Fable 2.0: The Compelling Business Case for Building Better Buildings

Osher Lecture, UCSD
La Jolla, California
July 24, 2014

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Learning Objectives

1. In light of the challenges facing health care leaders today, understand why architecture and the arts should become a priority.
2. Understand the Compelling Business Case for better hospitals
3. Consider your ideal hospital environment
7 Concurrent Revolutions

- Quality, Safety, Cost
- Transparency of Outcomes and Scores
- Increasing Patient Expectations
- Paying for Value instead of Volume
- Moving from the Single Aim to the Triple Aim
- Environmental Sustainability is Now Mainstream
- Discouraged, Unhappy Workforce
The New Reality

- Progressive hospitals can achieve measurable improvements and operating savings through evidence based design.
- This reality requires a fundamental shift to make design innovations a priority.
- Fable hospital 2.0 shows there is a compelling business case to make this shift.
- To effectively implement this requires becoming bi-lingual.
THE QUESTION: CAN DESIGN MAKE A DIFFERENCE?
The Evidence Is In

“Improving Health Care Through the Arts: Guidelines for Leaders”

A video produced by Blair and Georgia Sadler for the Institute for Healthcare Improvement
Objective #2

- Understand the Business Case for Designing Better Facilities
How Much Does Building and Operating an Optimally Designed Hospital Cost?

- To answer this, we created the *Fable Hospital*

- Never been built before, but Fable’s components are based on actual experience in real hospitals

- Incremental cost of key design innovations and annual operating cost impacts were analyzed
The core of the business case is the balance between one time capital cost and multi-year operating costs.
Fable Hospital 2.0: Updated 2011

- Assumed a 300 bed hospital
- Total construction cost of $350M
- Incremental cost 8.4%, ($29M)
- ROI $10M annually (less than 3 years)
Selected EBD Features of Fable

- Larger, windowed, single patient rooms
- Variable acuity patient rooms
- Decentralized, barrier free nursing stations
- HEPA filters in patient rooms
- Patient ceiling lifts
- Noise reduction features
Additional Features of Fable

- Larger bathrooms with double doors
- Art, music, gardens
- Private consultation spaces
- Patient education center
- Staff support facilities
- Energy and water conservation
Fable 2.0’s Operating Impact

- Helped reduce undesirable **patient** outcomes: infections, falls, transfers, errors, anxiety, stress.
- Helped reduce undesirable **staff** outcomes; turnover, injuries, and stress.
Trends Strengthening the Business Case

- Increasing costs of avoidable conditions, e.g. infections, falls, and workforce injuries
- Paying for value instead of volume, e.g. “pay for performance” or “value-based purchasing”
- Ending payment for certain harms and infections
- Increasing consumer choice and awareness: mandatory patient satisfaction scores, e.g. Medicare HCAHPS
- Increasing litigation risks and costs
- Increasing functional capacity and efficiency of facilities
Average cost of one transfer is $300

Fable’s acuity adaptable rooms helped reduce transfers by 90% in ICU/step down units

Actual Pebble Project data from Clarian found a 90% decrease

Calculation steps:
25% of 19,466 patient stays in ICU/step down unit
4,875 stay @ one transfer/stay x $ 300 = $ 1,462,500
Total annual cost of transfers = $ 1,462,500

Design features help reduce transfers by 60% = $877,500 Annual Savings
Fable 2.0 Example: Patient Falls

Non litigated average cost is $17,500

National median: 3/1,000 patient days

Fable’s unit & room design helped reduce falls by 90%

Calculation steps:
300 beds at 80% occupancy = 240 beds
240 beds per day X 365 days = 87,600 patient days
87,600 days x 3 falls per 1,000 patient days = 263 falls/year
263 falls x $17,500 per fall = $4,602,500

Design features helped reduce falls by 1/3

$1,534,166 annual savings
Fable 2.0’s Total Operating Savings

Evidence-based design innovations helped reduce patient falls, patient transfers, adverse drug events, infections, length of stay, nursing turnover, nursing lift injuries, ICU costs, energy demand, and water demand.

Annual Cost Savings: $10,032,162
Fable’s Compelling Business Case

One time incremental *construction cost* of $29 million recovered through lower *operating costs* within 3 years.

Business case becomes even stronger if the incremental *revenue impacts* on philanthropy and patient volume are added.
Design Recommendations

Construction/Renovation

1. Build larger single patient rooms for families to stay
2. Reduce patient transfers through acuity adaptable ICU rooms
3. Build accessible indoor or outdoor gardens
4. Design age-appropriate play areas and amenities
5. Increase visual access and accessibility to patients (decentralized nursing stations)
Design Recommendations
Construction/Renovation (Cont.)

6. Optimize natural light in staff and patient areas
7. Install HEPA filters in areas housing immuno-suppressed patients
8. Install effective way finding systems
9. Install ceiling lifts
10. Implement energy and water demand reduction measures
Priority Design Recommendations

Anytime

1. Install hand washing dispensers at each bedside and in all patient areas
2. Conduct a noise audit and develop a noise reduction plan
3. Install high performance sound absorbing ceiling tiles
4. In priority areas, install patient ceiling lifts
5. Utilize music as a positive distraction during procedures
Priority Design Recommendations
Anytime (Cont.)

6. Use virtual reality images and artwork to provide positive distractions

7. Incorporate social networking spaces or age appropriate play areas

8. Improve way finding through enhanced signage

9. Where structurally feasible, install HEPA filters in areas housing immuno-suppressed patients

10. Maximize patient control over their environment
The new economic reality requires us to explore new areas to improve.

Environmental designs that help reduce harm and operating costs should be key elements in a hospital’s improvement and survival strategy.
Objective 3

• Incorporate Lessons from Fable in Your Everyday Work
The Challenge

How to turn “light green dollars”

(theoretical savings)

to

“dark green dollars”

(actual savings that show up in the budget that the CFO will support)
Become Bilingual

Learn how to turn CEOs, CFOs, and boards into champions for your cause by:

1) Identifying light green dollar savings from environmental innovations, and

2) Converting them into dark green examples that appear in approved budgets
Sacred Heart Medical Center
Eugene, Oregon

• patient lifts
## Research

### Patient Lifts: Peace Health

<table>
<thead>
<tr>
<th>Unit</th>
<th>Direct Cost ($)</th>
<th># Injuries</th>
<th>Avg direct cost per injury ($)</th>
<th>Avg indirect cost (2x) ($)</th>
<th>Total Cost one injury ($)</th>
<th>Avg # injuries per year</th>
<th>Total Annual Cost ($)</th>
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</thead>
<tbody>
<tr>
<td>Neuro</td>
<td>222,646</td>
<td>15 (3 yrs)</td>
<td>14,843</td>
<td>29,686</td>
<td>44,529</td>
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<td>222,645</td>
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<tr>
<td>ICU</td>
<td>95,003</td>
<td>10 (2 yrs)</td>
<td>9,500</td>
<td>19,000</td>
<td>28,500</td>
<td>5</td>
<td>142,500</td>
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</table>

*Direct costs of just patient handling injuries

**Indirect costs include light duty salaries, replacement salaries, and training costs

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<th># Injuries</th>
<th>Avg direct cost per injury ($)</th>
<th>Avg indirect cost (2x) ($)</th>
<th>Total Cost one injury ($)</th>
<th>Avg # injuries per year</th>
<th>Total Annual Cost ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuro</td>
<td>43,728</td>
<td>6 (2 yrs)</td>
<td>7288</td>
<td>14,576</td>
<td>21,864</td>
<td>3</td>
<td>54,660</td>
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<tr>
<td>ICU</td>
<td></td>
<td>1 (3 yrs)</td>
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<td>0</td>
<td>0</td>
<td>.3</td>
<td>0</td>
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<td>subtotal</td>
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<td>6,247</td>
<td>12,494</td>
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83% reduction in total annual costs
A Proposed ROI Framework
(using ceiling lifts)

1. Identify the number of staff lift injuries

2. Identify your improvement target goal (aim) and dollars that could be saved

3. Outline specific clinical and administrative strategies as well as evidence-based design strategies to reach your target goal and identify associated costs

4. Calculate your ROI by subtracting improvement costs from savings achieved
## Step 1
**Quantify the Problem**

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Number of Injuries</th>
<th>Average Cost/Injury</th>
<th>Total Cost</th>
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</thead>
<tbody>
<tr>
<td>Staff Lift Injuries</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outcome Target</td>
<td>Calculations</td>
<td>Cost Avoidance</td>
<td></td>
</tr>
<tr>
<td>-----------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>------------------</td>
<td></td>
</tr>
<tr>
<td>Decrease Injuries by __% or __ cases</td>
<td>Identify the total number of injuries to be eliminated and multiply by the average cost/injury</td>
<td>Expressed in dollars</td>
<td></td>
</tr>
<tr>
<td>Total Injuries Avoided</td>
<td></td>
<td>Expressed in dollars</td>
<td></td>
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## Step 3
Calculate Intervention Costs

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Initial cost</th>
<th>Life cycle cost</th>
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<tbody>
<tr>
<td>Install patient ceiling lifts in rooms and bathrooms</td>
<td># of rooms x cost/room</td>
<td>Equipment maintenance</td>
</tr>
<tr>
<td>Administrative &amp; training interventions</td>
<td>Initial training costs</td>
<td>Ongoing training costs</td>
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<tr>
<td>Total Intervention Costs</td>
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<td></td>
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</table>
Step 4
Calculate the ROI

<table>
<thead>
<tr>
<th>Variables</th>
<th>Initial, First Year</th>
<th>Two Year Life Cycle Point</th>
<th>Five Year Life Point</th>
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</thead>
<tbody>
<tr>
<td>Total cost avoidance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total intervention costs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Savings</td>
<td></td>
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</table>
Conclusion: Ask Question #6

1. Urgency/Need
2. Appropriateness of solution
3. Relative cost per square foot
4. Overall financial impact
5. Sources of funds

6. Incorporate the lessons of Fable to reduce harm and operating costs while improving quality and consumer/employee preference in the marketplace. Use the ROI framework.
I Have a Dream: What’s Yours?

- All health care environments should be healing environments
- They should feel more like home
- They should help make getting better easier, not harder.
- They should help restore joy in work.
- They should help people get what they really, really want – to have more choice and control, and less anxiety and confusion.
- Whether a patient is in our care for an hour, a day, a week, or a year, they deserve an optimal healing environment
Questions Please!

bsadler@ucsd.edu
Selected Print References


Selected Print References


Selected Online References


- Sadler & Sadler (2010), Improving Health Care Through The Arts: Guidelines for Leaders, IHI, [www.ihi.org](http://www.ihi.org)