Creating Value: Using ROI with Accountable care for Market Differentiation

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<th>The change upon us... The Healthcare PACMAN</th>
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Learning Objectives

• Identify reasons for use of, and barriers to, Return On Investment calculation
• Provide a consistent methodology for measuring Return On Investment for use in health care decision making and resource allocation
• Illustrate through health care case studies, application of the Return On Investment methodology
2009 US Healthcare Spending

*Unnecessary services, excessive administrative costs, fraud, and other problems
75,000 preventable deaths
Standards & Poors – Weaker Performance Ahead

“With pending budget sequestration at the Federal level, health reform implementation, and continuing pressure on state budgets, (we believe the next several years will be difficult for most providers...the [cost containment] improvements of the past several years may be reaching their limit and... will not be able to keep pace with longer term revenue pressures... in light of weaker volumes.”
Fitch (2013 Outlook)
“…believe that the next level of cost reduction within the industry will need to be realized from a change in care delivery operating model through integrating clinical operations, implementing standardized protocols, coordinating care, and managing population health care, which will be more difficult to accomplish.”
The “**Net Social Value Added**” by Health Care – not to be confused with its “**Gross Value Added**” – probably has turned negative.

- **Net Social Value Added by the Health System**
- **Gross Social Value Added by the Health System**
- **Social Opportunity Imposed by the Health System on Society**

Healthcare providers and their patients – and producers of medical technology – naturally focus on this *gross* value added.

Increasingly, leaders in business and government think of these social opportunity costs of health care.

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What Are the Social Opportunity Costs of Healthcare?

• Neglecting the education of our young
• Neglecting science and R&D
• Neglecting our infrastructure
• Neglecting our national security
• Impairing our general standard of living

This is really what PacMan is chewing up.
Milliman: Allocation of Medical Costs 2012

and Who Actually Pays for the Employer’s Premium Contribution

Employee Out-of-Pocket: $3,470 or 17%

Employee Premium: $5,114 or 25%

Employer Premium: $12,144 or 58%

Source: Milliman Medical Index 2012
Although a median-income U.S. family of four with employer-based health insurance saw its gross annual income increase from $76,000 in 1999 to $99,000 in 2009 (in current dollars), this gain was largely offset by increased spending to pay for health care.

Monthly spending increases occurred in the family’s health insurance premiums (from $490 to $1,115), out-of-pocket health spending (from $135 to $235), and taxes devoted to health care (from $345 to $440). After accounting for price increases in other goods and services, the family had $95 more in monthly income to devote to non-health spending in 2009 than in 1999.

By contrast, had the rate of health care cost growth not exceeded general inflation, the family would have had $545 more per month instead of $95—a difference of nearly $5,400 per year. Even the $95 gain was artificial, because tax collections in 2009 were insufficient to cover actual increases in federal health spending. As a result, we argue, the burdens imposed on all payers by steadily rising health care spending can no longer be ignored.
The Triple Aim™ set forth by the Institute for Healthcare Improvement:

• Optimal care delivery within and across the continuum

• Focused on improving the health of the population and cost of care

• Right care, Right place, Right time
Evolving From → To

**From**
- Pay for procedures
- Fee-for-service
- More facilities/capacity
- Physicians/Hospitals acting independently
- Physicians and Hospitals working in parallel
- Hospital centric
- Treat disease/episode of care

**To**
- Pay for value
- Case rates/budgets/capitation
- Better access to appropriate settings
- Physicians/Hospitals collaboration: global risk
- Physicians and Hospitals working in a highly integrated manner
- Continuum of Care (Population centric)
- Maintain health
Hospital Readmissions Drive Healthcare Costs

30-Day Readmission Rates are Highest for Medicaid and Medicare Patients

Accountable Care: How Do You Generate Savings

50% Care Management
- Population management
- Well care
- Chronic disease management
- Effective use of appropriate clinicians
- Medical home
- Bundled payment

15-20% Lower Cost Site
- Post-acute, outpatient, ER use

15-20% Throughput (Volume)
- Extended hours, higher occupancy, narrower network

15-20%
- Generic use, GPO, standardization

Appropriate Economic Indicators
New Paradigm: Increase the Defined Population We Care For

- Quaternary
- Tertiary (Hospitals)
- Surgical Specialists
- Medical Specialists
- Primary Care
- Access Points (UCC, Community Clinics, ED, Health Plans, Employer Clinics, etc.)

Defined Population
Scripps Employee Health Plan Risk Stratification Approach $20 Million Opportunity

- Case and Care Management
- Clinical Program Focused Intervention
- Registries
-Quality Metric Selection/Review
-Physician Advisory
-Pilot Definition
-Interventions
-Credentialing/Privileging
-Milliman Well Managed Clinical Protocols
-Physician Review/Care Gaps
-Physician Review
-Immunizations
-Well Care Check Ups

≤ 5%
Catastrophic Case Management

10%
Complex Care Management

30 - 40%
Disease Management Intervention

60 - 80%
Utilization and Concurrent Review Management (UR)
Ambulatory/Inpatient/Pharmacy

70 - 80%
Population Health Management

100%
Claims Data
Biometric Testing/Screening
Health Risk Appraisal

- Case Care Coordination Nurse
- Network Negotiations
- Nurse Lines Follow Up/Compliance
- Care Coordination Nurse
- Coaching
- Nurse Lines Follow Up/Compliance
- Mommies to Be
- 24 hour Authorization Line
- Benefit Verification/Eligibility
- Physician Consult
- Claims Processing/Online Survey
- Testing/Assessments
Strategy: Guiding Principles

- Move to population health
- Strong primary care base (need numbers)
  - Use nurse practitioners
  - Use telehealth/IT
- Move to risk payment/GLOBAL payment
- Move to expanded access points (capture the population)
- Improve quality (top decile)
- Reduce cost (target Medicare)
- Be pluralistic
  - All payers: narrow networks?
  - Multiple providers to the hospital (separate risk performance)
  - Shared risk pools to link with physician organizations
ROI Why Now?

Evolution of care
Competing for dollars/importance of money
Evidence based management

Value equation
- Perception
- Knowledge and capability
- Action/implementation
- Impact
- Costs
- Triple Aim (how to accomplish)
Reasons to Use ROI

• To improve the quality of projects and outcomes
• To determine whether a project has accomplished its objective
• To identify strengths and weakness in the process
• To enable cost benefit analysis
• To assist in the marketing of projects in the future
• To determine whether the project was the appropriate solution
• To establish priorities for project funding
Challenges of ROI

• Commitment dilemma
• Preparation skills
• Fear of ROI
• Time for analysis
• Power and politics
• Sustainability
Issues with ROI

- Lack of business alignment
- Inappropriate solutions to problems
- Lack of participant engagement
- Lack of focus on business results
- Failure to prepare the environment
- Lack of accountability
- Failure to isolate the effect of the project
- Lack of involvement of key executives
- Failure to connect project to money
- Measuring incrementally
ROI Defined

- Methodology
- Process model
- Business alignment
- Guiding principles
- Basics
- ROI calculation
ROI Methodology

INPUTS

Access
- The people we serve

Costs
- Making it affordable

Reaction
- The perceptions of those involved

Learning
- The capability to do it properly

OUTCOMES

Application & Implementation
- Making it work and making it better

Impact
- Patient outcomes, safety, productivity, efficiency, satisfaction

ROI
- Monetary benefits vs. costs

Accessing Costs Reaction Learning Application & Implementation Impact ROI

Making it affordable Making it work and making it better Making it work and making it better Making it work and making it better Making it work and making it better

The people we serve The perceptions of those involved The capability to do it properly

INPUTS

OUTCOMES

Access
- The people we serve

Costs
- Making it affordable

Reaction
- The perceptions of those involved

Learning
- The capability to do it properly

Application & Implementation
- Making it work and making it better

Impact
- Patient outcomes, safety, productivity, efficiency, satisfaction

ROI
- Monetary benefits vs. costs

INPUTS

OUTCOMES
The ROI Process Model

1. **Develop, review objectives of project**
   - Inputs: Evaluation Planning
   - Reaction: Collect data during implementation

2. **Develop evaluation plans & baseline data**
   - Reaction: Collect data after implementation

3. **Collect data during implementation**
   - Application: Collect data after implementation

4. **Isolate effects of project**
   - Application: Collect data to monetary value

5. **Convert data to monetary value**
   - Application: Calculate return on investment

6. **Generate impact study report**
   - Intangible benefits
   - Identify intangible measures

7. **Capture costs of project**
   - Reporting

8. **Intangible benefits**
   - Generate impact study report

- Inputs: Capture costs of project
Business Alignment Model

Business Alignment

- Payoff Needs → ROI Objective → ROI
- Business Needs → Impact Objectives → Impact
- Performance Needs → Application Objectives → Application
- Learning Needs → Learning Objectives → Learning
- Preference Needs → Reaction Objectives → Reaction
- Input Needs → Input Objectives → Inputs

Business Alignment & Forecasting

Project, Program or Initiative

The ROI Process Model

Start here

Finish here

Measurement & Evaluation
Level 0 - **Input** into the project

Level 1 - **Reaction** to the project

Level 2 - **Learning** how to make the project successful

Level 3 - **Applying/implementing** the project successfully

Level 4 - Improving one or more **impact** measures

Level 5 - Calculating the financial **ROI**

**Intangible benefits** - **Impact** data not converted to money
Twelve Guiding Principles of ROI

1. When conducting a higher-level evaluation, collect data at lower levels.
2. When planning a higher-level evaluation, the previous level of evaluation is not required to be comprehensive.
3. When collecting and analyzing data, use only the most credible sources.
4. When analyzing data, select the most conservative alternative for calculations.
5. Use at least one method to isolate the effects of a project.
6. If no improvement data are available for a population or from a specific source, assume that little or no improvement has occurred.
7. Adjust estimates of improvement for potential errors of estimation.
8. Avoid use of extreme data items and unsupported claims when calculating ROI.
9. Use only the first year of annual benefits in ROI analysis of short-term solutions.
10. Fully load all costs of a solution, project, or program when analyzing ROI.
11. Intangible measures are defined as measures that are purposely not converted to monetary values.
12. Communicate the results of ROI methodology to all key stakeholders.
ROI Calculation

- Benefit/cost ratio
- ROI formula
- Pay back period (break even analysis)
- Discounted cash flow (DCF)
- Internal rate of return (IRR)
Benefit/cost ratio

BCR = \frac{\text{Project Monetary Benefits}}{\text{Project Costs}}
ROI formula

ROI % = \( \frac{\text{Net Project Benefits}}{\text{Project Costs}} \) \times 100

Net project benefits = project monetary benefits minus project costs
Payback period (break even analysis)

Payback period = \( \frac{\text{Total Investment}}{\text{Annual Savings}} \) Years
Support

Adjustment

Predicative capability (effectiveness correlation to reaction)
- Project relevant
- Project necessary
- Project important for success of me and organization
- Intend to make successful
- Recommend project

Learning critical for execution of projects
- Knowledge and skills
- Understanding
- Comprehension
- Confidence
- Awareness
- Context
- Readiness
Measuring Application & Implementation

- Data with regard to success
- Extent implemented
- After action collection
- Transition process
- Focus on data and process/skipping to outcome
- Barriers/Enablers
Barriers of Measurement

- Lack supervisory support
- Not needed
- Lack resources
- Culture support
- No opportunity to use
- No time
- No tools/templates

- Lack technology
- Lack system or processes
- Competing practices
- No value
- Job changes
- Work not appropriate
- Funding exhausted
- Cost
Business Impact

Strategic

Operational

Tactical
Measures at Different Levels

Corporate/Headquarter Level

Business Unit/Hospital Level

Operating Unit/Department Level

Impact Measures

Strategic

Operational

Tactical
<table>
<thead>
<tr>
<th>Project</th>
<th>Key Impact Measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absenteeism control/reduction</td>
<td>Absenteeism, patient satisfaction, job satisfaction, stress</td>
</tr>
<tr>
<td>Advertising</td>
<td>Patient revenue, market share, patient loyalty, new patients, patient satisfaction, brand awareness</td>
</tr>
<tr>
<td>Branding projects</td>
<td>Brand awareness, image, patient loyalty, new patients, market share</td>
</tr>
<tr>
<td>Business coaching</td>
<td>Productivity, patient outcomes, physician engagement, quality, time savings, efficiency, costs, employee satisfaction, patient satisfaction</td>
</tr>
<tr>
<td>Business development</td>
<td>Revenue, patient loyalty, new patients, patient satisfaction</td>
</tr>
<tr>
<td>Career development/ career management</td>
<td>Turnover, patient loyalty, new patients, patient satisfaction</td>
</tr>
<tr>
<td>Cloud computing</td>
<td>Costs, response time, down time reliability</td>
</tr>
<tr>
<td>Communications</td>
<td>Medical errors, stress, conflicts, productivity, job satisfaction, patient complaints</td>
</tr>
<tr>
<td>Compensation</td>
<td>Patient outcomes, costs, productivity, quality, job satisfaction, patient satisfaction</td>
</tr>
<tr>
<td>Compliance</td>
<td>Discrepancies, penalties/fines, charges, settlements, losses</td>
</tr>
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## ROI Applications cont’d

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<thead>
<tr>
<th>Project</th>
<th>Key Impact Measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lean Six Sigma</td>
<td>Patient outcomes, cost savings, productivity improvement, response times, quality measures, wait times, patient safety, cycle times, error reductions, job satisfaction, patient satisfaction</td>
</tr>
<tr>
<td>Marketing</td>
<td>Patient revenue, market share, patient loyalty, new patients, patient satisfaction, brand awareness</td>
</tr>
<tr>
<td>Medical meetings/events</td>
<td>Revenue, productivity, output, patient outcomes, quality, time savings, job satisfaction, patient satisfaction</td>
</tr>
<tr>
<td>Medical procedures</td>
<td>Medical errors, patient safety, patient outcomes, wait times, cycle time, operating costs, efficiency, patient satisfaction, patient complaints, legal claims</td>
</tr>
<tr>
<td>Motivational programs</td>
<td>Patient outcomes, patient safety, patient satisfaction, patient revenues, productivity, patient revenue, quality, cycle time, costs</td>
</tr>
<tr>
<td>Nurse engagement</td>
<td>Patient outcomes, patient safety, patient satisfaction, nurse turnover, operating costs, efficiency, time savings</td>
</tr>
<tr>
<td>Orientation, on-boarding</td>
<td>Early turnover, training time, productivity, job satisfaction</td>
</tr>
<tr>
<td>Outsourcing initiatives</td>
<td>Operating costs, productivity, quality, cycle times, patient revenue</td>
</tr>
<tr>
<td>Physician engagement</td>
<td>Operating costs, patient outcomes, quality, productivity, cycle times, wait times, patient satisfaction</td>
</tr>
<tr>
<td>Personal productivity/time management</td>
<td>Time savings, productivity, stress reduction, job satisfaction, job engagement</td>
</tr>
<tr>
<td>Project</td>
<td>Key Impact Measurements</td>
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<td>------------------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
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<tr>
<td>Technology implementation</td>
<td>Process times, cycle times, response rates, error rates, productivity, efficiency, patient satisfaction, job satisfaction</td>
</tr>
<tr>
<td>Wellness/fitness</td>
<td>Turnover, medical costs, accidents, sick leave, absenteeism, job satisfaction, productivity</td>
</tr>
<tr>
<td>Workforce management systems</td>
<td>Staffing levels, costs, overtime, patient satisfaction</td>
</tr>
</tbody>
</table>
– Experimental vs. control group
– Trend line
– Forecasting – mathematical interpretation
– Calculating impact of other factors
– Participant/expert estimates
“Show me the money”

Value equals money

Converting to dollars
Converting to Money

— Focus on unit of measure
— Value of unit
— Calculate the change
— Determine annual value
— Calculate annual value of improvement
Tips for Dollars

- Standard values (output/quality/time)
- Historical costs
- Expert input
- External databases
- Link to other measures
- Participant estimates

- Management estimates
- Start with most accurate
- Consider availability
- Broadest perspective
- Multiple techniques
- Credibility test
- Adjustments
  - Time value of money
• Drivers of the project
• Invisible advantage
• Knowledge and technology age built upon
• Many have been converted to money
• Dominant business investment

**Include:**
• Brand
• Innovation
• Creativity
• Satisfaction
• Engagement
• Employability
• Leadership
• Organizational and development
• Human life
<table>
<thead>
<tr>
<th>Metric</th>
<th>Definition</th>
<th>Issues</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awareness</td>
<td>Percentage of total population who are aware of a brand or organization</td>
<td>Is awareness prompted or unprompted</td>
<td>Consideration of who has heard of the brand</td>
</tr>
<tr>
<td>Top of mind</td>
<td>First brand to be considered</td>
<td>May be subject to most recent advertising or experience</td>
<td>Saliency of brand</td>
</tr>
<tr>
<td>Knowledge</td>
<td>Percentage of population who know a service, have recollection of its advertising</td>
<td>Not a formal metric, is knowledge prompted or unprompted?</td>
<td>Extent of familiarity with service beyond name recognition</td>
</tr>
<tr>
<td>Beliefs</td>
<td>Patients’/consumers’ view of service, generally captured via survey responses, often through patients on a scale</td>
<td>Patients/consumers may hold beliefs with varying degrees of conviction</td>
<td>Perception of brand by attribute</td>
</tr>
<tr>
<td>Purchasing intentions</td>
<td>Probability of intention to purchase</td>
<td>To estimate probability of purchase, aggregate and analyze ratings of stated intentions (for example, top two boxes)</td>
<td>Measures pre-shopping disposition to purchase</td>
</tr>
<tr>
<td>Willingness to recommend</td>
<td>Generally measured by ratings on scale of 1 to 5</td>
<td>Nonlinear in impact</td>
<td>Shows strength of loyalty, potential impact on others</td>
</tr>
<tr>
<td>Customer satisfaction</td>
<td>Generally measured on scale of 1 to 5, in which patients declare satisfaction with brand in general or with specific attributes</td>
<td>Subject to response bias; captures views of current patients, not lost patients; satisfaction is function of expectations</td>
<td>Indicates likelihood of repurchase; reports of dissatisfaction show aspects requiring improvement to enhance loyalty</td>
</tr>
<tr>
<td>Willingness to search</td>
<td>Percentage of patients willing to delay purchases, change stores, or reduce quantities to avoid switching brands</td>
<td>Hard to capture</td>
<td>Indicates importance of distribution coverage</td>
</tr>
<tr>
<td>Loyalty</td>
<td>Measures include willingness to pay premium, to search, to stay</td>
<td>“Loyalty” itself not a formal metric, but specific metrics do measure aspects of this dynamic. New product entries may alter loyalty levels</td>
<td>Indication of base future patient revenue stream</td>
</tr>
</tbody>
</table>
Forecasting / Pro-forma

- Situation
- Predict/future
- Observe current
- Describe new
- Objectives
- Estimates
- Confidence intervals
- Convert to dollars
- Measure impact
- Time value of money
- Fully loaded costs
- Calculate forecast ROI
- Sensitivity analysis
- Communication
- Intangibles
Wellness and Prevention

- Background
- Action
- Results
Comprehensive Wellness 2007

• Health Risk Appraisal
• Biometric and Physical Assessment
• Health Coaching
• Wellness Intervention
  • Fitness Center
  • Eat Well Offerings
  • Nutrition and Weight Counseling
  • Stress Management
  • Smoking Cessation
• 70% plus participation rate (90% Today)
• 48% Highly engaged (60% Today)
• Designed to avoid or minimize high risk factors to lower cost of employer paid Health Insurance
• Evaluate and measure prevalence of Health risk factors and related dollars costs

• Risk precedes costs based upon flow of Medical and Pharmaceutical costs before and after high cost

• Avoid one risk factor reduces cost from $231-$320 per individual
• Completed Health Risk appraisal (Annually) and trended over time
• Clinical Biometric Test (Annually) and trended over time
• Health Plan costs per year and costs per risk factors calculated along with cost per member per month-trended over time
• Data classified into risk factor for disease state
• Participant stratified by member of risk factor
Methodology

- Plan Do Check Act cycle

- # of People consuming service
  
  # of units consumed
  
  Cost per unit of service
  
  Result: cost of service

- Performance Improvement

Cost (without change) – (with change) - Investment

Investment in Change

= ROI
Population Risk Management

Unhealthy
Unwell
High Risk
High use

Low risk
Low use
Healthy and well

Unhealthy
Well
Moderate to high risk
Moderate to low use

Low risk
Low use
Healthy and well
Risk Migration

![Risk Migration Chart]

- **High**
- **Medium**
- **Low**

<table>
<thead>
<tr>
<th>Years</th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>06</td>
<td>33.4</td>
<td>37</td>
<td>29.7</td>
</tr>
<tr>
<td>07</td>
<td>29.7</td>
<td>32.1</td>
<td>30.7</td>
</tr>
<tr>
<td>08</td>
<td>37.2</td>
<td>36.7</td>
<td>25.6</td>
</tr>
<tr>
<td>09</td>
<td>37.7</td>
<td>39.6</td>
<td>23.6</td>
</tr>
<tr>
<td>10</td>
<td>43.0</td>
<td>39.8</td>
<td>21.6</td>
</tr>
</tbody>
</table>

%
ROI Calculation

Cost Avoidance $13,153,644 – Investment $5,482,000

Investment $5,482,000

= 139%
• Incentives drive participation
• Health coaching drives engagement
• Cost reduction follows action
• Majority health costs driven by few
• People that drive health costs migrate from low risk to high risk before incurring costs
• Morale increases with wellness listed as #1 benefit
• Benefits satisfaction levels exceed Fortune Top 100 Employer benchmarks
Emergency Department Redesign

• Background
• Action
• Results
Background

• ED waits > 4 hours
• 4 to 5% left without treatment
• Bypass hours
• Lower Patient Satisfaction
• “Game Changer” redesign
Action

• Purpose - Timely Access
• Objective:
  – Reduce wait times
  – Eliminate LWOT
  – Increase Patient Satisfaction
• Kaizen – Rapid Cycle
  – Tested process/computer simulation
  – Systems interdependency
  – Problem solving
  – Support for implementation
  – Metric Driven
  – One week event (40 participants)
    • Education
    • Process and data analysis
    • Process layout redesign
Paradigm Shift

- Triage replaced by intake process
- Intake by MD and Nurse
- Most patients do not require a bed
- Staffing to anticipate surge rather than to catch up
- Patients needs first
DO – REDESIGNED PROCESS

- Intake Screener Nurse/Registration
- Recliner
- Bed (gurney)
- Disposition Treatment
- DRD (Diagnostics, Results, Discharge)
- Disposition


drawio
Case Study #2

DO–ED Physical Layout
(Large Campus)

- Pre-Redesign
  - 2 Triage
  - 13 Acute
  - 3 Trauma
  - 4 Chest Pain
  - 9 Treat and discharge
  - 4 Overflow
  - 35 Total Treatment Spaces

- Redesign
  - 16 Acute beds
  - 13 Recliners
  - 8 DRD Chairs
  - 2 Procedure Rooms
  - 2 Lab Drawing Stations
  - 41 Total Treatment Spaces

WAIT

Scripps
A World of Healing
Case Study #2

CHECK – Key Performance Metrics

- “Daily Weigh-In” board updated at noon daily with the performance of the 2 previous shifts for each metric was posted
- Data updates sent via Statit piMD to executive sponsors and ED leadership team weekly

- Primary Key Performance Metrics
  - Average Door-to-Intake Interval Time (Goal 40 min)
    - Operational Definition:
      - Quick Registration-to-Intake completed
  - Outpatient Average Length of Stay (Goal 3 hrs)
  - Inpatient Average Length of Stay (Goal 5 hrs)
  - % Left Without Treatments [LWOTS] (Goal 1%)
  - Total Bypass Hours (Goal 50 hrs/ month)
Evaluation Methodology

• The Measurement methods were developed to measure progress towards the goal. The measures are:
  – Average door to intake interval time
  – Outpatient average length of stay
  – Inpatient average length of stay
  – Percentage left without treatment
  – Total by pass hours
Case Study #2

CHECK–STATIT pIMD Update Sample Campus 1 % Patients Left Without Treatment

ED Campus 1 – Left Without Treatment

NOTE: Confidential Document

Jun 10, 2010 13:30:31
Case Study #2

Redesign Comparison Pre to Post Redesign
(Door to Doc and ALOS by Location)

- CV
- SD
- EN
- LJ
- SCTP

- Jan-10 D to D
- (4/1 - 4/15) 2011 D to D
- Jan-10 ALOS
- (4/1 - 4/15) 2011 ALOS

Hours

CV SD EN LJ SCTP
Case Study #2

Redesign Comparison Pre to Post Redesign
(Average Daily LWOT by Location)

Percent of Patients

Site

CV SD EN LJ SCTP

Jan-10 LWOT

(4/1 - 4/15) 2011 LWOT
## Monthly ED Visits

<table>
<thead>
<tr>
<th>ER/UCC visits</th>
<th>Before redesign</th>
<th>After redesign</th>
<th>Increase</th>
<th>% Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mercy SD</td>
<td>4,196</td>
<td>4,844</td>
<td>648</td>
<td>15%</td>
</tr>
<tr>
<td>Mercy CV</td>
<td>3,241</td>
<td>3,817</td>
<td>576</td>
<td>18%</td>
</tr>
<tr>
<td>Encinitas</td>
<td>3,103</td>
<td>3,324</td>
<td>221</td>
<td>7%</td>
</tr>
<tr>
<td>La Jolla</td>
<td>2,548</td>
<td>2,629</td>
<td>81</td>
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<td>TP UCC</td>
<td>2,809</td>
<td>2,978</td>
<td>169</td>
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<td><strong>Total</strong></td>
<td><strong>15,897</strong></td>
<td><strong>17,592</strong></td>
<td><strong>1,695</strong></td>
<td><strong>11%</strong></td>
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Investment was comprised of consulting fees of $750,000, team Kaizen event costs of $250,000 and furniture costs of $50,000 for total cost of $1,050,000.

$6,346,409 (Net income increase) - $1,050,000 (Costs)

$1,050,000 (Costs)

• Loss of Nurses
• Adjustment
Lessons Learned

• Shorter wait times increased patient throughput; therefore, revenue due to higher volumes per the increased capacity.
• Less “left without treatment” increased revenue.
• Case mix (payor types) improved due to increased access for patients due to less ED bypass (diversion) time and greater numbers of ambulance visits (paying patients).
• Patient satisfaction increased due to short wait times.
• A systems approach is necessary to reduce variation.
• Cost of lost Nurses
Horizontal Management Structure

• Background
• Action
• Results
Background

- Fragmented System
- Variation of systems and practices
- 150 million cost reduction to reach Medicare break even
One Scripps: Four Divisions

NEW Horizontal Management Structure

- Reviews processes and practices across the system
- Reduce **NON-VALUE ADDED VARIATION**
- Improve **QUALITY**
- Reduce **COST**
Horizontal Organization

Functional/Horizontal Services

- NURSING
- PHARMACY
- IMAGING
- LABORATORY
- FOOD & NUTRITION
- ED / URGENT CARE
- GI
- CATH LAB
- OR
- SPD
- HOSPITALIST/INTENSIVIST

Geographic Locations

- Community / Home
- Medical Groups / Foundation
- Encinitas
- La Jolla
- Mercy San Diego
- Mercy Chula Vista
- Green

Clinical Care Lines

- Cardiovascular
- Oncology
- Women’s and Newborn
- Neurosciences
- Spine
- Behavioral Health
- Diabetes Primary Care
- MSK / Ortho /
Horizontal Co-Management Committees

Role

- Reduce variation in labor, supplies, services, processes and technology
- Improve capacity and throughput
- Recommend capital for respective area

Membership

- Administrative and clinical leaders from respective area from each site
- Physicians (where co-management is needed)
Clinical Care Lines

Role
- Set priorities for clinical care line
  - Clinical guideline development
  - Reduce variation in clinical workflow
- Monitor performance and goal achievement
- Program development
  - New services / Change in services
  - Volume growth / Aggregation

Membership
- Physicians
- RNs/APNs
- Care line workgroup chairs

Aligned Resources
- Marketing
- Finance
- Supply Chain Management
- Research
- Project Mgmt.
- Pharmacy
- Education
- Nursing Leadership Linkage
- Data Analytics
Horizontal: Approach and Tools

**Approach**

**Clinical Care Lines**
- Episode (Time)
  - Pre-Hospital
  - Hospital
  - Post-Hospital
- Reduce variation in clinical workflow

**Horizontal Functions**
- Geography (Location)
  - Procedural / Functional Department
- Function performed the same consistently regardless of location – Reduce variation

**Tools**

**Organized Practices**
- Shared Baselines – Disease state/condition
- Evidence-Based
  - Preformatted Orders
  - Protocols
  - Standing Orders

**Reminders / Alerts**
- Measurement and feedback
- Organized Processes
  - Labor, Supplies, Services
  - Training
  - Capacity
  - Throughput
Variation Analysis

NEUROLOGY DRGs - FY11 Inpatients

- Variation to internal and external benchmarks:
  - Length of stay
  - Labor
  - Supplies
  - Pharmacy
  - Services

- Risk/Severity adjustment
- By DRG or episode groups as identified by MDs

<table>
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<tr>
<th>DRG</th>
<th>Site</th>
<th>Cases</th>
<th>Avg SOI</th>
<th>ALOS</th>
<th>LOS Variation - Scripps</th>
<th>LOS Variation-MC Geometric Mean</th>
<th>Overall Variation</th>
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<td>Chula Vista</td>
<td>104</td>
<td>2.45</td>
<td>5.60</td>
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<td>62</td>
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<tr>
<td>System</td>
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<th>DRG 69 - TRANSIENT ISCHEMIC</th>
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<tr>
<th>DRG 74 - CRANIAL &amp; PERIPHERAL</th>
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Neurorad 2,344 | 3,398 | $2,178,720 | 2,055 | $1,643,672 | $3,524,186 | $315,945 | $635,988 | $4,221,528 |

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<tr>
<th>Site</th>
<th>Cases</th>
<th>Average SOI</th>
<th>ALOS</th>
<th>LOS Variation - Scripps</th>
<th>LOS Variation-MC Geometric Mean</th>
<th>Overall Variation</th>
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<tr>
<td>Scripps</td>
<td>34</td>
<td>2.04</td>
<td>2.00</td>
<td>1.90</td>
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Horizontal / Clinical Care: Critical to Future

- Physician Co-Management
- Engineer and Systemize Care
- Accelerate Transformational Change
- Reduce Variation in Care, Outcomes and Costs
- Improve Value
Medical Management Compact: Process for Development, Review, Implementation of Systemwide Order Sets

Timeline
1. SWOS Development 1 Day
2. Feedback (2 cycles) 30 Days
3. Endorse/Approve 1 Cycle
4. Accept/Ratify 1 Cycle
5. Implement TBD

GOAL = 30 Days
TARGET = 60 Days
THRESHOLD = 90 Days

Concurrent, Time Limited Feedback <30 Days (Two Cycles)

Legend
- Design
- Review
- Implement
Horizontal Management Initiatives

- Reducing Labor Costs
- Emergency Department Redesign
- PCI Cost Variation
- Float Pools
- Radiation Safety
- System Ancillary Scheduling
- Appropriate Utilization
- Care Management Redesign

Navigator-based, utilizing bedside rounds with care team following patients 30 days post discharge; results include reduced LOS and readmits and improved patient satisfaction.
## Results: Performance Improvements

<table>
<thead>
<tr>
<th>Performance Improvements</th>
<th>FY11</th>
<th>FY12</th>
<th>FY11</th>
<th>FY12</th>
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<td>Supplies and Services</td>
<td>$13,927</td>
<td>$12,400</td>
<td>$14,003</td>
<td>$13,280</td>
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<td>Labor</td>
<td>21,264</td>
<td>15,122</td>
<td>23,177</td>
<td>18,199</td>
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<td>Retro Hierarchical Condition Classification</td>
<td>6,059</td>
<td>3,592</td>
<td>6,217</td>
<td>2,400</td>
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<td>Bed Day Improvement</td>
<td>513</td>
<td>424</td>
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<td>Denials Management</td>
<td>1,222</td>
<td>250</td>
<td>3,194</td>
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<td>Documentation Improvement - Cath Lab, etc</td>
<td>6,085</td>
<td>1,950</td>
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<td>3,500</td>
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<td>Charge Capture</td>
<td>6,943</td>
<td>3,689</td>
<td>1,839</td>
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<td>Coding Edits Reconciliation</td>
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<td>3,289</td>
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<td>Medical Records Imaging</td>
<td>390</td>
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<td>OR Levels</td>
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<td>1,650</td>
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<td>MD Fee Schedule Pricing</td>
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<td>1,568</td>
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<td>Group Health Wellness</td>
<td>2,792</td>
<td>2,000</td>
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<td>2,000</td>
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<td>Education Insourcing</td>
<td></td>
<td>1,669</td>
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<td>1,600</td>
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<td>Transcription Savings</td>
<td>2,500</td>
<td>3,100</td>
<td>5,961</td>
<td>3,018</td>
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<td>Biomed Imaging Maintenance</td>
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<td>1,201</td>
<td>1,562</td>
<td>1,053</td>
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<tr>
<td>Centralized Lab</td>
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<td></td>
<td>845</td>
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<tr>
<td>In Source Billing Function</td>
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<td>1,500</td>
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<tr>
<td>Pharmaceuticals</td>
<td>2,262</td>
<td>2,700</td>
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<td>Sales Tax Rebate</td>
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<td>1,300</td>
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<td><strong>Total</strong></td>
<td><strong>$73,321</strong></td>
<td><strong>$53,522</strong></td>
<td><strong>$63,931</strong></td>
<td><strong>$49,819</strong></td>
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ROI Calculation

Cost Reduction $136 Million – Cost to implement $4.50 million = 292%

Investment $4.50 Million
Results

Cultural Change

Structure to Reduce Waste

New Decision-making Structure Aligns Resources

Co-Management
Mr. Buzachero joined Scripps Health in September 2001 and has since led Scripps Health to national recognition as a top employer by AARP the past ten years, Working Mother Magazine for the past seven years and Fortune Magazine’s Top 100 Employers for six consecutive years. He has led several new and successful initiatives including a comprehensive employee wellness program, implementing an annual management cycle that integrates strategic planning, capital planning, operations planning, performance management, and talent management, as well as decertifying the California Nurses Association to maintain the only non-union health system in California. Vic’s leadership has helped grow Scripps Health to a $2.6 billion dollar integrated delivery health system.

Prior to coming to Scripps Health, Vic held top executive level positions at organizations such as Providence Health System, Banner Health System, Presbyterian Health System (Texas Health Resources) and Baptist Health System. During his tenure at these organizations Vic developed and successfully implemented programs including leadership development, service excellence, reduction in employee turnover, improved employee satisfaction as well as an E Health strategy. Additionally, he served as Vice President of Marketing (hospital acquisitions) for Quorum Health and was co-owner and principal of a national labor relations and executive compensation consultancy. In 1999 Franklin Covey honored Vic with the “Organization of Excellence” award for his prominent efforts in organizational development and effectiveness and, in 2011, Vic was honored by HR Executive Magazine as a top HR Executive for the year.

Vic is frequently sought out to speak at the national level on ROI in health care, work force initiatives and labor relations among many other topics. He is the former chairman of the American Hospital Association Solutions Board in addition to serving on other boards.
Dr. Patti Phillips is president and CEO of the ROI Institute, Inc., the leading source of ROI competency building, implementation support, networking, and research. A renowned expert in measurement and evaluation, she helps organizations implement the ROI Methodology in 50 countries around the world.

Since 1997, following a 13-year career in the electric utility industry, Phillips has embraced the ROI Methodology by committing herself to ongoing research and practice. To this end, she has implemented ROI in private sector and public sector organizations. She has conducted ROI impact studies on programs such as leadership development, sales, new-hire orientation, human performance improvement, K-12 educator development, and educators' National Board Certification mentoring.

Phillips teaches others to implement the ROI Methodology through the ROI Certification process, as a facilitator for ASTD’s ROI and Measuring and Evaluating Learning Workshops, and as professor of practice for The University of Southern Mississippi Gulf Coast Campus Ph.D. in Human Capital Development program. She also serves as adjunct faculty for the UN System Staff College in Turin, Italy, where she teaches the ROI Methodology through their Evaluation and Impact Assessment Workshop and Measurement for Results-Based Management. She serves on numerous doctoral dissertation committees, assisting students as they develop their own research on measurement, evaluation, and ROI.

Phillips’s academic accomplishments include a Ph.D. in International Development and a master’s degree in Public and Private Management. She is a certified in ROI evaluation and has been awarded the designations of Certified Professional in Learning and Performance and Certified Performance Technologist.

She, along with her husband Jack Phillips, contributes to a variety of journals and has authored a number of books on the subject of accountability and ROI, including Survey Basics (ASTD, 2013); Measuring the Success of Coaching (ASTD, 2012); 10 Steps to Successful Business Alignment (ASTD, 2012); The Bottomline on ROI 2nd Edition (HRDQ, 2012); Measuring Leadership Development: Quantify your Program’s Impact and ROI on Organizational Performance (McGraw-Hill, 2012); Measuring ROI in Learning and Development: Case Studies from Global Organizations (ASTD, 2011); The Green Scorecard: Measuring the ROI in Sustainability Initiatives (Nicholas Brealey, 2011); Return on Investment in Meetings and Events: Tools and Techniques to Measure the Success of All Types of Meetings and Events (Elsevier, 2008); Show Me the Money: How to Determine ROI in People, Projects, and Programs (Berrett-Koehler, 2007); The Value of Learning (Pfeiffer, 2007); Return on Investment Basics (ASTD, 2005); Proving the Value of HR: How and Why to Measure ROI (SHRM, 2005); Make Training Evaluation Work (ASTD, 2004); The Bottom Line on ROI (Center for Effective Performance, 2002), which won the 2003 ISPI Award of Excellence; ROI at Work (ASTD, 2005); the ASTD In Action casebooks Measuring ROI in the Public Sector (2002), Retaining Your Best Employees (2002), and Measuring Return on Investment Vol. III (2001); the ASTD Infoline series, including Planning and Using Evaluation Data (2003), Managing Evaluation Shortcuts (2001), and Mastering ROI (1998); and The Human Resources Scorecard: Measuring Return on Investment (Butterworth-Heinemann, 2001). Patti Phillips can be reached at patti@roiinstitute.net.
<table>
<thead>
<tr>
<th>Victor Buzachero,</th>
<th>Patti J. Phillips, PhD,</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate Senior Vice President</td>
<td>President</td>
</tr>
<tr>
<td>for Innovation, Human Resources</td>
<td>ROI Institute, Inc.</td>
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<td>and Performance Management</td>
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<tr>
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<tr>
<td>14081 Collins Ranch Place</td>
<td>350 Crossbrook Drive</td>
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<td>Chelsea, AL  35043</td>
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<tr>
<td>858-678-6168</td>
<td>205-678-8101</td>
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<tr>
<td><a href="mailto:buzachero.victor@scrippshealth.org">buzachero.victor@scrippshealth.org</a></td>
<td><a href="mailto:info@roiinstitute.net">info@roiinstitute.net</a></td>
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</table>
• Reinhardt, Uwe, Presentation, Health Solutions Council, U.S. Chamber of Commerce, June 2012.
• Congressional Budget Office, Total Revenue and Outlays (Percentage of gross domestic product), 1971-2021, February 15, 2011.
• Milliman Medical Index 2012, Allocation of 2012 medical costs.
• Healthcare Advisory Board Company, 2012 National Presentation Series.
• ROI Institute, Inc. Birmingham, Alabama
Questions?