Cost Quality Imperative: Setting Up Your Organization for Success

Objectives

- Define four keys to setting your organization up for long term success in reducing costs and improving value
- Develop and prioritize a portfolio of projects
- Define three methods to develop financial models and set quality metrics
- Learn to partner clinicians and financial analysts to assure success
Agenda

- Overview – Introductions  1:00
- Approach, Aim  1:15
  - Work time  1:40
- Identify Waste  1:50
  - Break/work time  2:15
- Financial Models, Portfolio  2:30
- Measures, PDSA Cycles  2:50
  - Break – work time  3:10
- Track results  3:30
- Wrap-up Q and A  4:15

Faculty

- Kathy Luther, RN, MPM  - Vice President, IHI
- Sue Vitolins, RN, Director of Patient Safety and Quality Improvement, St. Peter’s Health Partners, Troy Division
- Norman Dascher, CEO, Northeast Health
- Lisa Schilling, RN, MPH,  Vice President, Healthcare Performance Management, Care Management Institute, Kaiser Permanente
- Renee Dryden, MBA, Finance Leader  
  KP-Orange County Service Area
The challenge….

- Could we learn to take out 1% per year?
- What are the key factors for success?
- Can the method translate across settings?

Initial content based on IHI White Papers


2-Year Prototyping “Collaborative”

- 40 organizations – Year 1
- 20 organizations – Year 2

- Academic Medical Centers
- Mid-size and small community hospitals
- Homecare agency
- Teams from Canada and Sweden
- Additional Kaiser Permanente Initiative
Impacting Cost + Quality Faculty

Pete Knox  
Executive Vice President  
Bellin Health  
Green Bay, Wisconsin  
Senior Fellow, IHI

Helen Zak, MS  
President and COO  
Healthcare Value Leaders Network

Eric Dickson, MD, MHCM, FACEP  
Senior Associate Dean and President  
University of Massachusetts Memorial Medical Group

Lucy A. Savitz, PhD, MBA,  
Director of Research and Education Institute for Healthcare Delivery Research

IHI Team

Kathy Luther, RN, MPM  
Vice President, IHI

Jill Duncan, RN, MS, MPH  
Director, IHI

Kevin Little, PhD  
Improvement Advisor, IHI Principal, Informing Ecological Design

Julia Rowe Taylor  
Relationship / Project Manager, IHI

Dave Williams, PhD  
Improvement Advisor, IHI positive eye consulting, inc
## Results – Year 2

<table>
<thead>
<tr>
<th>Team</th>
<th>% of Operating Budget</th>
<th>% of Operating Budget in USD</th>
<th>Estimated Savings to Goal</th>
<th>Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ann Arundel</td>
<td>1%</td>
<td>5,000,000</td>
<td>2,928,190</td>
<td>59%</td>
</tr>
<tr>
<td>North Mississippi</td>
<td>1%</td>
<td>1,900,000</td>
<td>904,588</td>
<td>48%</td>
</tr>
<tr>
<td>Baptist Memorial Hospital-Collerville</td>
<td>2%</td>
<td>566,829</td>
<td>283,931</td>
<td>50%</td>
</tr>
<tr>
<td>Highland Hospital, Eskjö, Sweden</td>
<td>2%</td>
<td>950,000</td>
<td>1,308,714</td>
<td>138%</td>
</tr>
<tr>
<td>Northeast Health</td>
<td>1%</td>
<td>2,000,000</td>
<td>993,000</td>
<td>50%</td>
</tr>
<tr>
<td>Kenmore Mercy Hospital</td>
<td>1%</td>
<td>1,200,000</td>
<td>387,500</td>
<td>32%</td>
</tr>
<tr>
<td>Markham Sloufville Hospital</td>
<td>1%</td>
<td>1,500,000</td>
<td>409,140</td>
<td>27%</td>
</tr>
<tr>
<td>Ryhov County Hospital Jönköping, Sweden</td>
<td>1%</td>
<td>600,000</td>
<td>692,000</td>
<td>105%</td>
</tr>
<tr>
<td>Interim Healthcare of Greenville, Inc.</td>
<td>1%</td>
<td>320,000</td>
<td>2,673,080</td>
<td>835%</td>
</tr>
<tr>
<td>OSF Saint Francis Medical Center</td>
<td>1%</td>
<td>8,103,970</td>
<td>10,597,000</td>
<td>131%</td>
</tr>
<tr>
<td>Kingsbrook Jewish Medical Center</td>
<td>1%</td>
<td>2,500,000</td>
<td>1,400,000</td>
<td>56%</td>
</tr>
<tr>
<td>Presbyterian Hospital Surgery Service Line</td>
<td>1%</td>
<td>200,000</td>
<td>69,815</td>
<td>35%</td>
</tr>
<tr>
<td>Presbyterian Hospital – Women’s Service Line</td>
<td>1%</td>
<td>200,000</td>
<td>Not Reported</td>
<td>–</td>
</tr>
<tr>
<td><strong>Total (n=13)</strong></td>
<td></td>
<td>$25,040,799</td>
<td>$22,646,958</td>
<td>90%</td>
</tr>
</tbody>
</table>

### Will Align Enterprise
- Establish True North Metrics (Big Dots)
- Align Waste Reduction Strategy Throughout Organization
- Align Systems for Efficiency
- Adopt Integrated Performance Measurement Systems

### Will Engage Staff, Physicians and Patients
- Engage Staff in the What & Why of Value Delivery
- Establish Data & Feedback Loops
- Patient & Family Perspective of Waste
- Ensure a Safe Environment for Sharing Ideas
- Develop New Skills at All Levels

### Ideas Identify Waste
- Eliminate Clinical Quality Problems
- Optimize Staffing
- Maximize Flow Efficiency
- Manage Supply Chain
- Reduce Mismatched Services
- Reduce Environmental Waste (Healthy Hospital Initiatives)

### Execution Prioritize, Manage Portfolio of Projects to Remove Waste
- Evaluate Cost & Quality Impact
- Prioritize Projects and Manage Organizational Energy
- Create a Portfolio of Projects
- Solve Problems and Execute PDSA Cycles
- Measure and Monitor Results
# 6 Keys - 7 Tools - 8 Steps

## 6 Keys to Success

| 1. Assure Sr. leader support |

## 7 Tools

| 1. Waste Identification Tool |
| 2. Value Stream map |

## 8 Steps (Agenda)

| 1. Select an approach |
| 2. Set an aim |

| 2. Engage front line |
| 3. Identify waste |

| 3. Link clinicians and finance |
| 3. Financial model |
| 4. Energy grid |
| 5. Prioritization grid |

| 4. Develop financial models |
| 5. Set portfolio |

| 4. Deploy projects |
| 6. Quality advisor |
| 7. Tracking Grid |

| 5. Manage execution |
| 6. Set measures |
| 7. Make changes (PDSA) |

| 6. Spread and learn |
| 8. Track results |

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## Senior Leader Support

Approach & Aim
Samaritan and Albany Memorial Hospitals

- Acute care hospitals within Northeast Health
- AMH avg daily census 80-100, SH avg 120-150
- 30K to 40K ER visits per year
- Provides:
  - Cardiac services - Cath Lab/PCI
  - ICU/Medical/Surgical/Peds
  - Inpt and outpatient surgery, robotic surgery
  - Cancer Treatment Center
  - 3 inpatient Behavioral Health services, outpatient services, crises service
  - Wound care, Women’s Health

Northeast Health

Part of an Integrated Health Care Delivery System - St. Peter’s Health Care Partners

- 4 Acute care hospitals
- Primary Care Network
- Comprehensive Mental Health Services
- Alcohol detox and rehab
- 7 Nursing Homes, including Greenhouse units
- Sunnyview Rehabilitation Hospital
- Marjorie Rockwell Center for Alzheimer’s Home Care
- PACE Senior Services
- Assisted Living Centers
- Hospice
- Independent Living
Assure Senior Leader Support

**Approach** “Top to Bottom”
- Entire organization engaged

1. **Patient Satisfaction**
   Aim: Meet or exceed U.S. HCAHPS avg. every quarter

2. **Safe Care**
   Aim: Decrease Harm Events to Patients by 25%.

3. **Financial**
   Aim: Identify and implement efforts to remove 1% of the operating cost from the budget.

**Aim** $2M saving in System Operating Expenses
Our Numbers

- 8 regions serving 9 states and the District of Columbia
- 9+ million members (as of 1/12)
- 16,600 physicians
- 173,000 employees (including 49,000 nurses)
- 37 medical centers (with hospitals)
- Nearly 600 medical offices (ambulatory care buildings)
- $47.9 billion operating revenue (2011)

Kaiser Permanente Quality Improvement Journey

2005-2007

- Established strategic partnership with IHI
- Develop enterprise quality strategy
- KP HealthConnect implementation begins
- Assess baseline capability to improve
- Establish KP’s big dots the ‘Big Q’
- Some best performance in KP and high variation
- Establish IHI scholarship program for KP and safety net

2008-2010

- Develop Improvement Institute
- Hire master black belt mentors
- Adopt IHI’s execution model in medical centers
- Focus on alignment, portfolio management, achieving scale
- Deepen commitment to analytics, evaluation, and research
- KP HealthConnect fully implemented, optimizing
- More PSO graduates than any other organization
- Targeted participation in IHI programming based on strategic need

2011-Beyond

- Align innovation, improvement in key strategies
- Focus on technology integration, informatics, and improvement at scale
- Develop deep capability at regional levels
- Expand capability to operate as a learning organization via networks and KM
- 4 part series published in the Joint Commission Journal
- KP NCQA results, Medicare Stars best in class performance across KP
- Created Clinical Effectiveness Research Center
- Focus on total health
The Challenge

- Achieved among highest performance in quality
- Medicare reimbursement changes, health care reform
- Need to continue focusing on quality and learn about waste reduction
- Completely integrated system – learn how to redesign entire experience

Accelerating System Learning

Waves of Improvement Institute

- September 2008
- June 2009
- 2010 & beyond

Wave 2
- 5 regions
- 65 Improvement Advisors
- 300 operations managers
- 3,500 Front line staff
- IHI Forum

Wave 3
- 7 regions
- 300 Improvement Advisors
- 35 UBTC's
- 1,250 Operations managers
- 8,000 Front line staff
- IHI Forum and courses

Wave 4 & beyond
- All Regions
- 1200 IA's
- 15 internal faculty Mentors
- 10,000+ Operations Managers
- 20,000+ Front line staff
- IHI Forum and courses
- Test more sophisticated waste tools in 2 sites

Complete
On-boarding
Implementation
Expansion
Continuous Improvement

Learning and sharing systems regionally and program-wide Improvement Institute

Chose 2 higher performer sites to serve as learning centers

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Learning to Accelerate: Experiments in Facility Level Waste Reduction

Aim 1: Improve quality while removing 1% of operating expenses in 12 months of project work.

Driving the train at 100 MPH

Executive, managers and front line staff:
- Identify opportunities to reduce waste
- Organize projects to increase value
- Build cost and quality measures
- Execute to deliver results (PDSA)

Aim 2: Develop a framework for year two and beyond so you can continue Aim 1 work every year...

Laying new track for the future

Executive Leaders:
- Develop “True North” direction
- Assure projects link to strategy
- Engage personally in improvement work
- Build oversight and learning system
- Re-assess and re-align regularly

Source: IHI

Case Study: Orange County

OC Collaborative Pneumonia Team
Case Study Orange County
Why Pneumonia?

- DRG in top 25% of costs
- High volume diagnosis in ambulatory and hospital settings
- Average length of stay > 3 days
- In top 5 DRGs for readmissions

Pneumonia PI: Project Goals

- **Goals**
  - Reduce waste across pneumonia continuum
  - Decrease PN operating costs by 10% = $1.24 M
  - Improve clinical outcomes, including PN prevention

- **Outcome Measures**
  - Reduce outpatient PN visits for patients 65+
  - Reduce hospital admissions for patients 65+
  - Reduce PN average length of stay by 0.5 day
  - Reduce PN readmissions by 10%
## 6 Keys - 7 Tools - 8 Steps

<table>
<thead>
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<th>6 Keys to Success</th>
<th>7 Tools</th>
<th>8 Steps (Agenda)</th>
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</thead>
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5. Set portfolio |
7. Make changes (PDSA) |
| 5. Manage execution | 7. Tracking Grid | 8. Track results |
| 6. Spread and learn | | |
Engage Frontline Staff
Identify Waste
Engaging the Front Line

1. **Big Dots**
   - Using Big Dots to sort and categorize our patient safety, satisfaction, and financial efforts for our staff.

2. **Visualize the Quality Goals**
   - Creating a "Line of Site" between our staff efforts and our Big Dot goals

3. **Active staff involvement in identifying the problem and participating in the solution**
   - Using the Waste Identification Tool

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**Finance**
Aim: Identify & implement programs to remove 1% ($2M) of operating expenses

- **Improve Worksite Safety**
- **Decrease incidents and lost time**
- **Supply Chain Projects**
- **Yankee Alliance Supply View and other projects**
- **Antibiotic Stewardship**
- **Decrease Blood Utilization**
- **Documentation Program**
- **Physician Education**
- **Meet Core Measure & Regulatory Requirements**
- **Waste Tools**
  - Projects based on waste tool identification
Generic Waste Tool Template

HOSPITAL WASTE IDENTIFICATION TOOL, Template

Campus ___________________________ Department ___________________________ Job Title of Person Completing: ___________________________

Instructions: Log the location, date and time and place a check mark in the appropriate column for the type of waste identified.

<table>
<thead>
<tr>
<th>UNIT/Area of Hospital</th>
<th>Room Number/Location</th>
<th>Date/Time</th>
<th>WASTE TOPICS</th>
<th>Other Waste Identified</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</table>

* Waste Topics
  - Spending
  - Disposal
  - Date Disposables
  - 
  - 
  - Waze

Albany Memorial Hospital - 5th Floor Waste Identification Tool Worksheet: Ward Module

<table>
<thead>
<tr>
<th>Patient ID</th>
<th>WASTE</th>
<th>DISCHARGE DELAYS</th>
<th>WASTE SPREADS</th>
<th>TREATMENT DELAYS</th>
<th>TRANSFER DELAYS</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
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<tr>
<td>C002</td>
<td>✔</td>
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<tr>
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</tbody>
</table>

TOTAL:

- If any waste areas are identified, note where on chart.

- If both or patients with any waste identified,
  % of total beds and patients reviewed:

  TOTAL BEDS & PATIENTS REVIEWED:

Environmental Services  
*(Customized)* Waste Tool

### Hospital Waste Identification Tool - Example

<table>
<thead>
<tr>
<th>Room Number</th>
<th>Date</th>
<th>Shift</th>
<th>Discharge Logs</th>
<th>Discharge Log Books not Accurate</th>
<th>Flow Delay</th>
<th>Inflation Procedure not accurate</th>
<th>Nursing Staff not Removed</th>
<th>Pre-Procedure Practice</th>
<th>Other Waste Identified</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>509-A</td>
<td>12/13</td>
<td>D</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>510-A</td>
<td>12/14</td>
<td>D</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>501-B</td>
<td>12/14</td>
<td>D</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>401-B</td>
<td>12/14</td>
<td>D</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Waste Tag(s) Identified**: (Optional) 
**Test Observation**: (Optional) 
**N. Waste**:

---

**Note**: Red column headings may be modified or customized to capture waste issues that are not listed.

---

### Waste Tool – Additional Example

<table>
<thead>
<tr>
<th>Room Number</th>
<th>Date</th>
<th>Shift</th>
<th>Discharge Logs</th>
<th>Discharge Log Books not Accurate</th>
<th>Flow Delay</th>
<th>Inflation Procedure not accurate</th>
<th>Nursing Staff not Removed</th>
<th>Pre-Procedure Practice</th>
<th>Other Waste Identified</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>101-A</td>
<td>12/13</td>
<td>D</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>102-A</td>
<td>12/14</td>
<td>D</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>12/14</td>
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<td>104-A</td>
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<td></td>
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</tr>
</tbody>
</table>

**Waste Tag(s) Identified**: (Optional) 
**Test Observation**: (Optional) 
**N. Waste**:

---

**Note**: Red column headings may be modified or customized to capture waste issues that are not listed.
What Works and How it Works:

**Developing and Using the Optimal Waste Identification Tool**

1. IHI Waste Tool templates were a good starting point but in many cases departments were eager to develop their own Waste Tool templates.
2. While there is a temptation to create elaborate Waste Tool documents, simple, straightforward documents achieved greater staff participation.
3. Optimal Waste Tools were those created in staff meetings in collaboration with leadership.
4. Staff carry the Waste Identification Tools with them while at work and document problems they identify.
5. Staff review their completed forms with their supervisors/managers.
6. Senior team reviewed each department’s waste findings.

How Implemented

- Education to Leadership and then to front line staff by Directors and VP.
- Used by Clinical and Non Clinical Depts. – Med/Surg., Primary Care Sites, Behavior Health, Physicians, pharmacy, courier, registration, dietary, physical therapy.
- Over 400 observations completed in a 2 month period.
Engage Frontline Staff
Identify Waste

Points of Contact for Pneumonia
Where they started: Silos to Value Streams

The Silos

Clinic
Care Mgmt
Call Center
Hospital
ED
Home
Continuum

Silos to Value Streams

The System of Care

clinic
Care mgmt
call center
ED
hosp
home
Continuum
### Where to Start? Voice of the Customer

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/16</td>
<td>Onset illness</td>
</tr>
<tr>
<td>6/19</td>
<td>OP – RNP. OTC meds. “I told her I feel it in my chest”</td>
</tr>
<tr>
<td>6/20</td>
<td>Email to MD – Fever spike, green mucus</td>
</tr>
<tr>
<td>6/23</td>
<td>Email – Still unwell. MD reply to reassure</td>
</tr>
<tr>
<td>6/26</td>
<td>SOB, drove to nearest ED (non-KP). Admitted to ICU</td>
</tr>
<tr>
<td>6/27</td>
<td>Repatriated to KP, Repeat tests, change of abx</td>
</tr>
<tr>
<td>6/28</td>
<td>Inpatient X-Ray – Patient unaware of results 24 hours later</td>
</tr>
<tr>
<td>6/29</td>
<td>Consult, then discharged. Patient did not know plan of discharge, &amp; did not know about Consult</td>
</tr>
<tr>
<td>6/30</td>
<td>Hospital follow-up call, documentation incomplete. Unclear if patient was spoken with or not</td>
</tr>
<tr>
<td>7/1</td>
<td>Call to PCP. Patient confused about Consult follow up</td>
</tr>
</tbody>
</table>

### Video_PNA care from Judy-Submitted Orange County
6 Keys - 7 Tools - 8 Steps

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<td>6. Set measures</td>
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<td>7. Make changes</td>
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<td>(PDSA)</td>
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<tr>
<td></td>
<td></td>
<td>8. Track results</td>
</tr>
</tbody>
</table>
Financial Models

- **Finance**
  - Spreadsheets
  - Aggregate numbers
  - MS- DRGs, icd-9s
  - Averages, means
  - Services, service lines
  - Payor class

- **Clinicians**
  - Charts
  - Patients—one-at-a-time
  - Conditions
  - "Worst case"
  - Complicating factors
  - Social factors

Financial Model - Categories

- Literature
- Case match
- “Before” and “After”
- Value stream
- Dark Green & Light Green $$$

46
Case Match - Example

HAI’s (VAP, CLABSI, etc)
- “No respecter” of DRGs or diagnoses
- Who got it, who didn’t
- Age, diagnoses
- Unit
- LOS day, ICU day
- $$ supplies
- Age --- 72
- M/F –
- Dx/DRG
- CMI xx.x
- Med Dx, Surg Dx

• Match to those who didn’t get it
• Calculate total based on # avoided

Before and After

- Sepsis… Set criteria
  - Inclusion/exclusion criteria
  - Admitted from ED, primary diagnoses,
  - To ICU (?), exclude CA diagnoses?
  - Age, M/F, 2nd diagnoses,

- Calculate “cost of sepsis” based on criteria
- Implement changes
- Continue model as “before” and “after”
Assessing Capacity ("Energy Grid")

- Who needs to be involved?
- How much energy do they need to contribute?
- Do we have areas of the organization that are over extended?

developed by Pete Knox – Bellin Health

Energy Grid Template

Priority #1 | Priority #2 | Priority #3 | Priority #4
--- | --- | --- | ---
Departments / Support Services

--- | --- | --- | ---
Presbyterian Surgical Service Line Energy Grid

Prioritize Projects -- Matrix

Great Effort, Modest Impact

Great Effort, Great Impact

Low Effort, Modest Impact

Low Effort, Great Impact

IMPACT $$ & Quality

12/3/2012
Link Clinicians and Finance
Financial Models
Prioritization Grids

Prioritizing Waste Tool Findings
Financial Models

- **Antibiotic Stewardship**
  - Committee determined antibiotics to have restricted ordering
  - Monitor number of patients and number of doses

**Financial Model**
Cost avoidance measured by Defined Daily Dose/pt day

- **ICU Mobility & Sedation**
  - Decrease continuous sedation used, increase mobility of vented patients
  - Monitor vent LOS, LOS in ICU and in hospital

**Financial Model**
Direct cost per case calculated by finance
Building a Portfolio: Phase I Teams

Outpatient Team Focus

Inpatient Team Focus

Phase I:
- Input Related Waste (High Risk Patients Not Vaccinated)

Phase II:
- Discharge Process Waste

KP Orange County
Finance Role in Improvement Process

- Benefits of the financial analysis
  - Understand the financial implications and cost drivers
  - Align costs with the smart goals
  - Determine data needs, source & cost methodology

- What should be included in the financial impact?
  - Determine cost of clinical metrics
  - Baseline cost
  - Estimated cost savings
  - Categorize cost saving by dark green and light green dollars

Different Costing Methods

<table>
<thead>
<tr>
<th>Costing Approaches</th>
<th>Methodology</th>
<th>Advantage</th>
<th>Disadvantage</th>
</tr>
</thead>
</table>
| Average Costing (Direct Cost) | • Simple average  
|                             | • Department cost divided by volume              | • Calculation is simple and quick              | • Excluded overhead  
|                             |                                                  | • No specialized system or knowledge          | • Understates true costs                         |
| Standard Costing            | • Costs are developed for each product or service  
|                             | • Based on historical expenses.                  | • Cost are assigned to each product            | • Does not reflect the actual cost but the expected cost |
| Activity Based Costing (ABC) | • Costs based on the resources patient consumes  
|                             |                                                  | • Patient/Disease focus                        | • Time consuming  
|                             |                                                  | • Identifies non value adding steps            | • Costly                                                   |
Process Flow Map: Inpatient Pneumonia

Example of Average Costing (Direct Cost)

<table>
<thead>
<tr>
<th>Process Flow Costing Across the Continuum</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outpatient</strong></td>
</tr>
<tr>
<td>------------------------------------------</td>
</tr>
<tr>
<td>Outpatient Visit</td>
</tr>
<tr>
<td>Laboratory</td>
</tr>
<tr>
<td>OIP/P Pharmacy</td>
</tr>
<tr>
<td>OutPatient Cost</td>
</tr>
<tr>
<td>Emergency Dept</td>
</tr>
</tbody>
</table>

* Costs are an average department costs per inpatient day, discharge, units, prescriptions, worked hour, or other work load units.
* Costs are hypothetical and do not reflect the actual average cost of the medical care services.
How to Identify Dark Green vs. Light Green Dollars

<table>
<thead>
<tr>
<th>Goal/Service</th>
<th>Result</th>
<th>Light Green</th>
<th>Dark Green</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduction in ALOS</td>
<td>Less inpatient days</td>
<td>• Increased bed capacity</td>
<td>• Closing unit • Reduced staff</td>
</tr>
<tr>
<td>Lower misuse of antibiotics</td>
<td>Less prescriptions</td>
<td>• Increased staff productivity</td>
<td>• Reduced drug cost</td>
</tr>
<tr>
<td>Standardize Care Plan</td>
<td>Standardize lab orders for pneumonia diagnosis</td>
<td>• Less number of labs or cost of delayed diagnosis</td>
<td>• Retire lab machine • Lower Supply cost</td>
</tr>
<tr>
<td>Lower rate of readmission</td>
<td>Less admissions &amp; lower inpatient days</td>
<td>• Increase bed capacity</td>
<td>• Eliminate lack of reimbursement</td>
</tr>
</tbody>
</table>

How to Identify Dark Green vs. Light Green Dollars

<table>
<thead>
<tr>
<th>Light Green Dollars</th>
<th>Dark Green Dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improvements that reduce costs but cannot be removed from the budget</td>
<td>Improvements that translates into cost savings removed from the budget</td>
</tr>
<tr>
<td>Reduced readmission rate</td>
<td>Reduced overtime hours</td>
</tr>
<tr>
<td>Increased vaccine rate</td>
<td>Eliminated position</td>
</tr>
<tr>
<td>Standardized care plan</td>
<td>Reduced supply costs</td>
</tr>
<tr>
<td>Reduction of ALOS</td>
<td>Lower wasted supplies</td>
</tr>
<tr>
<td>Lower number of office visit no-shows</td>
<td>Switch drugs from brand name to generic</td>
</tr>
<tr>
<td>Elimination of processes that do not improve care</td>
<td>Reduced cost by in sourcing or outsourcing services</td>
</tr>
<tr>
<td>Less # of hospital falls</td>
<td>Reduced staffing inefficiency</td>
</tr>
</tbody>
</table>
Break

*Financial Model: Q and A*

### 6 Keys - 7 Tools - 8 Steps

<table>
<thead>
<tr>
<th>6 Keys to Success</th>
<th>7 Tools</th>
<th>8 Steps (Agenda)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Assure Sr. leader support</td>
<td>1. Waste Identification Tool</td>
<td>1. Select an approach</td>
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<tr>
<td>2. Engage front line</td>
<td>2. Value Stream map</td>
<td>2. Set an aim</td>
</tr>
<tr>
<td>3. Link clinicians and finance</td>
<td>3. Financial model</td>
<td>3. Identify waste</td>
</tr>
<tr>
<td>5. Manage execution</td>
<td>5. Prioritization grid</td>
<td>5. Set portfolio</td>
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<tr>
<td></td>
<td>7. Tracking Grid</td>
<td>7. Make changes (PDSA)</td>
</tr>
<tr>
<td></td>
<td>8. Track results</td>
<td></td>
</tr>
</tbody>
</table>
Cost-Quality Advisor (Balancing Measure)

Deploy Projects
Set Measures
Make Changes
Track Results
Northeast Health – Troy, NY Portfolio Management

Aim of Portfolio:

<table>
<thead>
<tr>
<th>Percentage of Operating Budget</th>
<th>Savings in US Dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>1%</td>
<td>2 Million</td>
</tr>
</tbody>
</table>

Current Portfolio Projects:

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Projected Savings</th>
<th>Savings to Date</th>
<th>Key Changes</th>
<th>Quality Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood Utilization for 12 months</td>
<td>$300K</td>
<td>$578K</td>
<td>Updated transfusion criteria. Standardized Order sheet with guidelines.</td>
<td>Transfusions by guideline.</td>
</tr>
<tr>
<td>Decrease 1:1 in BHS</td>
<td>$40K</td>
<td>$97K</td>
<td>Milieu restructure Program enhancements.</td>
<td>Restraint Use.</td>
</tr>
<tr>
<td>ICU Mobility&amp;Sedation</td>
<td>not estab</td>
<td>$142K in 9 months</td>
<td>Standardize sedation, MDR, PT included.</td>
<td>Accidental extubations, falls, VAPS</td>
</tr>
</tbody>
</table>

Totals: $ | $ | $ | |

Northeast Health – Troy, NY Portfolio Management

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Projected Savings</th>
<th>Savings to Date</th>
<th>Key Changes</th>
<th>Quality Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Point of service collections</td>
<td>$130 increased revenue</td>
<td>$229k increased revenue</td>
<td>Retraining, scripting, train the trainer. Electronic eligibility.</td>
<td>Increased revenue – not savings</td>
</tr>
<tr>
<td>Waste Tools</td>
<td>none</td>
<td>$150K</td>
<td>Multiple projects</td>
<td></td>
</tr>
<tr>
<td>Antibiotic Stewardship</td>
<td>&amp; 72K plus 300K cost avoidance</td>
<td></td>
<td>restricted antibiotics Prolong zosyn infusion</td>
<td></td>
</tr>
</tbody>
</table>

Totals: $470K | $993,000 | | Also had 529K in increased revenue And 300K in cost avoidance |
Blood Utilization

- Revised blood use criteria (evidence based guidelines).
- Gained approval for mandatory blood transfusion order set for non emergent transfusions.
- Establish process for monitoring compliance

Financial Model
Cost savings calculated using the supply cost of the unit of blood.
Utilization calculated using units per discharge

1:1 Sitters on the Mental Health

- Actual 1:1 shifts are 46% below budget
- Year-to-date salary savings - $58,752.00
- 1:1 Reduction Staff and leadership committee
- Education with physicians regarding assessment & alternative interventions
- Milieu restructuring on MHU and programming enhancements
- Weekends continue to present opportunity

Financial Model:
Budgeted vs actual
### Challenges Identified And Addressed

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Solution</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difficulty identifying dark green dollars</td>
<td>• Develop cost “savings” of light green dollars</td>
<td>• Reduced readmit rate by 10%&lt;br&gt;• $12k=Cnt x Alos x $ avg per day</td>
</tr>
<tr>
<td>Documenting the value of improvements with no cost savings</td>
<td>• Reduced utilization&lt;br&gt;• Non events&lt;br&gt;• Increased productivity&lt;br&gt;• Improved access</td>
<td>• Alarm Fatigue: reduce false alarms by 80%&lt;br&gt;• Annualized “savings” of 6,130 RN hours &amp; $400k</td>
</tr>
<tr>
<td>Projects can have a time delay in realize cost savings which can limit financial analysis</td>
<td>• Trend improvements&lt;br&gt;• Estimating cost savings until result can be determined</td>
<td>• Improved Vaccine Rates&lt;br&gt;• Immediate cost increase&lt;br&gt;• Vaccine benefits last for years</td>
</tr>
<tr>
<td>Actual cost savings for individual projects can be small and seem insignificant</td>
<td>• Annualize actual savings&lt;br&gt;• Estimate savings if spread&lt;br&gt;• Combine several projects</td>
<td>• Test of change in one clinic for one month resulted in reduced visits of 10.&lt;br&gt; Spread improvement to 10 clinics creates 100 less visits&lt;br&gt; Annualized is 1,200 less visits</td>
</tr>
</tbody>
</table>
In-Patient Results

- Standardized discharge process
  - Initially targeted PN patients
  - Expanded to all discharges on pilot unit by staff request
- Reduced average length of stay by 0.6 day
- Impact on readmissions
  - Data collection period too brief and pilot numbers too small to be evaluated
  - Readmission rate to be reviewed after spread

Out-Patient Results

- Standardized Pneumovax process with in-reach and out-reach to 65+ members
- 67% improvement in immunization rate
- Reduced 65+ visit rate by 21.5%
- Avoided 6 PN admissions
Process Flow Map: Inpatient Pneumonia

Estimated Finance Results

<table>
<thead>
<tr>
<th>Objective</th>
<th>Results to Date</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outpatient</strong></td>
<td><strong>21.5% reduction (actual visit rate = 3.8)</strong></td>
</tr>
<tr>
<td>10% reduction in Outpatient Pneumonia visits for patients 65+</td>
<td>28 avoided visits = $7,746</td>
</tr>
<tr>
<td>Estimated savings or avoided costs</td>
<td>Pneumovax compliance increased 67%</td>
</tr>
<tr>
<td>Harbor Mac MOB</td>
<td>$5,340</td>
</tr>
<tr>
<td>(OC Service Area</td>
<td>$76,284</td>
</tr>
<tr>
<td>Improve Pneumovax compliance</td>
<td>Estimated cost of vaccination @ $48/dose = $13,704</td>
</tr>
<tr>
<td><strong>Outpatient</strong></td>
<td><strong>Potential 6 avoided pneumonia admissions</strong></td>
</tr>
<tr>
<td>10% reduction in hospital admissions for patients 65+</td>
<td>Estimated avoided costs = $43,344</td>
</tr>
<tr>
<td>Estimated savings or avoided costs</td>
<td></td>
</tr>
<tr>
<td>Harbor Mac MOB</td>
<td>$24,199</td>
</tr>
<tr>
<td>(OC Service Area</td>
<td>$241,993</td>
</tr>
<tr>
<td><strong>Inpatient</strong></td>
<td><strong>Data collection period too brief and pilot numbers too small to be evaluated</strong></td>
</tr>
<tr>
<td>10% reduction in readmissions</td>
<td></td>
</tr>
<tr>
<td>Service Area estimated savings or avoided costs = $126,414</td>
<td></td>
</tr>
<tr>
<td><strong>Inpatient</strong></td>
<td><strong>0.6 day reduction (143 days avoided)</strong></td>
</tr>
<tr>
<td>0.5 day reduction in average length of stay</td>
<td></td>
</tr>
<tr>
<td>Service Area estimated savings or avoidable costs = $797,497</td>
<td></td>
</tr>
<tr>
<td><strong>Pilot MOB Total Est Savings/Avoided Costs=</strong> $121,930</td>
<td><strong>Harbor Mac MOB Total to Date = $183,317</strong></td>
</tr>
<tr>
<td><strong>Service Area Est Total Savings/Avoided Costs =</strong> $1,238,282</td>
<td></td>
</tr>
</tbody>
</table>
Post Implementation Flow = Streamlined Process, Eliminated Waste and Reduced Cost

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
<th>Cost</th>
<th>Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/16</td>
<td>Onset Illness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6/19</td>
<td>OP – RNP OTC meds. “I told her I feel it in my chest”</td>
<td>$136</td>
<td>3</td>
</tr>
<tr>
<td>6/20</td>
<td>Email to MD – Fever spike, green mucus</td>
<td>$22</td>
<td>1</td>
</tr>
<tr>
<td>6/23</td>
<td>Email – Still unwell, MD reply to reassure</td>
<td>$14,500</td>
<td>3</td>
</tr>
<tr>
<td>6/26</td>
<td>SOB, drove to nearest ED (non-KP). Admitted to ICU</td>
<td>$22</td>
<td>1</td>
</tr>
<tr>
<td>6/27</td>
<td>Repatriated to KR. Repeat tests, change of abx</td>
<td>$1,146</td>
<td>1</td>
</tr>
<tr>
<td>6/28</td>
<td>Inpatient X-Ray – Patient unaware of results 24 hours later</td>
<td>$1,146</td>
<td>6</td>
</tr>
<tr>
<td>6/29</td>
<td>Consult, then discharged. Patient did not know plan of discharge. did not know about Consult</td>
<td>$361</td>
<td>1</td>
</tr>
<tr>
<td>6/30</td>
<td>Hospital follow-up call, documentation incomplete. Unclear if patient was spoken with or not.</td>
<td>$14</td>
<td>1</td>
</tr>
</tbody>
</table>

Oversight and Monitoring Dashboard Example

Orange County Performance Improvement

Sample Pneumonia Dashboard

<table>
<thead>
<tr>
<th>PHASE I</th>
<th>2011 Remainder Cost</th>
<th>2012 Remainder Cost</th>
<th>2012 YTD</th>
<th>JAN</th>
<th>FEB</th>
<th>MAR</th>
<th>APR</th>
<th>MAY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$7,700</td>
<td>$3,2</td>
<td>$3,2</td>
<td>3.2</td>
<td>3.5</td>
<td>3.5</td>
<td>3.3</td>
<td>3.3</td>
</tr>
<tr>
<td>Inpt PN Visits Per 1,000 (HBM 65+)</td>
<td>3.5</td>
<td>10%</td>
<td>3.2</td>
<td>3.5</td>
<td>3.5</td>
<td>3.5</td>
<td>3.3</td>
<td>3.3</td>
</tr>
<tr>
<td>Pneumovax Rate (HBM)</td>
<td>86%</td>
<td>70%</td>
<td>72%</td>
<td>71%</td>
<td>71%</td>
<td>72%</td>
<td>72%</td>
<td>72%</td>
</tr>
<tr>
<td>Avoided Costs Due to Lower Visit Rate</td>
<td>$6,000</td>
<td>$1,146</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% PN ED visits (HBM 65+)</td>
<td>10%</td>
<td>$14</td>
<td>$14</td>
<td>$14</td>
<td>$14</td>
<td>$14</td>
<td>$14</td>
<td>$14</td>
</tr>
<tr>
<td>Avoided Costs Due to Lower ED Rate</td>
<td>$1,146</td>
<td>$1,146</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inpt Admissions - Pneumonia at BIC</td>
<td>$43,344</td>
<td>$43,344</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% PN Admits from DOI (count)</td>
<td>42</td>
<td>10%</td>
<td>28</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Avoided Costs Due to Lower Rate</td>
<td>$52,734</td>
<td>$52,734</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ALPS PN stay at DOI</td>
<td>$520,000</td>
<td>$520,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

* Costs are hypothetical and do not reflect actual performance.
### 6 Keys - 7 Tools - 8 Steps

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<td>4. Energy grid</td>
<td>5. Set portfolio</td>
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<td>7. Tracking Grid</td>
<td>8. Track results</td>
</tr>
<tr>
<td>6. Spread and learn</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### PRIMARY DRIVERS

- **WILL**
  - Align Enterprise
  - Establish True North Metrics (Big Dots)
  - Align Waste Reduction Strategy
  - Align Systems for Efficiency
  - Adopt Integrated Performance Measurement

- **IDEAS**
  - Identify Waste
  - Eliminate Clinical Quality Problems
  - Optimize Staffing
  - Maximize Flow Efficiency
  - Manage Supply Chain
  - Reduce Mismatched Services—overuse, underuse
  - Reduce Environmental Waste

- **EXECUTION**
  - Prioritize, Manage Portfolio of Projects to Remove Waste
  - Evaluate Cost & Quality Impact
  - Prioritize Projects
  - Create a Portfolio of Projects
  - Solve Problems and Execute PDSA Cycles
  - Measure and Monitor Results

### SECONDARY DRIVERS

- **WILL**
  - Engage Staff, Physicians and Patients
  - Engage Staff in Value Delivery
  - Establish Data & Feedback Loops
  - Patient & Family Perspective of Waste
  - Ensure a Safe Environment for Sharing Ideas
  - Develop New Skills at All Levels

- **AIM**
  - Reduce operating expenses 1% per year while continually maintaining or improving quality.
  - Establish True North Metrics (Big Dots)
  - Align Waste Reduction Strategy
  - Align Systems for Efficiency
  - Adopt Integrated Performance Measurement

- **IDEAS**
  - Identify Waste
  - Eliminate Clinical Quality Problems
  - Optimize Staffing
  - Maximize Flow Efficiency
  - Manage Supply Chain
  - Reduce Mismatched Services—overuse, underuse
  - Reduce Environmental Waste

### Effort

- **PRIMARY DRIVERS**
  - 54%
  - 69%
  - 62%
  - 54%

- **SECONDARY DRIVERS**
  - 65%
  - 77%
  - 46%
  - 17%
  - 54%
  - 85%
  - 69%
  - 76%
  - 70%
  - 54%
  - 39%
  - 85%
Key to Successes

- Evidence based practice
- MD & staff buy in
- Demonstrate the need – look at current practice
- Include finance team member
- Measure, analyze, feedback results
- Make the group all inclusive – include the nay-sayers.
- Make it standard work
- Have a Champion

Barriers and Goals...

Barriers
- Lose momentum due to competing priorities
- Change of staff – at the top and frontline

Goals
- Spread to new ‘Partners’
- Education on Lean principles
- Combine improvement efforts, sharing of best practices
Regional Spread of Pneumonia Care

The initial regional spread effort will focus on clinical decision support algorithms for disposition of patients from the ED to multiple care settings.

End-to-End Cost/Quality Pilot: Study Proposed Timeline*

*Dependent on complexity of final deliverable and review process

<table>
<thead>
<tr>
<th>November ’12</th>
<th>December ’12</th>
<th>January ’13</th>
<th>February ’13</th>
<th>March ’13</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCMC</td>
<td>OCMC</td>
<td>Synthesis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plan SCL site visit, begin recruitment process</td>
<td>Plan OC site visit, begin recruitment process</td>
<td>Develop overall study design and define deliverables</td>
<td>Field work, begin analysis</td>
<td>Field work, begin analysis</td>
</tr>
<tr>
<td>Field work, begin analysis</td>
<td>Field work, begin analysis</td>
<td></td>
<td>Complete case study and use to inform OC</td>
<td>Complete case study</td>
</tr>
<tr>
<td>Complete case study and use to inform OC</td>
<td>Complete case study and use to inform OC</td>
<td></td>
<td>Begin synthesis</td>
<td>Finalize synthesis and begin to share learnings</td>
</tr>
</tbody>
</table>
Pneumonia: Phase I Spread

- **Outpatient Spread**
  - Create Outpatient/ Urgent Care Standard Work — Q2 2012
  - Create OP/UC Spread Guide — Q2 2012
  - Spread to initial 2 MOBs — Q3 2012
  - Spread to all 15 MOBs — Q4 12 – Q2 13

- **Inpatient Spread**
  - Create Inpatient Standard Work — Q2 2012
  - Create Inpatient Spread Guide — Q2 2012
  - Spread to IMC Units — Q3 – Q4 2012
  - Spread to AMC Units — Q4 12 – Q1 13

Sequencing Portfolio: Phase II Teams

- Standardize PN Ambulatory Care Management
- Standardize ED to Inpt Admit Criteria
- PN HH Care Management
- Inpt PN Care Management
- PN HH Care Management

Outpatient Team Focus

Inpatient Team Focus
Phase II Goals

**KP – Orange County Quality / Cost Collaborative**

**Improving End to End Pneumonia Care – Phase II**

<table>
<thead>
<tr>
<th>TEAM</th>
<th>Objective</th>
<th>Goal Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irvine Medical Center Emergency Department Team</td>
<td>Reduce variation in the ED pneumonia admission criteria.</td>
<td>By implementing standardized admitting guidelines using a modified CURB-65 score, we will reduce variation and low risk admissions by 10% using CURB-65 / Interqual guidelines by December 2012 at IMC</td>
</tr>
<tr>
<td>Harbor Mac Ambulatory Team</td>
<td>Reduce variation in the ambulatory care management of pneumonia patients.</td>
<td>By implementing standardized plan of care to include a modified CURB-65 model, pulse ox, 2 views chest x-ray, medication compliance, follow up appointments, we will reduce pneumonia visit rate per 1,000 members at HBM by 10%, by December 2012.</td>
</tr>
<tr>
<td>Irvine Medical Center In Patient Team</td>
<td>Reduce variation in the ambulation of pneumonia patients.</td>
<td>By standardizing the ambulation process for all pneumonia patients capable of ambulating on the IMC telemetry unit, the ALOS will be reduced .5 day by December 2012.</td>
</tr>
<tr>
<td>Orange County Home Health Team</td>
<td>Reduce variation in the care of home health pneumonia patients.</td>
<td>By implementing a standardized home health “pneumonia Care Bundle” we will reduce pneumonia home health readmissions 10% by December 2012 at OC.</td>
</tr>
</tbody>
</table>

Accelerating in Other Areas

The OC Service Area identified key areas for waste reduction to target with Rapid Improvement Events. Through cost avoidance alone, OC expects to achieve minimally $140,000 per event prior spread, with a possible total impact of $6 M on supply management cost reduction.
Medical Center Learning

- Projects now progress faster
- Methodology can be applied to other complex conditions
- Standard cost information not readily available

Organizational Learning

- Need to shine the light on progress without stalling innovation
- System wide cost accounting essential
- This is hard work for even the most sophisticated leadership teams
- Critical timing and learning for organization as we aim to speed scaling of what works
**Participant comments**

“This brought our physicians to the table”

“We have a new collaboration between finance and clinical staff”

“We now post metrics to show progress”

“We have a consistent approach and better trending of outcomes”

“Our clinicians are now willing to identify where changes could be made because they understand that the process is being used for improvement.”

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**Additional Learning:**

**From the Bedside to the Balance Sheet: Engaging Front-Line and Finance Staff to Lower Costs and Drive Quality**

March 13-15, 2013
Intermountain Medical Center
Salt Lake City, Utah

“Boot Camp Format” – Teams encouraged to attend

Objectives

- Define four keys to setting your organization up for long term success in reducing costs and improving value
- Develop and prioritize a portfolio of projects
- Define three methods to develop financial models and set quality metrics
- Learn to partner clinicians and financial analysts to assure success

Questions?