Proving ROI Value of Healthcare Education and Training Simulation Programs

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Disclosure(s)

- Associate with the ROI Institute
- No financial agreements to disclose
What is Value?
The Value Imperative

Imperative to show the value of expenditures in terms that resonate with all stakeholders.

### Shifting Paradigms

<table>
<thead>
<tr>
<th>Pay-For-Service</th>
<th>Pay-For-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity Based</td>
<td>Results Based</td>
</tr>
</tbody>
</table>

- **No business need for the program** | **Program linked to specific business needs**
- **No assessment of performance issues** | **Assessment of performance effectiveness**
- **No specific measurable objectives** | **Specific objectives for behavior and business impact**
- **No effort to prepare program participants to achieve results** | **Results expectations communicated to participants**
- **No effort to prepare the work environment to support transfer** | **Environment prepared to support transfer**
- **No efforts to build partnerships with key managers** | **Partnerships established with key managers and clients**
- **No measurement of results or benefit-cost analysis** | **Measurement of results and benefit-cost analysis**
- **Planning and reporting is input focused** | **Planning and reporting is outcome focused**

All healthcare systems are working toward building internal systems that not only deliver better quality but also prove them.

The Prove Credible Value Evolution

**Term**
Show Me!

**Issue**
Collect Impact Data

Show Me the **Money**!

And Convert Data to Money

Show Me the **Real** Money!

And Isolate the Effects of the Project

Show Me the **Real Money, And Make Me Believe It’s a Great Investment**!

And Compare the Money to the Cost of the Project

“...hospitals typically measure ROI from a business perspective—cost, revenues or operating efficiencies—but many benefits of clinical applications fall into quality and safety realms that do not easily translate into dollars.”
## Prove Credible Value Standard Shift

<table>
<thead>
<tr>
<th>Traditional: Value of Capital Investments</th>
<th>Major Shift: Value of Non-Capital Investments</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Buildings</td>
<td>- Marketing</td>
</tr>
<tr>
<td>- Equipment</td>
<td>- Human Resources</td>
</tr>
<tr>
<td>- Tools</td>
<td>- Quality</td>
</tr>
<tr>
<td>- Vehicles</td>
<td>- Staff Support</td>
</tr>
<tr>
<td>- Companies</td>
<td>- Processes</td>
</tr>
<tr>
<td>- Some Technology</td>
<td>- Some Technology</td>
</tr>
</tbody>
</table>

- ~ 15% of expenditures
- ROI is the method
- ~ 85% of expenditures
- ROI now used here

"We should measure clinical ROI in terms of measurable impact on patient care."

Bean Counters Need Beans to Count
It’s That Easy!
Value & ROI = Measurable Impact

To create ROI, we must develop a "value measuring methodology."

The ROI Value Stream Methodology

A comprehensive measurement and evaluation process that generates six types of measures:

1. Reaction and Planned Action
2. Learning
3. Application
4. Business Impact
5. Return on Investment
6. Intangible Measures

This balanced approach to measurement includes a technique to isolate the effect of the program or solution.

The business case would be easier to assess if interventions were implemented with strong evaluation designs that could isolate intervention effects.

The “New” Definition of Value

Patient Care Value Must:

- Be balanced, with qualitative and quantitative data
- Come from credible sources
- Satisfy all key stakeholders
- Reflect strategic and tactical issues
- Contain financial and non-financial perspectives
- Be consistent in collection and analysis
- Emphasize credible, sustainable methodology
- Be grounded in conservative standards

The New Value Imperative

The ability to connect the dots and show bottomline accountability while maintaining quality and efficiencies will be the key to survival in the healthcare industry.

A Comprehensive Unit Based Safety Program

Issue
Reduce central line blood infections in intensive care units occurring at a group of hospitals located at Birmingham, AL metro area.

Program
Implement a new set of procedures to reduce the number of infections
- Involved a checklist system that set up specific steps
- Used by doctors, nurses, and technicians

Organizational Change Opportunity
Culture change required

ROI Opportunity
Needed various levels of data beyond the traditional monitoring of infections, length of stay, and costs associated with these infections.


Original Sources: Alabama Hospital Association/ The Birmingham News/ROI Institute, Inc.
10-Step ROI Methodology

**Evaluation Planning**

- Develop/Review Objectives of Program
- Develop Evaluation Plans and Baseline Data

**Data Collection**

- Level 4: Business Impact
- Level 3: Application & Implementation
- Level 2: Learning & Confidence
- Level 1: Reaction & Planned Action

- Collect Data After Program Implementation
- Collect Data During Program Implementation

**Data Analysis**

- Isolate the Effects of the Program
- Convert Data to Monetary Value
- Calculate the Return on Investment

**Reporting**

- Generate Impact Study & Report Results
- Identify Intangibles (Potential Benefits)

ROI Value Stream Alignment Model

Start Here

Needs

Payoff

ROI Objective

Business

Impact Objective

Performance

Application Objective

Learning

Learning Objective

Preference

Reaction Objective

Reaction

Evaluation

End Here

ICU Central Line Infection Reduction Program

Initial Analysis

Measurement & Evaluation

Business Alignment & Forecasting

ROI Process Model
# Needs Value Stream Chain of Impact

<table>
<thead>
<tr>
<th>Need</th>
<th>Need-Driven Value Stream Questions</th>
</tr>
</thead>
</table>
| Payoff     | ✓ Is this infection reduction program a good investment?  
            | ✓ Are there business impact measures that cannot be converted to money? |
| Business   | ✓ What clinical and business impact measures need to improve? |
| Performance| ✓ What practices do physicians, nurses, and technicians need to perform on the job as a result of the project that necessary, valuable, important? |
| Learning   | ✓ What do the physicians, nurses, and technicians affected by the program need to know to make the project successful? |
| Preference | ✓ Do the physicians, nurses, and technicians affected by the project perceive it as necessary, valuable, important? |
| Input      | ✓ Who need to be involved in the project?  
            | ✓ What is the budget? |

Payoff – Obvious and Not So

- Hospital operating costs 47% higher than industry average
- Patient satisfaction rating of 3.89 on a 10-point scale
- Average length of stay is 50% longer than benchmarked hospitals
- Bed occupancy rate at 40% & declining
- Noncompliance fines totaling $1.2 million, up 82% from last year
- System downtime is twice the average of last year’s performance
- Excessive patient mortality: 30% higher than previous year
- Unplanned readmission rate is the highest in the metro area
- Implement a physician engagement program
- Become a medical technology leader
- Become a “green” hospital
- Create a world-class health center
- Implement a new risk management system
- Improve leadership competencies for all managers and directors
- Create a wellness and fitness center
- Implement Lean Six Sigma in each hospital

# Needs Value Stream Chain of Impact

<table>
<thead>
<tr>
<th>Need</th>
<th>Need-Driven Value Stream</th>
</tr>
</thead>
</table>
| **Payoff** | - Patient Safety  
               - Quality Care |
| **Business** | - Number of central line bloodstream infections  
                   - Mortality rate  
                   - Days in hospital  
                   - ICU Costs |
| **Performance** | - Inefficient procedures, inconsistent compliance  
                   - Lack of accountability |
| **Learning** | - Consistent use of new procedures to standard  
                   - Peer communication accountability |
| **Preference** | - Use physical simulation to refine, validate, and practice new procedure  
                   - Value program as:  
                     - Necessary  
                     - Important  
                     - Feasible  
                     - Practical |
<p>| <strong>Input</strong> | - All doctors, nurses, and technicians (participants) in the intensive care units are involved |</p>
<table>
<thead>
<tr>
<th>Type</th>
<th>Needs-Driven Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROI</td>
<td>✓ ROI Objective is 25%</td>
</tr>
<tr>
<td>Impact</td>
<td>✓ Central line bloodstream infections will be reduced by 50% in six months</td>
</tr>
<tr>
<td></td>
<td>✓ Mortality rated reduced by 5%</td>
</tr>
<tr>
<td></td>
<td>✓ Days in hospital reduced by 2%</td>
</tr>
<tr>
<td></td>
<td>✓ ICU Costs reduced by 3%</td>
</tr>
<tr>
<td>Application</td>
<td>✓ Checklist will be monitored</td>
</tr>
<tr>
<td></td>
<td>✓ The use of new procedures will be observed</td>
</tr>
<tr>
<td></td>
<td>✓ Extent of “speak up” conversations will be collected</td>
</tr>
<tr>
<td>Learning</td>
<td>✓ All participants must demonstrate knowledge of the checklist and new procedures</td>
</tr>
<tr>
<td></td>
<td>✓ Participants must practice “speak up” conversations with colleagues and visitors</td>
</tr>
<tr>
<td>Preference</td>
<td>• All participants must perceive the value of the program as:</td>
</tr>
<tr>
<td></td>
<td>▪ Necessary</td>
</tr>
<tr>
<td></td>
<td>▪ Important</td>
</tr>
<tr>
<td></td>
<td>▪ Feasible</td>
</tr>
<tr>
<td></td>
<td>▪ Practical</td>
</tr>
<tr>
<td>Input</td>
<td>✓ Involve all doctors, nurses, and technicians (participants) in the intensive care units</td>
</tr>
</tbody>
</table>
### Evaluation Value Chain of Impact Example

<table>
<thead>
<tr>
<th>Type</th>
<th>Needs-Driven Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ROI</strong></td>
<td>✓ Calculate ROI</td>
</tr>
<tr>
<td><strong>Impact</strong></td>
<td>Monitor for 6 months:</td>
</tr>
<tr>
<td></td>
<td>✓ Number of central line bloodstream infections</td>
</tr>
<tr>
<td></td>
<td>✓ Mortality rate</td>
</tr>
<tr>
<td></td>
<td>✓ Days in hospital</td>
</tr>
<tr>
<td></td>
<td>✓ ICU Costs</td>
</tr>
<tr>
<td><strong>Application</strong></td>
<td>✓ 3-month questionnaire to check frequency use</td>
</tr>
<tr>
<td></td>
<td>✓ Supervisors monitor work</td>
</tr>
<tr>
<td><strong>Learning</strong></td>
<td>✓ Practice clinical and conversation skills to standard with feedback during physical simulation</td>
</tr>
<tr>
<td><strong>Reaction</strong></td>
<td>✓ Reaction questionnaire at the end of physical simulation refinement, validation, &amp; practice</td>
</tr>
<tr>
<td></td>
<td>✓ Commit to implementation Action Plan</td>
</tr>
<tr>
<td><strong>Input</strong></td>
<td>✓ All doctors, nurses, and technicians (participants) in the intensive care units involved</td>
</tr>
</tbody>
</table>
## ROI Value Stream Chain of Impact Example

<table>
<thead>
<tr>
<th>Need</th>
<th>Objectives</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Payoff</strong></td>
<td>- Quality Care</td>
<td>- ROI Objective is 25%</td>
</tr>
<tr>
<td></td>
<td>- Patient Safety</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Calculate ROI/BCR</strong></td>
</tr>
<tr>
<td><strong>Business</strong></td>
<td>- Number of Infections</td>
<td>- Central line bloodstream infections will be reduced by 50% in six months</td>
</tr>
<tr>
<td></td>
<td>- Mortality Rate</td>
<td>- Mortality rated reduced by 5%</td>
</tr>
<tr>
<td></td>
<td>- Days in Hospital</td>
<td>- Days in hospital reduced by 2%</td>
</tr>
<tr>
<td></td>
<td>- ICU Costs</td>
<td>- ICU Costs reduced by 3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Performance</strong></td>
<td>- Insufficient, inconsistent procedures</td>
<td>- Checklist will be monitored</td>
</tr>
<tr>
<td></td>
<td>- Lack of accountability</td>
<td>- The use of new procedures will be observed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Extent of “speak up” conversations will be collected</td>
</tr>
<tr>
<td><strong>Learning</strong></td>
<td>- Consistent use of procedures to standard</td>
<td>- All participants must demonstrate knowledge of the checklist and new</td>
</tr>
<tr>
<td></td>
<td>- Peer communication accountability</td>
<td>procedures</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Participants must practice “speak up” conversations with colleagues and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>visitors</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Practice clinical and</strong></td>
</tr>
<tr>
<td><strong>Preferences</strong></td>
<td>- Use physical simulation to refine, validate, and practice</td>
<td>conversation skills to standard with feedback during physical</td>
</tr>
<tr>
<td></td>
<td>- Value program as necessary, important, feasible, and practical</td>
<td>simulation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- All participants must perceive the value of the program as:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Necessary</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Important</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Feasible</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Practical</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Reaction questionnaire</strong></td>
</tr>
</tbody>
</table>

**ICU Central Line Infection Reduction Program**
ROI Value Stream Alignment Model

**Needs**
- Quality Care
- Patient Safety
- Number of Infections
- Mortality Rate
- Days in Hospital
- ICU Costs

**Business**
- Inefficient, inconsistent, procedures
- Lack of accountability
- Consistent use of procedures to standard
- Peer communication accountability

**Performance**
- Use physical simulation to refine, validate, and practice
- Value program as necessary, important, feasible, and practical

**Learning**
- Monitor checklist compliance
- Observe procedure in practice
- Collect frequency of “speak up” conversation
- Demonstrate competence
- Applying checklist procedures
- Using “speak up” technique
- Favorable rating (4 out of 5) on program’s need, relevance, & practicality
- Commitment to Action Plan

**Preference**
- Initial Analysis
- Business Alignment & Forecasting

**Reaction**
- ROI Process Model

**Impact**
- 3-month questionnaire to check frequency use
- Supervisors monitor work
- Practice clinical and conversation skills to standard with feedback during physical simulation

**Application**
- Reaction questionnaire at the end of physical simulation validate & practice
- Commit to implementation Action Plan

**Evaluation**
- ROI
- Calculate ROI
- Monitor for 6 months:
  - Number of Infections
  - Mortality Rate
  - Days in Hospital
  - ICU Costs

**Payoff**
- ROI of 25%
- Reduce central line infections by 50%
- Reduce mortality rate by 5%
- Reduce hospital days by 2%
- Reduce ICU costs by 3%

**Measurement & Evaluation**
- 3-month questionnaire to check frequency use
- Supervisors monitor work
- Practice clinical and conversation skills to standard with feedback during physical simulation

**Start Here**
- Business Alignment & Forecasting

**End Here**
- ROI Process Model
**Example Application Case Studies**

<table>
<thead>
<tr>
<th>Program</th>
<th>Key Impact Measures</th>
<th>ROI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enhance Recovery after Colorectal Surgery</td>
<td>Reduce length of stay, improve patient outcomes leading to significant reduction in complications, reduce per-capita costs</td>
<td>118%</td>
</tr>
<tr>
<td>Competency Development (Veterans Health Administration)</td>
<td>Time savings, work quality, faster response</td>
<td>159%</td>
</tr>
<tr>
<td>Sexual Harassment Prevention (Healthcare Chain)</td>
<td>Complaints, turnover, absenteeism, job satisfaction</td>
<td>1,052%</td>
</tr>
<tr>
<td>Electronic Documentation Tool (Caremark/CVS Pharmacy)</td>
<td>Productivity, quality, materials cost</td>
<td>79.5%</td>
</tr>
<tr>
<td>Performance Management (Restaurant Chain)</td>
<td>A variety of measures, such as productivity, quality, time, costs, turnover, and absenteeism</td>
<td>298%</td>
</tr>
<tr>
<td>Process Improvement Team (Apple Computer)</td>
<td>Productivity and labor efficiency</td>
<td>182%</td>
</tr>
<tr>
<td>Diversity (Nextel Communications)</td>
<td>Retention, employee satisfaction</td>
<td>163%</td>
</tr>
<tr>
<td>Retention Improvement (Financial Services)</td>
<td>Turnover, staffing levels, employee satisfaction</td>
<td>258%</td>
</tr>
<tr>
<td>Stress Management (Electric Utility)</td>
<td>Medical costs, turnover, absenteeism</td>
<td>320%</td>
</tr>
<tr>
<td>Executive Leadership Development (Financial)</td>
<td>Team projects, individual projects, retention</td>
<td>62%</td>
</tr>
<tr>
<td>E-Learning (Petroleum)</td>
<td>Sales</td>
<td>206%</td>
</tr>
<tr>
<td>Executive Coaching (Nortel Networks)</td>
<td>Several measures including productivity, quality, cost control, and product development time</td>
<td>788%</td>
</tr>
<tr>
<td>Absenteeism Reduction (Metro Transit Authority)</td>
<td>Productivity, employee satisfaction, customer satisfaction</td>
<td>882%</td>
</tr>
</tbody>
</table>
ROI Value Stream Methodology: The Payoff

- Align projects to healthcare organization needs
- Show contributions of selected projects
- Earn respect of senior management/administrators
- Build staff morale
- Justify/defend budgets
- Improve support for projects
- Enhance design and implementation processes
- Identify inefficient projects that need to be redesigned or eliminated
- Identify successful projects that can be implemented in other areas
- Earn a “seat at the table”

It’s That Easy!
References


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