

The Task of Leadership for Design Innovation

Fable Hospital 2.0

Design and Health

7th World Congress

Boston, Mass.

July 9, 2011

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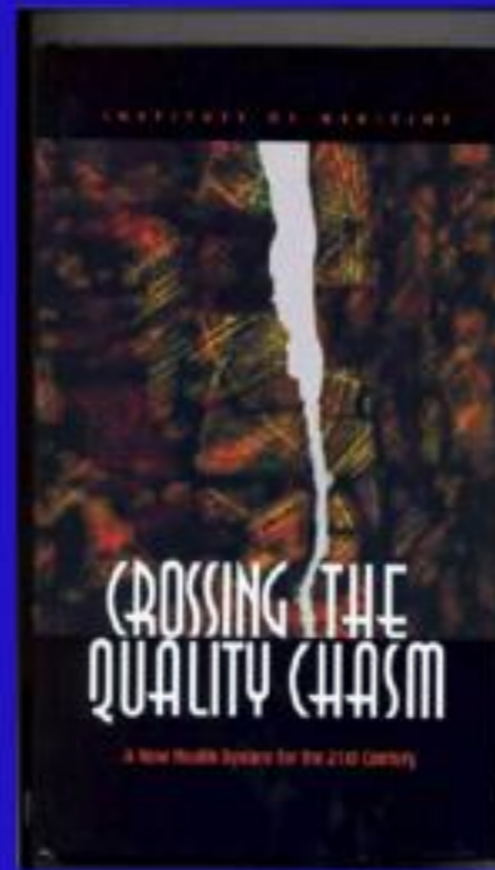
The New Reality

- ❑ The current healthcare system is not economically sustainable
- ❑ Progressive hospitals can achieve measurable improvements and operating savings through evidence based design
- ❑ This reality requires a fundamental shift in design leadership and innovation
- ❑ Fable hospital 2.0 provides a framework to calculate the economic benefits of this shift



4 Concurrent Revolutions

- ❑ Quality
- ❑ Safety
- ❑ Efficiency
- ❑ Cost



Lynda Stanley

Quality Chasm Series Institute of Medicine

To Err is Human: Building a Safer Health System

⌘Addresses patient safety

Crossing the Quality Chasm: A New Health System for the 21st Century

⌘Information Systems

Keeping Patients Safe: Transforming the Work Environment of Nurses

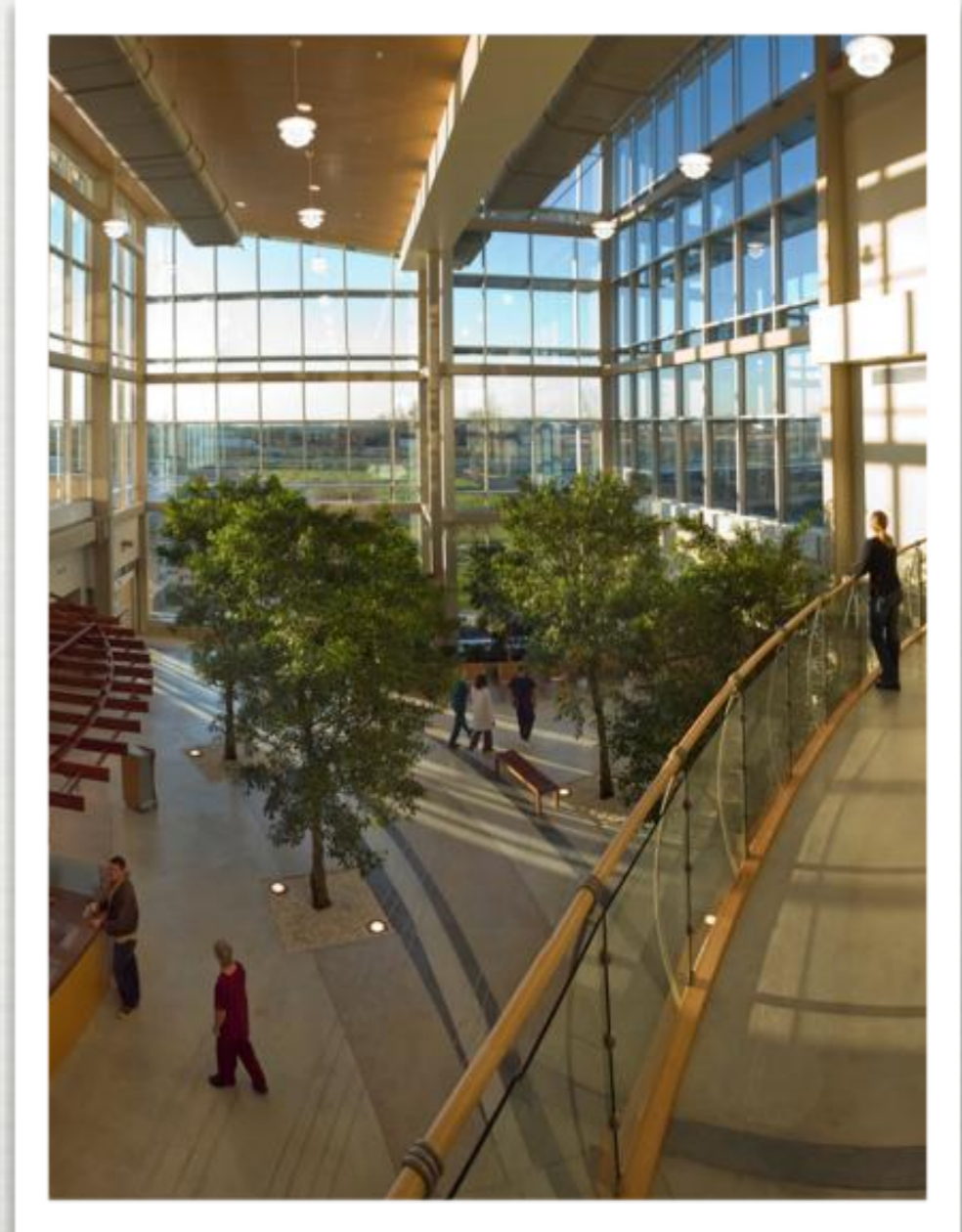
⌘Safety defenses include design of workspace to reduce errors



THE QUESTION: CAN DESIGN MAKE A DIFFERENCE?

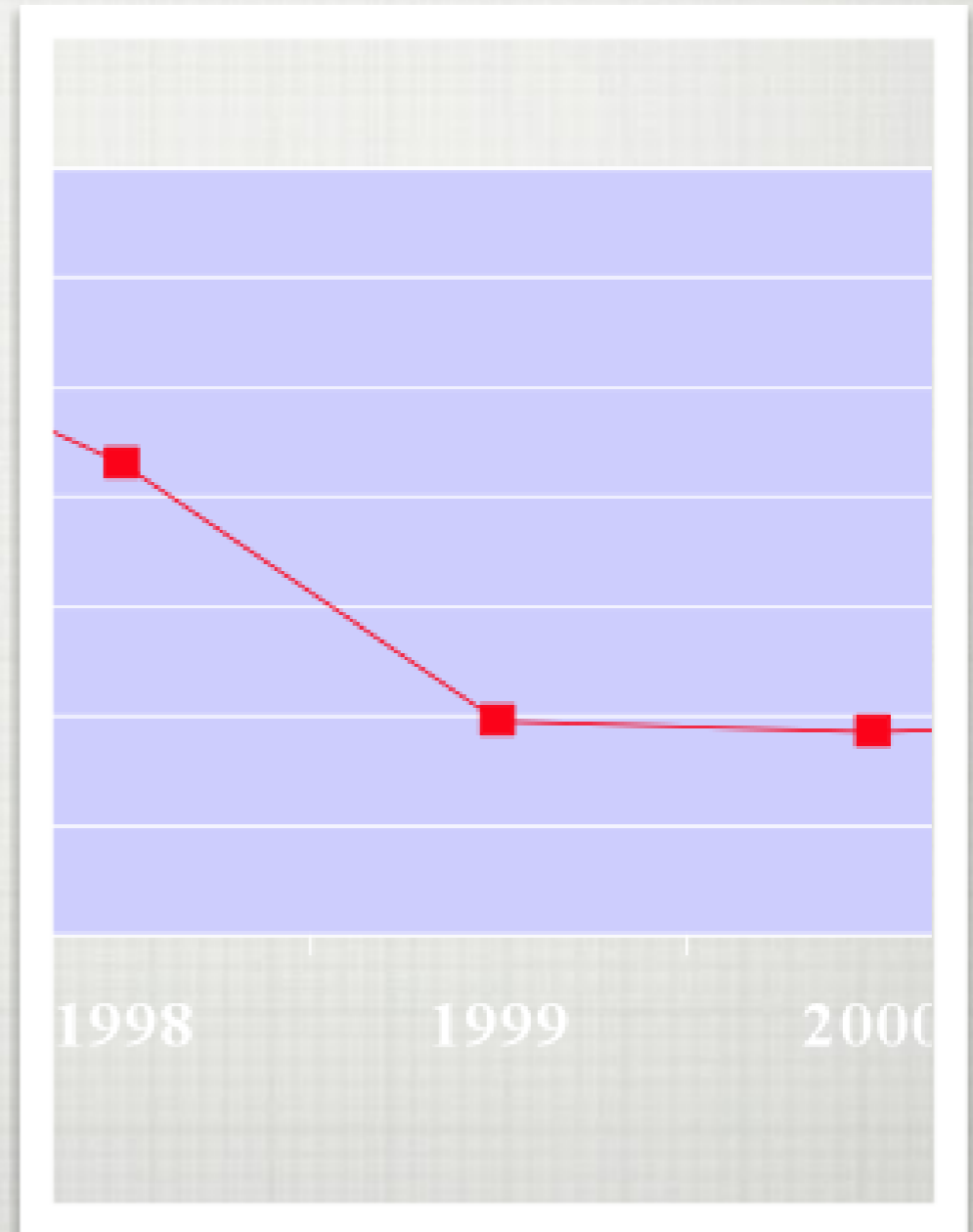
The Evidence Is In and Growing

- ❑ **More than 1500 published research articles show correlations between the design of the built environment and improved outcomes for patients, families, and staff.**



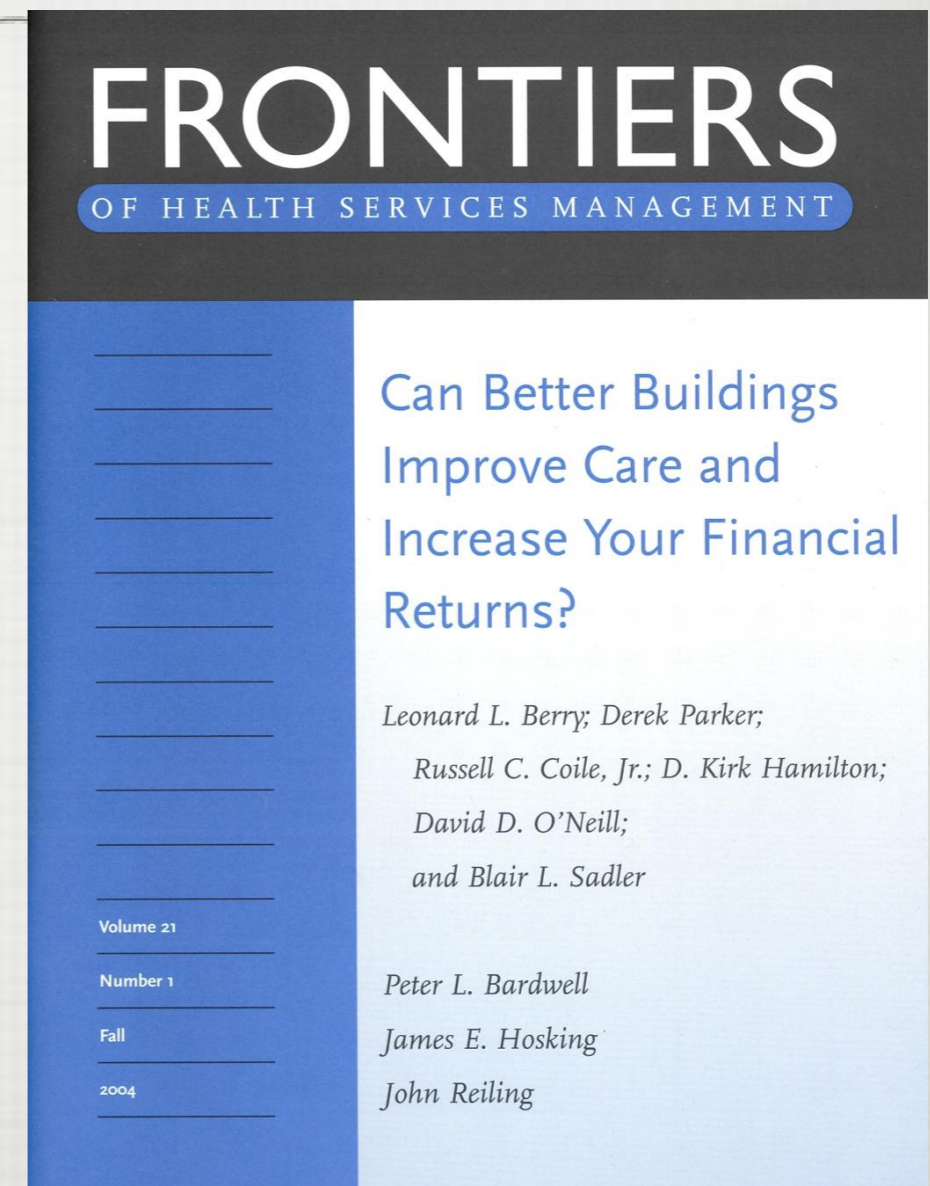
Understanding the Business Case

- **The core of the business case is the balance between one time capital cost and multi-year operating costs**



How Much Does Building and Operating an Optimally Designed Hospital Cost?

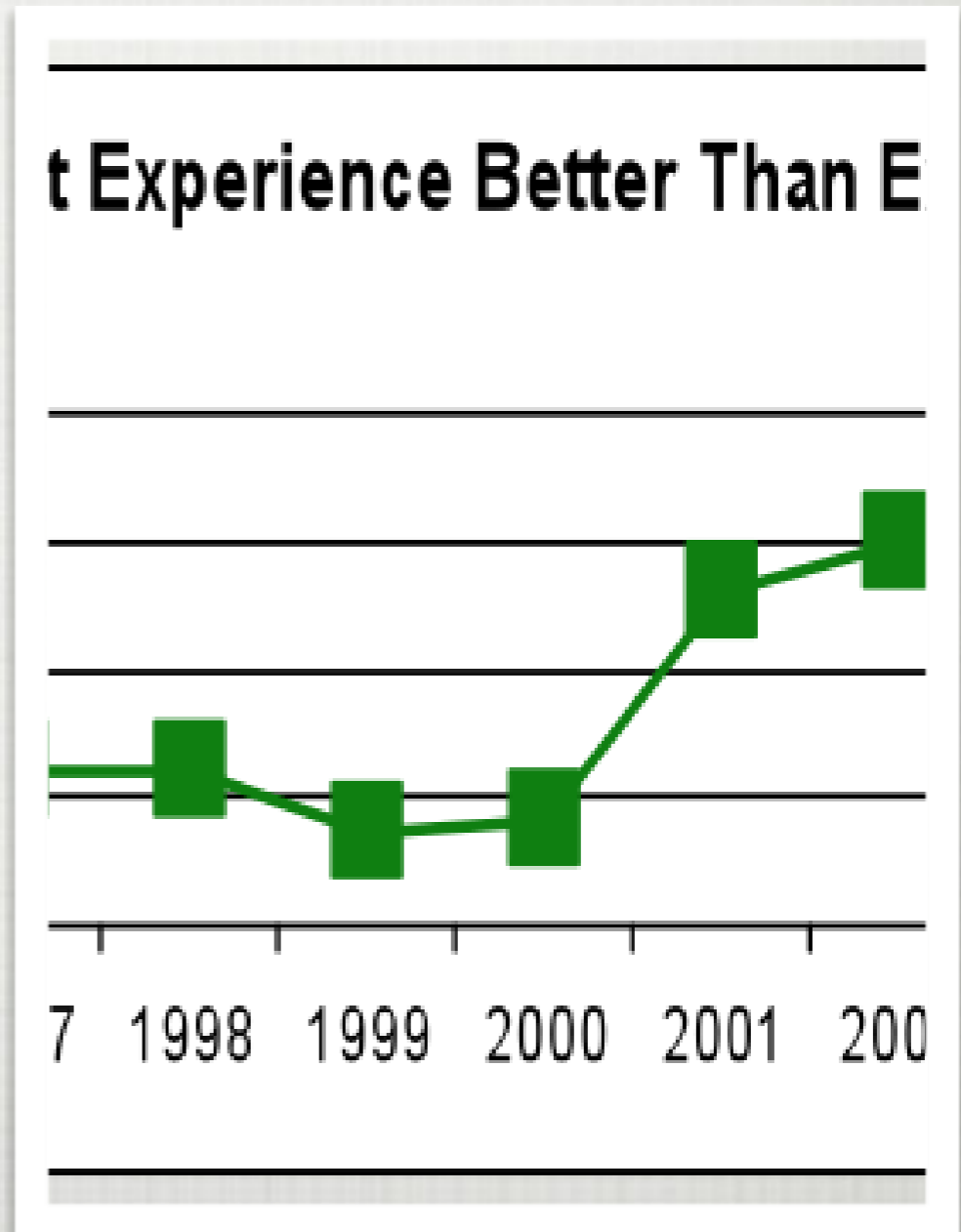
- ❑ To answer this, we created the *Fable Hospital*
- ❑ Never been built before, but Fable's components are based on actual experience in real hospitals
- ❑ Incremental cost of key design innovations and annual operating cost impacts were analyzed



FALL 2004

Fable's Positive Operating Impact

- ❑ Design features help reduce undesirable patient outcomes: infections, falls, transfers, errors, anxiety and stress
- ❑ Design features help reduce undesirable staff outcomes: stress, injuries, and turnover



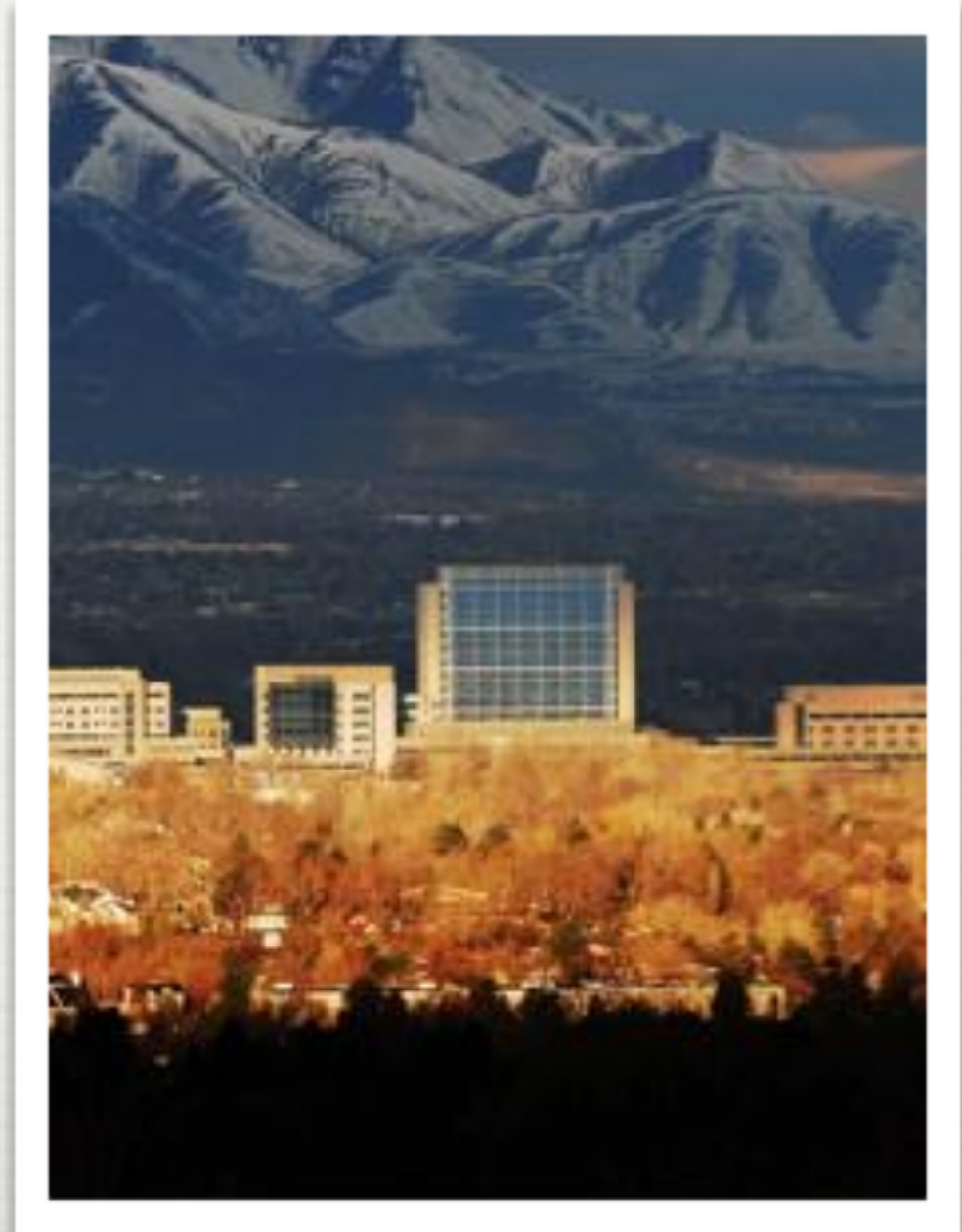
Fable's Values and Culture

- Obsessed with quality and safety
- Patient, family and staff friendly
- Eco sensitive
- Willing to benchmark
- Wanting to be held accountable
- Sensitive to 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

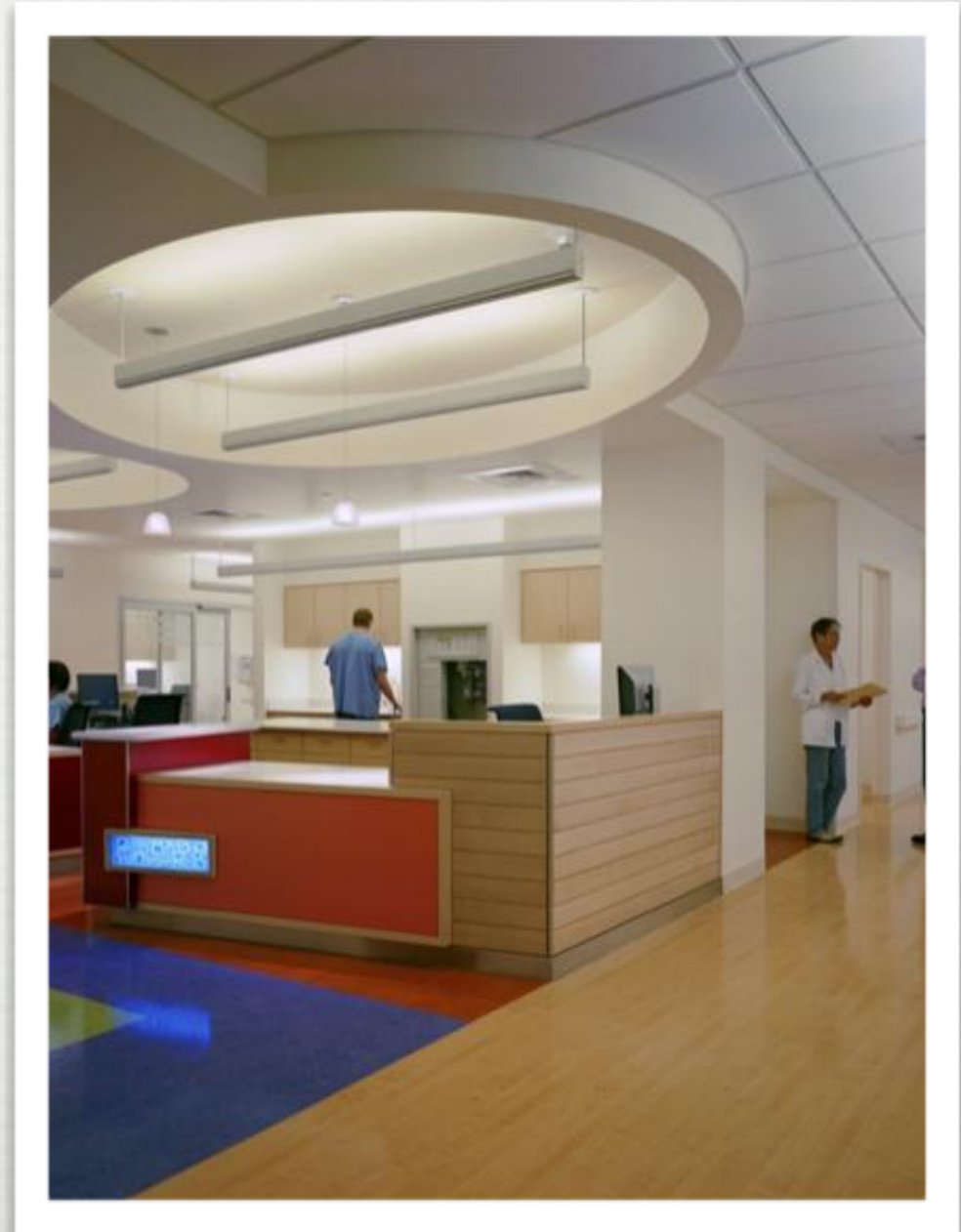
- Larger, windowed, single patient rooms**
- Variable acuity patient rooms**
- Decentralized, barrier free nursing stations**
- HEPA filters in patient rooms**
- Patient ceiling lifts**
- Noise reduction features**

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

Fable 2.0 Example: Patient Transfers

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



**Sacred Heart Medical Center
Eugene, Oregon**

patient lifts

Research

Patient Lifts: Peace Health

Unit	Direct Cost *	# Injuries	Avg direct cost per injury [†]	Avg indirect cost (2x)	Total Cost one injury	Avg # injuries per year	Total Annual Cost
Neuro	\$222,646.	15 (3 yrs)	\$14,843.	\$29,686	\$44,529	5	\$222,645
ICU	\$ 95,003	10 (2 yrs)	\$9,500.	\$19,000	\$28,500	5	\$142,500
subtotal							\$365,145

*Direct costs of just patient handling injuries

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

Unit	Direct Cost	# Injuries	Avg direct cost per injury [†]	Avg indirect cost (2x) ^{**}	Total Cost one injury	Avg # injuries per year	Total Annual Cost
Neuro	\$ 43,728	6 (2 yrs)	\$ 7288	\$ 14,576	\$ 21,864	3	\$ 54,660
ICU	\$	1 (3 yrs)	\$ 0.	\$ 0	\$ 0	.3	\$ 0
subtotal	\$ 43,728	7	\$ 6,247	\$ 12,494	\$ 18,741	2.8	\$ 61,845

83% reduction in total annual costs



Outcomes

Length of stay decreased from 4.18 to 3.82 days

Cost per adjusted discharge has been reduced by 5.4% per admission

Patient satisfaction rose to 86%

Operating room turnover times less than 20 minutes rose from 23% to 36%

What Does the New Design Leadership Look Like?

Blair as Hospital CEO

Derek as Architect

Conclusion

- **The new economic reality requires a fundamental shift in design leadership**
- **Building designs that help reduce harm and reduce operating costs are key elements in a hospital's survival strategy**



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