcare Improvement
Daily Goals

- Daily goals and plan of care form utilization:
  - SICU
  - MICU
  - PICU
  - NICU
  - Neurosurgical Service
  - Orthopedic Service

- Plan for spread of forms to non-critical care units
Daily Goal Sheet Completion

- Status Section (left column) is completed by the night RN, reporting on the patient’s medical status over the past 24 hours.
- Patient is presented by the bedside RN to the team at IHI lightning rounds the following morning using the daily goal sheet as a rounding tool.
- Team members identify the goals for the patient for that day.
- Bedside RN writes the goals identified by the team for their patient in the goal section (right column).
- Multi-disciplinary team members sign the bottom of the form.
NICU Daily Goals and Plan of Care Form

Goal: To optimize respiratory parameters to decrease retinopathy, broncopulmonary dysplasia; and to optimize nutritional growth
Goal: To optimize respiratory parameters to decrease retinopathy, bronco-pulmonary dysplasia; and to optimize nutritional growth
Institute Multi-Disciplinary Rounds

- Include physicians in multi-disciplinary rounds
- Include family in rounds as appropriate
- Include representatives from palliative care, pharmacy, respiratory, nutrition, case management, social work, chaplaincy and other key care team members as needed
- Use rounding sheet and prep sheets for clinical services
- Reflect on patients’ progress of attainment of daily goals

Modified from 2004 Institute for Healthcare Improvement
Multi-disciplinary Rounding

- Multi-disciplinary rounds occurring in critical care units:
  - MICU
  - PICU
  - SICU
  - NICU
  - Neurosurgery
  - Orthopedics

- Plan for spread of multi-disciplinary rounding to non-critical care units
Multi-disciplinary Rounding

- Multi-disciplinary team meets to identify patients’ goals for the day
- Disciplines involved in the rounds:
  - Bedside RN
  - Attending
  - Respiratory Care
  - Pharmacist
  - Nutritionist
  - Social Worker
  - Care Coordinator
  - Chaplain
Lessons Learned

- Timely, credible data acquisition is required to provide continual feedback to teams
- Make bundle elements the “default” in the process
- Cultivate champions on the unit to keep the “ball rolling”
- Change is hard, but small tests of change are the key to success
- “Perfect” is the enemy of “good”, but good is better than nothing
Lessons Learned

- Institutional goals for change can be translated into bedside behavior change
- Quality goals must be actionable
- Measurement of actions must be fed back in close to “real” time
- Physicians can be driven by data
Achievements

- **Code H Team**
  - 2005 HANYS Pinnacle Award, Honorable Mention, for Improving ED Door-To-Balloon Times
  - Institute for Healthcare Improvement Poster Presentation at “Redesigning Healthcare” conference in San Diego, June 2005
  - Published article in July/August 2005 issue of *Patient Safety & Quality Healthcare*: “Faster Time to PTCA: Improving Safety, Communication, and Satisfaction”.
  - Poster submitted to GNYHA for IHI Best Practices

- **Institute for Healthcare Improvement’s Reducing Complications in Ventilator-Associated Pneumonia and Central Line Infections**
  - Poster presentations at the University Healthsystem Consortium’s 2005 Fall Form, Institute for Healthcare Improvement’s Annual Conference in December 2005
  - Submitted poster to GNYHA for IHI Best Practices; awaiting approval

- **Conducting study to determine CQI team effectiveness; Collaborative effort with Harvard and Stony Brook University**

- **SBUH ranked in the 96th percentile nationally for core measure indicator performance (outperforming other well-known institutions such as New York Presbyterian and UCLA).**
Stony Brook University Hospital - IHI Savings 100,000 Lives Campaign
Inpatient Mortality January 2004 - June 2006

Baseline Period = 2004
Campaign Period = January 2005 - June 2006

Total of 139 lives saved

Data Source = University HealthSystem Consortium (UHC) Clinical Database
Prepared by the CQI Department 7/06
Conclusion

- Baldrige framework is applicable to quality and safety
- Strategic plan translates into institutional goals
- Institutional goals translate into quality structure, process and function
- Quality structure is built on:
  - Quality Committee of the Governing Body
  - Quality Coordinating Group
  - Clinical Service Groups
  - CQI teams
  - Decision Support Services
Conclusion

- Quality outcomes are derived from measurement and expression of measurement
- Local ownership of data and outcomes drives the value of feedback
- Quality outcomes translate into behavior change
  - Consensus building
  - Team meetings
  - Daily goal sheets
  - Consistent feedback
- Consistent behavior changes results in culture change