Making the Business Case for Quality

Rural Critical Access Hospital and Clinic Conference

November 10, 2022

Kearney, Nebraska

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Founder & CEO, Excelsior HealthCare Group

Clinical Associate Professor, Tulane University

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Source: Kohn LT, Corrigan JM, & MS Donaldson. (2000). To Err is Human: Building a Safer Health System. Institute of Medicine. (US) Committee on Quality of Health Care in America. Washington (DC): National Academies Press (US).

2


A jumbo jet would crash every single day if the airline industry had the same safety record as U.S. health care.
Source: Leape LL. (1994). Error in medicine. JAMA. 1994;272(23): 1851-1857.

3


Health systems face 'perfect storm' of financial challenges.
ACCOUNT
$36,027
Source: Kacik A. (2022, Jul. 19). Health systems face 'perfect storm' of financial challenges. Modern Healthcare.

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"No margin, no mission."
- Sister Irene Kraus

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Richard (Rich) Priore, ScD, MHA, FACHE
Founder and CEO, Excelsior HealthCare Group
30 years in for-profit investor-owned, private not-for-profit, public/federal healthcare sectors
Senior leadership roles include hospital CEO, regional service line VP, SVP/chief business development officer, and managing director/consultant for hospital turnaround firm
Founder/CEO international management consultancy
20 years in higher education as graduate professor in management, finance, and economics
Faculty:
Tulane University
University of Warwick (UK)
American College of Healthcare Executives
American Association for Physician Leadership

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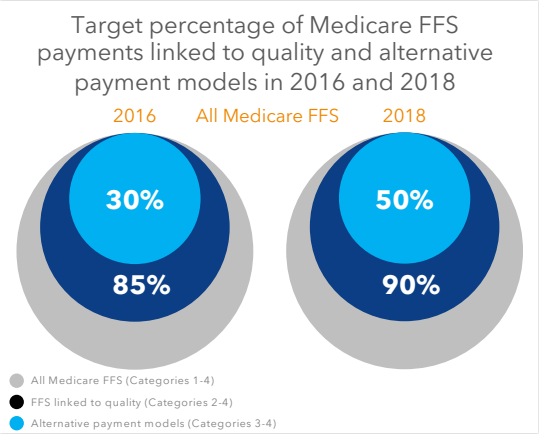
Transformation from volume to value

- CMS moving from fee-for-service volume-based reimbursement (fee for service) to value-based, linking quality and payment
- By 2018, CMS goals were:
  - 90% reimbursement tied to quality
  - 50% tied to alternative payment models (ACO, bundled payments)



Source: CMS (Jan. 26, 2015)

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Solving the value equation

$$\textbf{Value} = \frac{\textbf{Quality}\ (\textit{Outcomes, Safety, Service})}{\textbf{Cost}}$$

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More with less…

"That's our new mission statement."

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Purpose and premises

To improve stakeholder *value* by understanding how to effectively *interpret* and *integrate clinical* and *financial* information in an effective *business case*.

1. Healthcare organizations are under increasing pressure to simultaneously *improve quality* and *cut costs*
2. Leaders struggle with *aligning their mission* with the *business case* for it
3. Surviving in a *value-based care* environment requires making a *sound business case*

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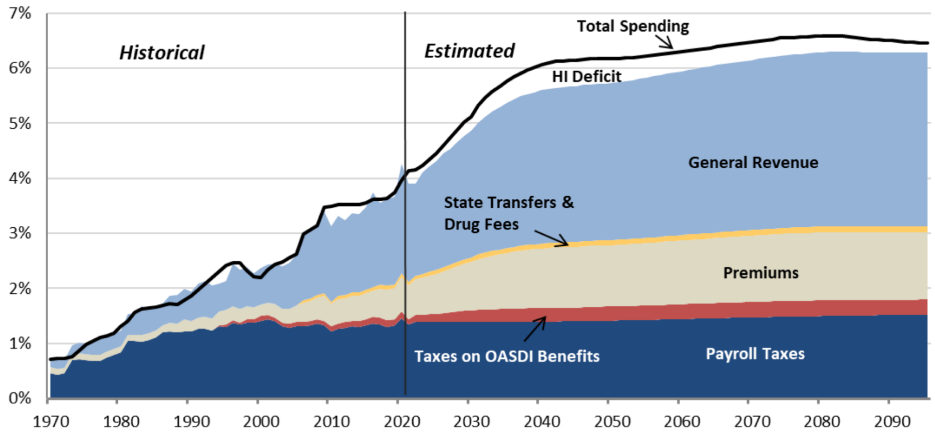
Unsustainable for government (taxpayers)

Medicare Cost and Non-interest Income, by Source as a Percentage of GDP



10,000+ Americans turning 65 every day

Source: Summary of the 2021 Annual Reports of the Social Security and Medicare Boards of Trustees, Chart D, at http://www.ssa.gov/oact/TRSUM/index.html., Centers for Medicare & Medicaid Services (2020), Health and Human Services (2022)

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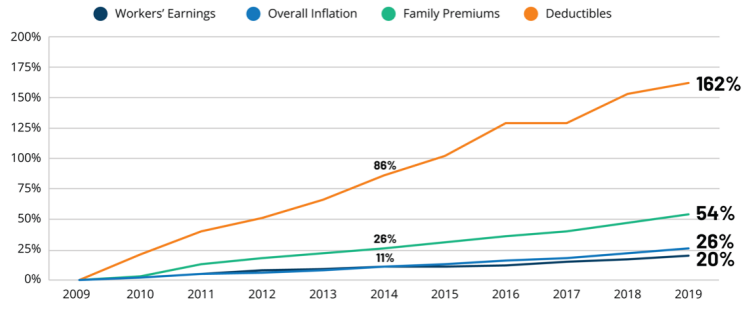
Unsustainable for employers

Annual family premiums for employer health insurance rose 5% to average $20,576 this year



TALENT

Ford Health-Care Costs Said to Top $1 Billion

Sources: 2019 Employer Health Benefits Survey. Available: https://www.kff.org. Bloomberg. Industry Week. (2019, Mar. 12). Available: https://www.industryweek.com/talent/ford-health-care-costs-said-top-1-billion.

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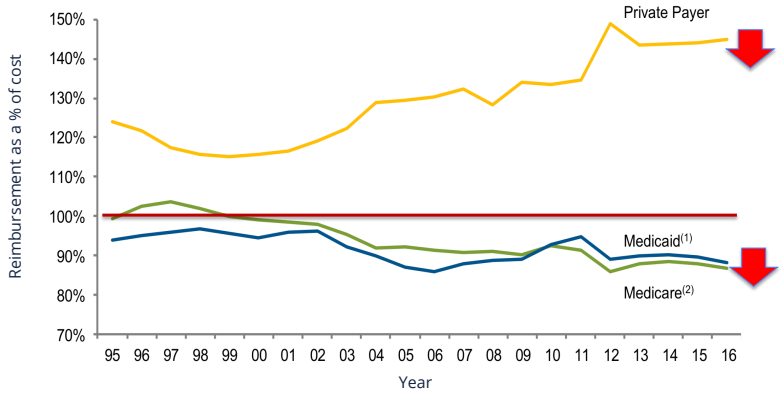
Unsustainable for providers

Private commercial payers are pushing back on provider cost-shifting to subsidize waste and inadequate government payment



Source: American Hospital Association (2018)

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Learning objectives

- Monetize the cost of waste associated with a quality improvement opportunity
- Translate quality improvement into measurable financial impact
- Apply a five-step process for making an effective business case to justify increasingly scarce resources
- Explore how to overcome common barriers to create key stakeholder buy-in

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The business case…

- Often ***ignored*** or poorly developed
- Evaluate ***financial feasibility*** of a project
- Explore ***cost-benefit*** of various scenarios
- Present ***'what if'*** impact (best, worst case)
- Quantify ***added value*** (*monetize quality*)

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Challenges making the business case

- Multiple, competing, and shifting ***priorities***
- ***Culture*** of policies, politics, and personality
- ***Data*** limitations
- Unclear, intangible ***financial benefit***
- Translating ***quality*** into *measurable* and sustainable ***ROI***

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Best in class business case

- Comprehensive
- Simple
- Conservative
- Actionable

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An effective business case

"You can get much farther with a kind word and a gun than you can with a kind word alone.

Al Capone

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Business case examples

Intervention Objective	Intervention	Financial Impact
❖ Improve *process efficiency* (reduce unnecessary steps and time)	Eliminate/reduce staffing (FTE)	Reduced labor expense
❖ Reduce *unnecessary utilization* (tests, procedures, supplies)	Implement EBM pathway, formulary	Reduced expense per unit of service
❖ Improve *bed utilization* and *care level*	Implement patient acuity-bed match	Reduced expense per discharge
❖ Reduce patient *no-show* clinic visits	Implement patient call reminders	Improved labor productivity
❖ Improve *patient experience*	Improve access, service	Increased revenue
❖ Reduce *ED left w/o being seen* (LWBS)	Improve throughput	Increased revenue
❖ Reduce *staff turnover*	Increase engagement	Reduced expense
❖ Create *new/expand service* or program	Launch business plan	Increased revenue

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Step 1. Identify the opportunity

- ❖ Define the problem
- ❖ Develop the goal
- ❖ Identify key stakeholders

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Define the problem

1. Develop a ***call-to-action*** why the problem needs to be addressed ('so what' test).
2. Define the ***current or potential impact*** of the problem
3. On ***whom***

"So things are good, stuff is OK, and I reiterate my request for more specific data."

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Develop the goal

- Current baseline and planned goal
- *SMART*: Specific, Measurable, Achievable, Relevant, Time-oriented
- *BLUF*: Implementing **X** (*process*) will have **Y** impact (*leading and lagging indicators*) in **Z** (*period*).

- Example:

Streamlining workflow processes in the ICU is projected to improve throughput to reduce the average time to admit a patient from ***3 to 2.7 hours*** (10%), improving patient experience[1] scores from ***66% to 71%*** (5%), and reduce waste and unnecessary expense[2] by ***$750*** (3%) per patient, within 6 months from the project kick-off.

1. HCAHPS Overall Rating of Hospital
2. Total direct variable cost based on $3,500 per ICU bed day

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Develop the goal

Leading indicators

- Improving quality of care/clinical outcomes
- Improving patient safety
- Improving access to care
- Enhancing the patient experience

Lagging indicators

- Improving efficiency and reducing waste
- Reducing unnecessary cost
- Increasing revenue

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Identify key stakeholders

- Responsible for ***final decision***
- Likely to be ***affected*** by the intended ***outcome***
- Can ***assist or block***
- ***Experts***, special resources
- ***Influence*** other stakeholders
- ***Customers*** and ***suppliers***

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Calculating cost savings by reducing surgical site infections (SSIs)

Sample Calculation	
Current SSI rate	1.0%
Annual surgeries	10,000
Cost per SSI	$20,750
Total Cost of Waste	

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Calculating cost savings by reducing average length of stay (example)

Sample Calculation (Part 1)	
MS-DRG 470 (Total Joint Repl)	
Annual discharges	1,500
Average LOS	
Total patient days*	6,000

Sample Calculation (Part 2)	
Cost per patient day	$1,500
Total cost of care	$9 M

Sample Calculation (Part 3)	
GMLOS (target)	3.5 days
Variance to LOS	0.5 days
Fewer patient days	
Cost of Waste	

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Estimating cost of waste: Length of stay

The *'flaw of averages'*…the promise and pitfall of ALOS reduction savings

Sample Calculation	
Cost per patient day	$1,500
Cost of *last day*	$750
Actual cost savings	**$562,500**

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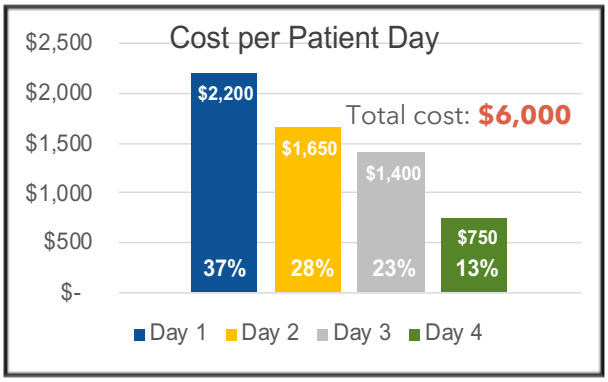
Estimating cost of waste: Length of stay

The *'flaw of averages'*…the promise and pitfall of ALOS reduction savings



- Last day costs relatively ***insignificant***
- Staffing ***reduction required*** for savings (e.g., close unit, flex, staffing grid)
- Financial impact:
  - ***Process*** and ***mode***
  - Unmet demand or ***lost volume***

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Calculating additional revenue from increasing throughput (ED example)

Sample Calculation (Part 1)	
Annual ED visits	50,000
ED admission rate	15%
Annual LWOBS rate	4.0%
Lost visits	
Lost admissions	

Sample Calculation (Part 2)	
Revenue per ED visit	$500
Revenue per admit[1,2]	$2,500

Sample Calculation (Part 3)	
Annual lost visit revenue	
Annual lost admit revenue	
Total lost revenue	

1. Inpatient and Observation admissions
2. No separate outpatient revenue if patient admitted

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Step 4. Project financial impact

- Anticipated financial impact from implementing the ***proposed solution***
- Involve ***key stakeholders***
- ***Incremental*** cost

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Monetizing quality: Types of financial impact

Type	Financial Impact		Description
1	*Direct*	Cost savings	Measurable *financial impact* **Example:** reduced supply cost or utilization
2	Indirect		Throughput *time saved*, but no financial impact without making *staffing changes* **Example:** staffing mix or reduction in hours
3		Revenue growth	Throughput *time saved*, but no financial impact without creating capacity to grow additional *profitable volume* **Example:** + appointments, beds, OR

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Monetizing quality: Type 1

Type	Financial Impact		Description
1	***Direct***	**Cost savings**	**Measurable *financial impact***
Scenario: Seeking to *improve clinical outcomes* and *reduce cost* in its total joint replacement program, service line leaders implemented a hip implant *demand matching* program to better align the prosthetic with patient-specific needs.			
Monetizing Quality: 15% (60) of 400 annual total hips using *"high demand"* implants could use *"low demand"* without affecting outcomes			High demand hip: $12,500 Low demand hip: $7,500 Cost savings: $5,000
Total Projected Cost Savings: 60 hips x $5,000 implant cost = **$300,000**			

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Monetizing quality: Type 2

Type	Financial Impact		Description
2	***Indirect***	**Cost savings**	**Throughput *time saved*, but no financial impact without making *staffing changes***
Scenario: Considering *top-of-license staffing* opportunities, the Radiology Director evaluated *using transporters* during peak hours, *instead of radiology technologists* to move or escort patients to and from the ED to various imaging services.			
Monetizing Quality: 2,000 transporter hours required to reduce 500 hours of rad tech's time spent moving patients per year			Rad tech hourly rate: $45.00 Transporter hourly rate: $12.00 Hourly cost savings: $33.00
Total Projected Cost Savings: $24,000 (transp) – $22,500 (tech) = **$1,500**			

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Monetizing quality: Type 3

Type	Financial Impact		Description
3	*Indirect*	Revenue growth	**Throughput *time saved*, but no financial impact without *creating capacity***

Scenario: Leveraging the 500 hours of the *rad tech time saved*, the Radiology Director implemented *'live' scripted patient call reminders* to reduce the *no-show rate* for outpatient imaging

Monetizing Quality: The initiative cut the 20% annual no-show rate in half in the first 6 months	Total annual scans: 30,000 Average net revenue/scan: $500 Increased annual scan volume: 3,000

Total Projected Cost Savings: $500 x 3,000 = **$1,500,000**

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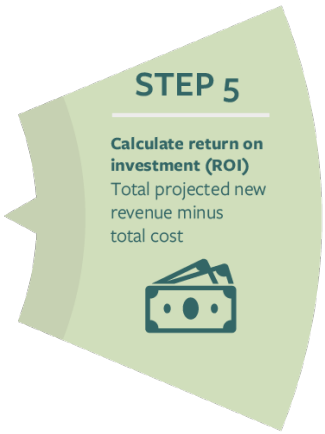
Step 5. Calculate return on investment (ROI)



ROI = Anticipated financial impact – cost of the proposed solution / Cost of proposed solution

- **Include:**
  - NPV
  - IRR
  - Payback period
  - Sensitivity analysis
  - Breakeven analysis

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Making the business case for quality

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Cross-contaminated specimens in the ED

- Blood culture contamination causes unnecessary ***patient morbidity*** *and* ***cost***
- Lab specimens for blood cultures are ***typically drawn by nurses***
- When the ***ED is busy*** and nurses are tied up triaging and treating patients, ***phlebotomists*** from the lab ***draw blood*** for diagnostic testing
- Cross-contamination rates from ***nurse draws*** are nearly ***3 ½ times higher*** than for phlebotomists

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Cross-contaminated specimens in the ED

1. Clearly define the problem and goal and identify key stakeholders
2. Estimate the total annual cost of waste from contaminated specimens in the ED.
3. Propose a viable solution and the total implementation cost to achieve the goal
4. Project the anticipated financial impact from implementing your proposed solution (decreased expense, increased in revenue
5. Calculating the return on investment; total project financial impact (4) identified minus the total cost of your proposal (3)

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Step 1. Identify the opportunity

- **Problem Statement:** Cross-contamination causes increased morbidity and cost. Rate for nurses is higher (7.05%) than phlebotomists (2.14%).
- **SMART Goal:** Hire 4.2 FTE phlebotomists and train all nurses to reduce overall cross-contamination rate in the ED from 5.7% (375 specimens) to 2.% (143) in 6 months
- **Key Stakeholders:** ED nurses, phlebotomists, physicians, infection control and prevention team, ED Director, Finance Director

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Step 2. Estimate the cost of waste

Month	ED RN staff lab draws		Phlebotomist Lab Draws	
	Specimens drawn	Number contaminated	Specimens drawn	Number contaminated
July	523	27	193	3
August	367	20	139	3
September	386	27	160	4
October	403	31	154	3
November	340	30	158	3
December	387	29	152	4
January	408	33	170	3
February	350	34	138	4
Total	3,164	231	1,264	27
Annualized	**4,746**	**347**	**1,896**	**41**

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Step 2. Estimate the cost of waste

Contamination Cost of Waste	ED RN	Phlebotomist
Contamination rate	7.30%	2.14%
Total contamination rate	5.83%	
Cost per contamination	$5,170	
Cost	$1,791,405	$209,385
Total Cost of Waste (annual)	**$2,000,790**	

Total Cost of Waste: $2,000,790

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Step 3. Determine cost of viable solution(s)

- Reasonable ***cost assumptions***
- ***Incremental*** (new) costs
- ***Opportunity costs***

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Step 3. Determine cost of viable solution(s)

Incremental Operating Expense			
Phlebotomist			
FTE	**Shifts covered**	**Days covered**	**Total expense**
1	1	5	$ 50,050
2	2	5	$100,100
3	3	5	$150,150
4.2	3	7	**$210,210**

Incremental Operating Expense		
Education		
Total ED nurses	Percent trained	Total expense
60	25%	$10,000
	50%	$20,000
	75%	$30,000
	100%	**$40,000**

Total Cost of Solution: $250,210

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Step 4. Project financial impact

Percent change	Contaminated specimens	Contamination rate	Cost of contamination	Projected cost savings
0%	387	5.83%	$ 2,000,790	$ -
-5%	368	5.54%	$ 1,900,751	$ 100,040
-10%	348	5.24%	$ 1,800,711	$ 200,079
-13%	337	5.07%	$ 1,742,688	$ 258,102
-20%	310	4.66%	$ 1,600,632	$ 400,158
-30%	271	4.08%	$ 1,400,553	$ 600,237
-40%	232	3.50%	$ 1,200,474	$ 800,316
-50%	194	2.91%	$ 1,000,395	$ 1,000,395

Range of Financial Impact: $0 – $1M

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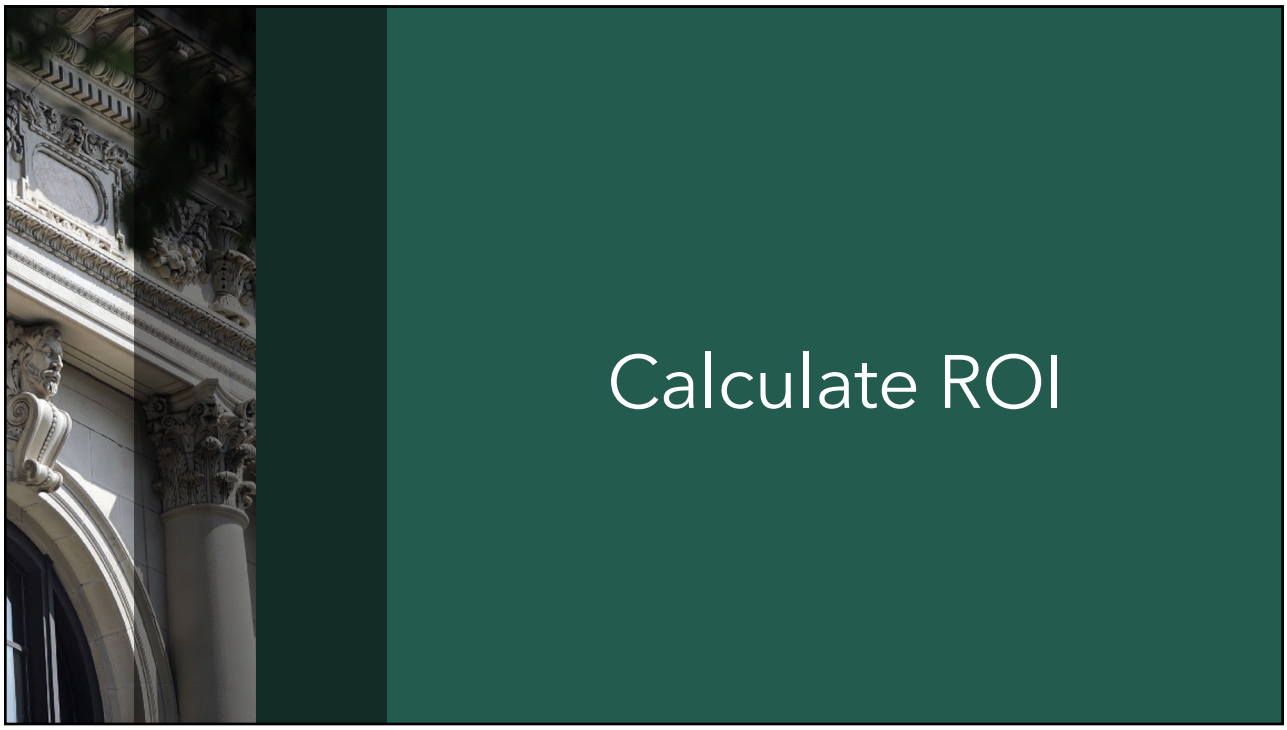

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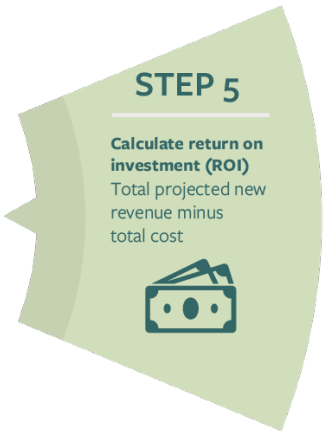
Step 5. Calculate return on investment (ROI)



Percent change	Contaminated specimens	Contamination rate	Cost of contamination	Projected cost savings	Return on investment	Return on investment %
0%	387	5.83%	$2,000,790	$ -		
-5%	368	5.54%	$1,900,751	$100,040	($150,171)	-60.0%
-10%	348	5.24%	$1,800,711	$200,079	($50,131)	-20.0%
-20%	310	4.66%	$1,600,632	$400,158	$149,948	59.9%
-30%	271	4.08%	$1,400,553	$600,237	$350,027	139.9%
-40%	232	3.50%	$1,200,474	$800,316	$550,106	219.9%
-50%	194	2.91%	$1,000,395	$1,000,395	$750,185	299.8%

Range of ROI: (-$150k - $750k)

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Step 5. Calculate return on investment (ROI)

	Percent change	Contaminated specimens	Contamination rate	Cost of contamination	Projected cost savings	Return on investment	Return on investment %
	0%	387	5.83%	$2,000,790	$ -		
Negative ROI	-5%	368	5.54%	$1,900,751	$100,040	($150,171)	-60.0%
Negative ROI	-10%	348	5.24%	$1,800,711	$200,079	($50,131)	-20.0%
Breakeven	**-13%**	**337**	**5.07%**	**$1,742,688**	**$258,102**	**$7,892**	**3.2%**
Positive ROI	-20%	310	4.66%	$1,600,632	$400,158	$149,948	59.9%
Positive ROI	-30%	271	4.08%	$1,400,553	$600,237	$350,027	139.9%
Positive ROI	-40%	232	3.50%	$1,200,474	$800,316	$550,106	219.9%
Positive ROI	-50%	194	2.91%	$1,000,395	$1,000,395	$750,185	299.8%
Benchmark	**-60%**	**147**	**2.21%**	**$760,300**	**$1,240,490**	**$999,280**	**395.8%**

Range of ROI: ($150k – $1M)

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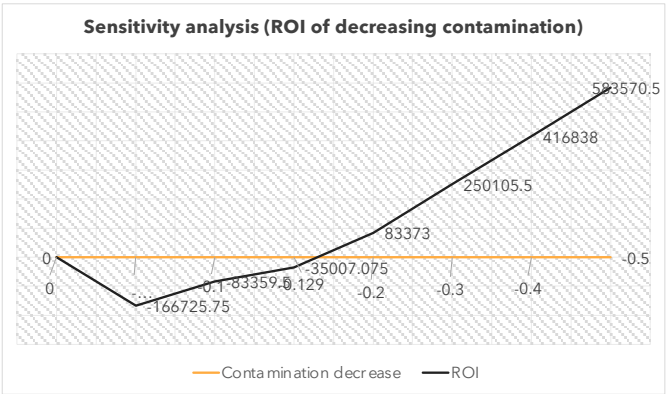
Step 5. Calculate return on investment (ROI)

Contamination decrease	Return on investment
0%	$0
-5%	($150,171)
-10%	($50,131)
-13%	**$7,892**
-20%	$149,948
-30%	$350,027
-40%	$550,106
-50%	$750,185
-60%	**$990,280**



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Common barriers

1. **Data**
2. Language barrier
3. Uncertain financial risk

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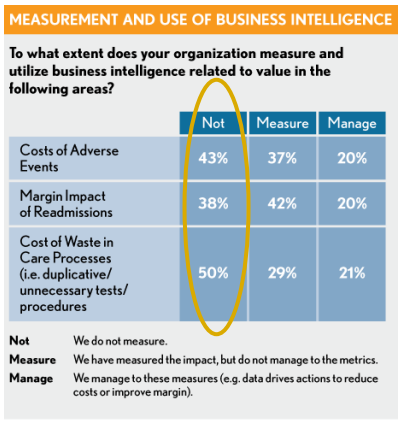
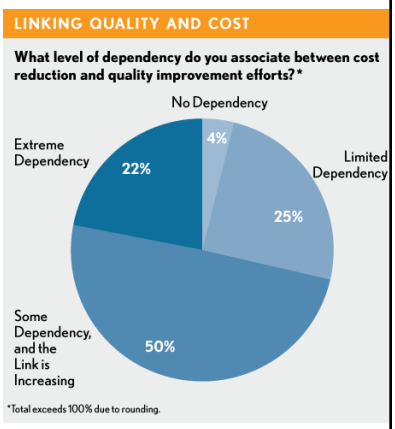
Data

1. D.R.I.P.
2. Means to an end
3. Good for great
4. Paralysis by analysis

Over 95% of Healthcare CFOs Doubt Their Data Analytics Abilities

Most healthcare CFOs are not confident that they can adequately address the data analytics needs of their organizations.





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Linking quality and finance

Traditional Quality Scorecard

Performance Improvement Measures	Baseline		Target Goal	
	Cases	Rate	Cases	Rate
C. diff Infection	84	6.00%	42	3.0%
MRSA	43	8.00%	27	5.0%
SSI	11	4.50%	5	2.0%
LWOBS	900	3.00%	750	2.5%
Re-admissions	78	3.60%	32	1.5%
Clinic no-shows	341	18.00%	208	11.0%

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Linking quality and finance

Integrated Quality Scorecard

Performance Improvement Measures	Baseline				Target Goal		
	Cases	Rate	Cost	Total	Cases	Rate	Savings
C. diff Infection	84	6.00%	$7,285	$546,375	42	3.0%	$305,970
MRSA	43	8.00%	$6,248	$268,664	27	5.0%	$437,360
SSI	11	4.50%	$23,272	$255,992	5	2.0%	$651,616
LWOBS	900	3.00%	$725	$652,500	750	2.5%	$25,375
Re-admissions	78	3.60%	$7,300	$569,400	32	1.5%	$153,300
Clinic no-shows	341	18.00%	$230	$78,430	208	11.0%	$35,420

Total cost of waste: **$2,371, 361** Total savings: **$1,609, 041**

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Data sources

Data Source	Strengths	Limitations
Published research	❖ Evidence-based ❖ Potentially unbiased	❖ Difficult to generalize ❖ Ambiguous costing methodology ❖ < 1% of clinical journals include financial data
White papers	❖ Current ❖ Solution-oriented	❖ Typically biased (especially if published by a vendor)
Publicly available (Medicare Cost Report)	❖ Audited (used to determine reimbursement ❖ Benchmarking	❖ Dated (6-12 months lag) ❖ Expensive (vendor)
Unit-level (chart audit, reports)	❖ Specific to organization ❖ Tied to clinical data	❖ Availability ❖ Accuracy

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Language barrier

> ***Damn it, Jim!***
> *I'm a Clinician, not a CFO!*
>
> Dr. Leonard McCoy

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Common barriers

1. Data
2. **Language barrier**
3. Uncertain financial risk

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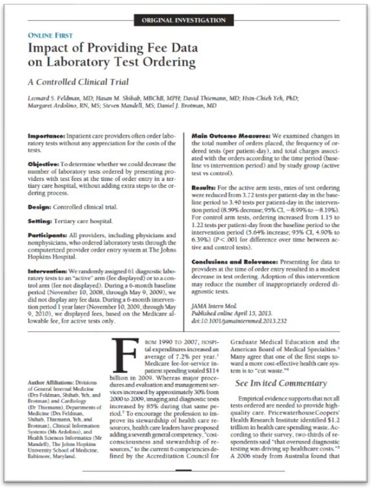
Integrating quality and financial data


ORIGINAL INVESTIGATION

ONLINE FIRST

Impact of Providing Fee Data on Laboratory Test Ordering

A Controlled Clinical Trial

- Randomized control trial
- Experimental group *given fees for 61 lab tests* upon order entry
- *Test utilization -9%* vs. *+6%* control group
- *$436,000* decreased expense
- No *quality* impact


JAMA Surgery | Original Investigation

Association Between Surgeon Scorecard Use and Operating Room Costs

- Gave surgeons *individualized OR cost feedback*
- Median surgical supply cost *-6.5%* vs. control group *+7.4%*
- *$1,307 to $1,398* savings per case
- Neutral or improved *outcomes*

Source: Feldman LS, Shihab HM, Thiemann D, Yeh HC, Ardolino M, Mandell S, & Brotman DJ. (2013). Impact of providing fee data on laboratory test ordering. *JAMA Intern*, 173(10): 903-8 and Zygourakis CC et al. (2017). Association between surgeon scorecard use and operating room costs. *JAMA Surg*, 152(3): 284-291.

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Common barriers

1. Data
2. Language barrier
3. **Uncertain financial risk**

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Change is hard

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Projected positive ROI

Positive ROI

Percent change	Contaminated specimens	Contamination rate	Cost of contamination	Projected cost savings	Return on investment	Return on investment %
-20%	310	4.66%	$1,600,632	$400,158	$149,948	59.9%
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-60%	**147**	**2.21%**	**$760,300**	**$1,240,490**	**$999,280**	**395.8%**

$ 5,000

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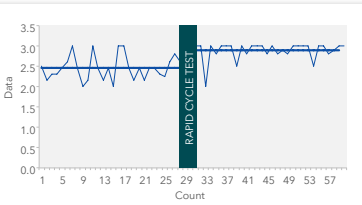
Rapid cycle testing (RCT)

1. Determine the measure to *test the data source*
2. Create *plan to test* the change
3. Collect baseline data
4. Orient and *train staff*
5. Run the *test*
5. Analyze results
7. *Repeat* process (*as needed*)

Pre		
Count	Data	Avg
1	2.5	2.5
2	2.2	2.5
3	2.3	2.5
4	2.3	2.5
5	2.5	2.5
6	2.6	2.5
7	3.0	2.5
8	2.5	2.5
9	2.0	2.5
10	2.2	2.5
11	3.0	2.5
12	2.5	2.5
13	2.2	2.5
14	2.5	2.5
15	2.0	2.5
16	3.0	2.5
17	3.0	2.5
18	2.5	2.5
19	2.2	2.5
20	2.5	2.5
21	2.2	2.5
22	2.5	2.5
23	2.5	2.5
24	2.3	2.5
25	2.2	2.5
26	2.6	2.5
27	2.8	2.5
28	2.6	2.5
29	2.8	2.5
30	2.4	2.5
31		2.0
32		2.0

Post		
Count	Data	Avg
1	3.0	2.9
2	3.0	2.9
3	2.0	2.9
4	3.0	2.9
5	2.8	2.9
6	3.0	2.9
7	3.0	2.9
8	3.0	2.9
9	2.5	2.9
10	3.0	2.9
11	2.8	2.9
12	3.0	2.9
13	3.0	2.9
14	3.0	2.9
15	2.8	2.9
16	3.0	2.9
17	2.8	2.9
18	2.9	2.9
19	2.8	2.9
20	3.0	2.9
21	3.0	2.9
22	3.0	2.9
23	3.0	2.9
24	2.5	2.9
25	3.0	2.9
26	3.0	2.9
27	2.8	2.9
28	2.9	2.9
29	3.0	2.9
30	3.0	3.0
31		3.0
32		3.0



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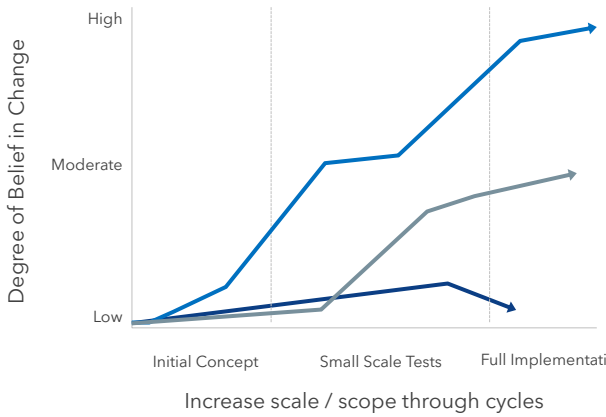
Fail early, small, and often



Hardwire successful change and move to the *next one*

Change needs ***additional testing*** and refinement

Unsuccessful change ***reject bad ideas*** early

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Making the business case for quality

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Reflection and questions

Aha!

Huh?

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Making the Business Case for Quality

Rural Critical Access Hospital and Clinic Conference

November 10, 2022

Kearney, Nebraska

Richard (Rich) Priore, ScD, MHA, FACHE
Founder & CEO, Excelsior HealthCare Group
Clinical Associate Professor, Tulane University

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