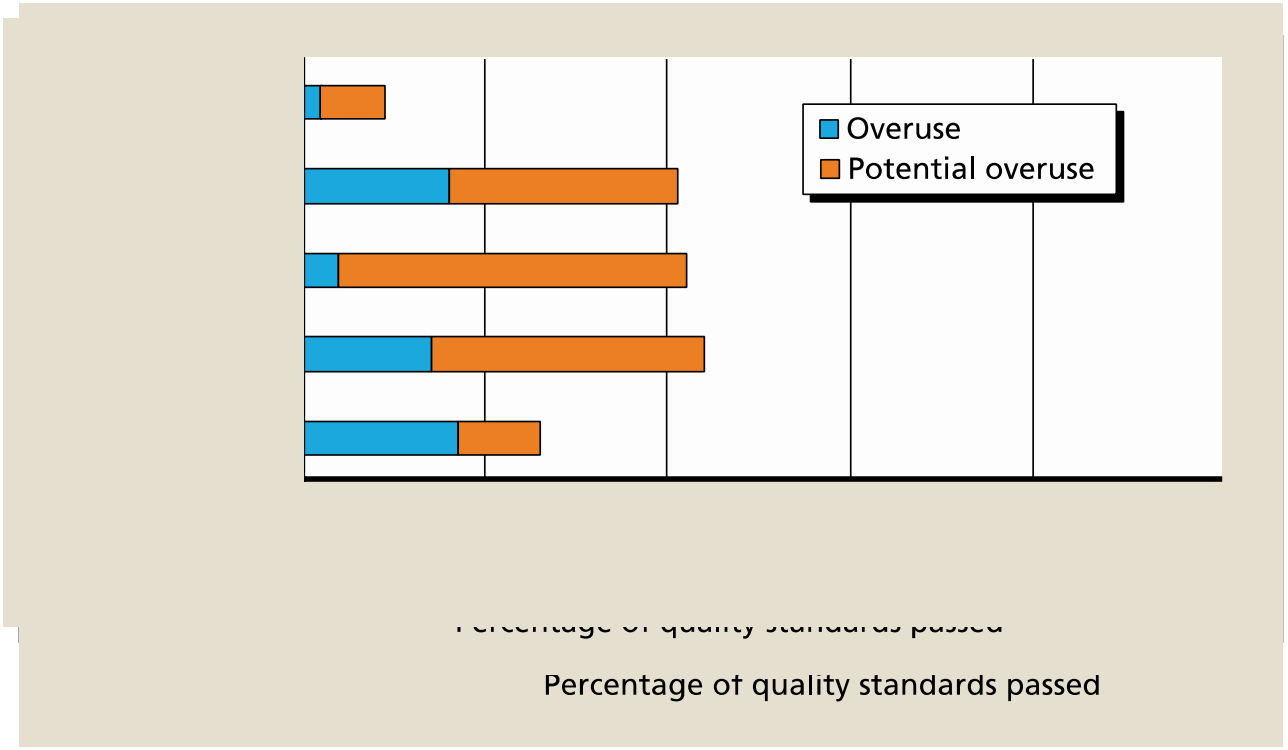
Does Improving Care on HEDIS Measures Represent Good "Value"?

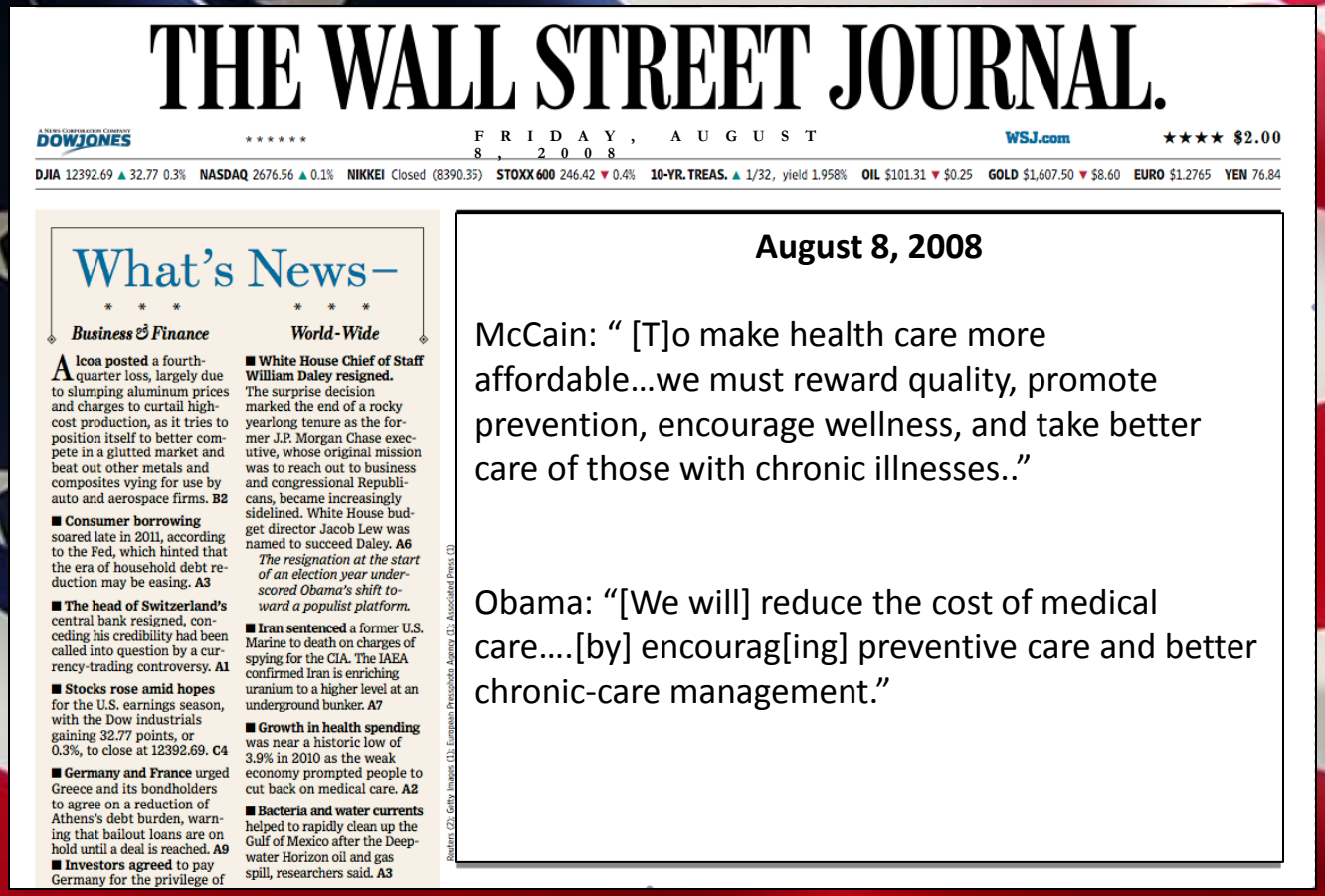
A framework for measuring the value of QI activities

Michael S. Broder, MD

President, Partnership for Health Analytic Research (PHAR), LLC

From the RAND Corporation Report “US Health Care: facts about cost, access, and quality”





THE WALL STREET JOURNAL.

DOWJONES ****** FRIDAY, AUGUST 8, 2008 WSJ.com ★★★★ $2.00

DJIA 12392.69 ▲ 32.77 0.3% NASDAQ 2676.56 ▲ 0.1% NIKKEI Closed (8390.35) STOXX 600 246.42 ▼ 0.4% 10-YR. TREAS. ▲ 1/32, yield 1.958% OIL $101.31 ▼ $0.25 GOLD $1,607.50 ▼ $8.60 EURO $1.2765 YEN 76.84

What's News—

Business & Finance

Alcoa posted a fourth-quarter loss, largely due to slumping aluminum prices and charges to curtail high-cost production, as it tries to position itself to better compete in a glutted market and beat out other metals and composites vying for use by auto and aerospace firms. **B2**

■ **Consumer borrowing** soared late in 2011, according to the Fed, which hinted that the era of household debt reduction may be easing. **A3**

■ **The head of Switzerland's** central bank resigned, conceding his credibility had been called into question by a currency-trading controversy. **A1**

■ **Stocks rose amid hopes** for the U.S. earnings season, with the Dow industrials gaining 32.77 points, or 0.3%, to close at 12392.69. **C4**

■ **Germany and France** urged Greece and its bondholders to agree on a reduction of Athens's debt burden, warning that bailout loans are on hold until a deal is reached. **A9**

■ **Investors agreed** to pay Germany for the privilege of

World-Wide

■ **White House Chief of Staff William Daley resigned.** The surprise decision marked the end of a rocky yearlong tenure as the former J.P. Morgan Chase executive, whose original mission was to reach out to business and congressional Republicans, became increasingly sidelined. White House budget director Jacob Lew was named to succeed Daley. **A6**

The resignation at the start of an election year underscored Obama's shift toward a populist platform.

■ **Iran sentenced** a former U.S. Marine to death on charges of spying for the CIA. The IAEA confirmed Iran is enriching uranium to a higher level at an underground bunker. **A7**

■ **Growth in health spending** was near a historic low of 3.9% in 2010 as the weak economy prompted people to cut back on medical care. **A2**

■ **Bacteria and water currents** helped to rapidly clean up the Gulf of Mexico after the Deepwater Horizon oil and gas spill, researchers said. **A3**

Reuters (2); Getty Images (1); European Pressphoto Agency (1); Associated Press (3)

August 8, 2008

McCain: " [T]o make health care more affordable…we must reward quality, promote prevention, encourage wellness, and take better care of those with chronic illnesses.."

Obama: "[We will] reduce the cost of medical care….[by] encourag[ing] preventive care and better chronic-care management."

There are no publicly available data [on whether]…spending $30,000 on quality improvement activities could produce 0, 1, or 100 additional good years of life.

Brook JAMA 2010

Could we develop a framework to answer this question?

Objectives:

1. Create a model that would allow us to calculate, in $/QALY, the value of spending on quality improvement (QI-adjusted ICER)

1. Apply the model to the 2010 HEDIS measures

Example: What is the value of improving compliance with the HEDIS measure requiring chlamydia screening?

Measure definition: Percent of sexually active females ages 16 - 25 with at least 1 Chlamydia test during the measurement year

annual population cost at full compliance

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annual population benefit at full compliance

How many women requiring chlamydia screening?

Identify appropriate **target level** of compliance

Estimate the **number of persons** needed for "full" compliance

Source	Model Element	Value
US Census	Females age 15 - 24	21,308,500
CDC	66% sexually active	14,148,844
NCQA	Current HEDIS compliance	41.0%
Input	Desired level of HEDIS compliance	95.0%
Calculated	Persons needed for "full" compliance	*7,640,376*

Estimate Per-Person Cost of Improving Compliance

Start with a CEA for the relevant measure

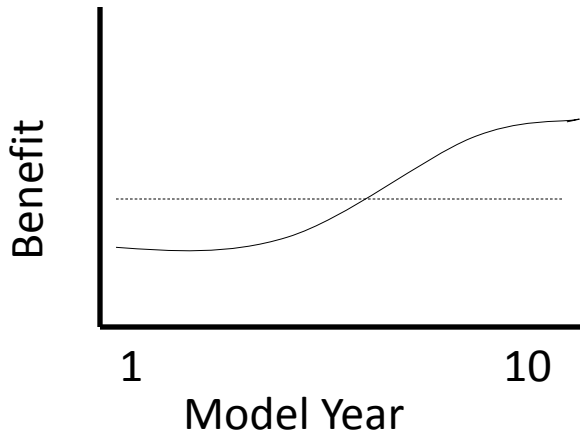
Screening for *Chlamydia trachomatis* in Women 15 to 29 Years of Age: A Cost-Effectiveness Analysis
Hu, et al. *Ann Intern Med.* 2004;141:501-513.

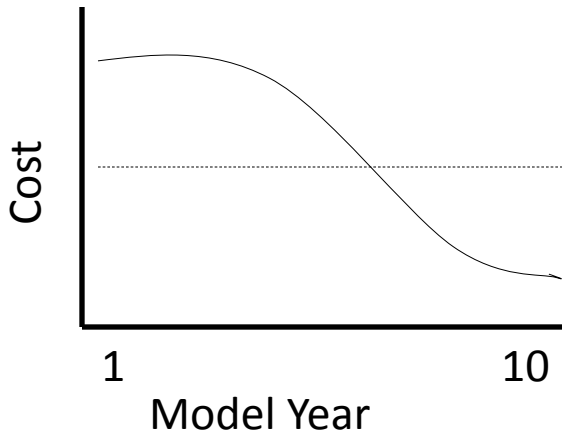
	Status Quo: no screening	Alternative: annual screening
10 year cost	$432*	$493*
QALE	27.2805	27.3021
Incremental $/QALY	$61/.0216	
ICER	2985	

*updated to 2010 costs

CEAs typically calculate costs over the long run …we need annual estimates

ANNUAL, PER-PERSON, STEADY STATE COST

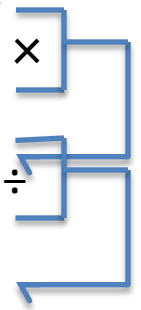




Source	Model Element	Value
Hu	Incremental cost per additional person screened	$61
Hu	10 year period of costs (ages 15-24), discounted at 3%	8.786
Calculated	Annual per person steady state cost	$6.94

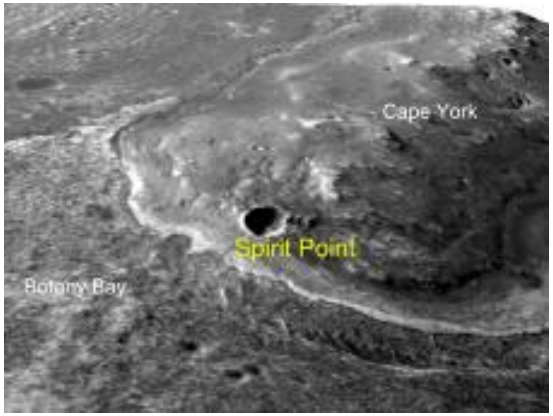
Use **annual, per-person, steady-state cost** to calculate the population cost and benefit

Source	Model Element	Value
US Census	Females age 15 - 24	21,308,500
CDC	66% sexually active	14,148,844
NCQA	Current HEDIS compliance	41.0%
Input	Desired level of HEDIS compliance	95.0%
Calculated	Persons needed for full compliance	*7,640,376*
Calculated	Annual per person steady state cost	$6.94
Calculated	Annual intervention cost at full compliance	$53,010,645
Hu	ICER $/QALY	2985
Calculated	Annual steady state benefit of full compliance	17,762



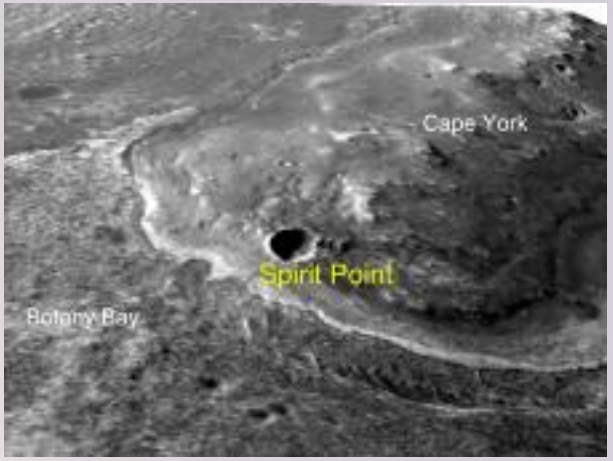
San Diego vs. Mars

San Diego vs. Spirit Point: traditional cost effectiveness analysis



	Status Quo: San Diego, CA	Alternative: Spirit Point, Mars
Lifetime cost	$1,000,000	$1,500,000
QALE	50	100
Incremental $/Incremental QALY	$500,000/50 QALY	
ICER	10,000	

San Diego vs. Spirit Point: cost effectiveness analysis, accounting for transportation cost



	Status Quo: San Diego, CA	Alternative: Spirit Point, Mars
Lifetime cost	$1,000,000	$1,500,000+ 20,000,000,000
QALE	50	100
Incremental $/Incremental QALY	$20,000,500,000/50 QALY	
ICER	4,000,000	

Ignoring QI cost systematically underestimates the cost of improving compliance with quality measures

Identify the QI COST for changing practice for the relevant measure

A Randomized Controlled Trial to Increase Cancer Screening Among Attendees of Community Health Centers. Roetzheim et al, *Ann Fam Med 2004;2:294-300.*

- intervention increased Pap screening by 50%
- $16/additional woman screened (2010 costs)
- assume effort of increasing Pap rates similar to chlamydia screening

Calculate per-treated-person cost

Annual per-person steady state cost of the alternative scenario (living on Mars)

+

Per-person cost of QI program (moving to Mars)

Source	Model Element	Value
Hu	Incremental (per-person) cost of screening	$61
Hu	10 year period of costs (ages 15-24), discounted at 3%	8.786
Calculated	Annual per person steady state cost	$6.94
Roetzheim	Cost of program to improve screening	$16.10
Calculated	Per-treated-person cost	$23.04

Calculate the population cost of the intervention

Persons needed for full compliance

x

Per treated person cost

Source	Model Element	Value
US Census	Females age 15 - 24	21,308,500
CDC	66% sexually active	14,148,844
NCQA	Current HEDIS compliance	41.0%
Input	Desired level of HEDIS compliance	95.0%
Calculated	Persons needed for full compliance	7,640,376
Calculated	Per-treated-person cost	$23.04
Calculated	Additional annual cost of full compliance	$176,020,695

Divide population cost by population value

Source	Model Element	Value
US Census	Females age 15 - 24	21,308,500
CDC	66% sexually active	14,148,844
NCQA	Current HEDIS compliance	41.0%
Input	Desired level of HEDIS compliance	95.0%
Calculated	Persons needed for full compliance	7,640,376
Hu	Incremental cost per additional person screened	$61
Hu	10 year period of costs (ages 15-24), discounted at 3%	8.786
Calculated	Annual per person steady state cost	$6.94
Roetzheim	Cost of program to improve screening	$16.10
Calculated	Per-treated-person cost	$23.04
Calculated	Additional annual cost of full compliance	$176,020,695
Calculated	Annual benefit of full compliance	17,762
Calculated	QI-adjusted ICER	$9,910/QALY

It's simple, really……

Annual Steady State Per Person Cost $6.94 + Per Person QI Cost $16.10 = Per Treated Person Cost $23.04 × Population 7,640,376 = Annual Population Cost $176,020,695

CEA $2,985/QALY

QI-adjusted ICER $9,910/QALY

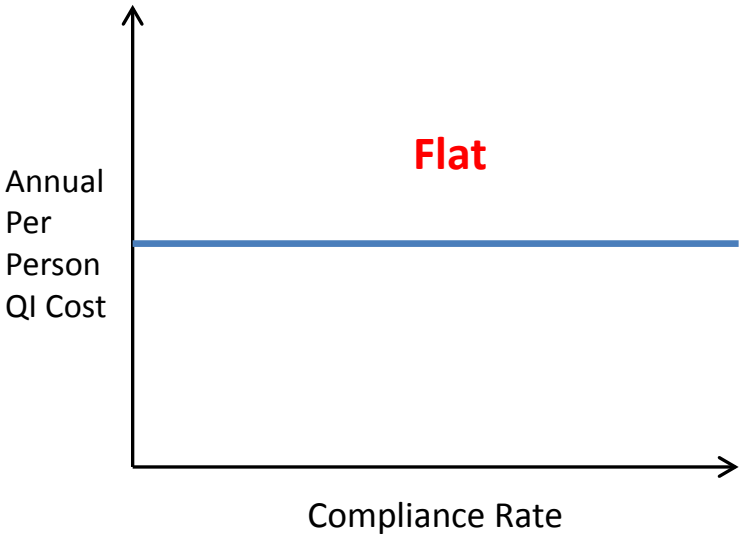
Annual Steady State Per Person Cost $6.94 × Population 7,640,376 ÷ 2985 $/QALY = Annual Population Benefit 17,762

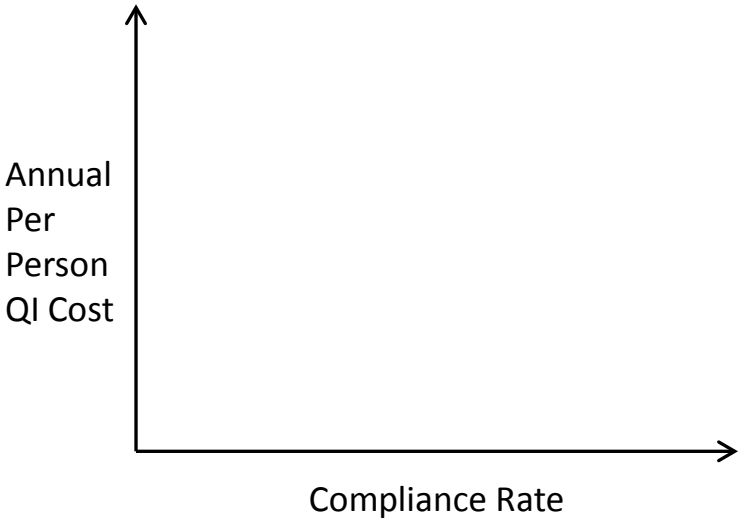
Then repeat x 18….

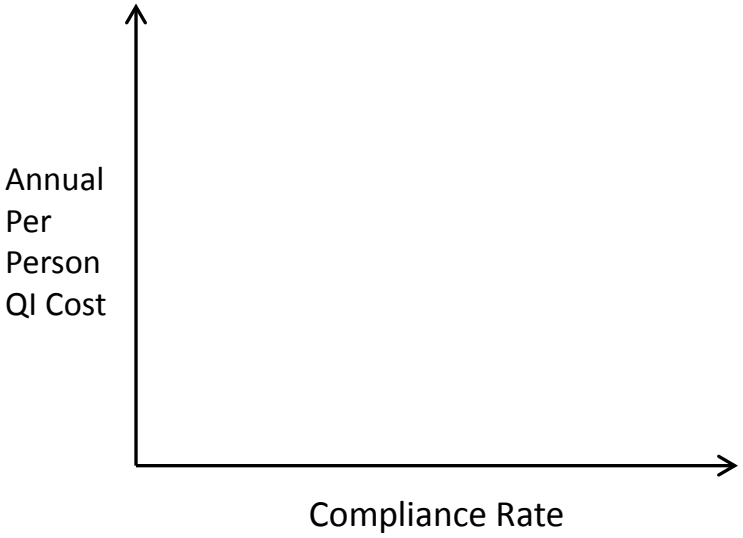
Overall Value of Improving HEDIS Compliance

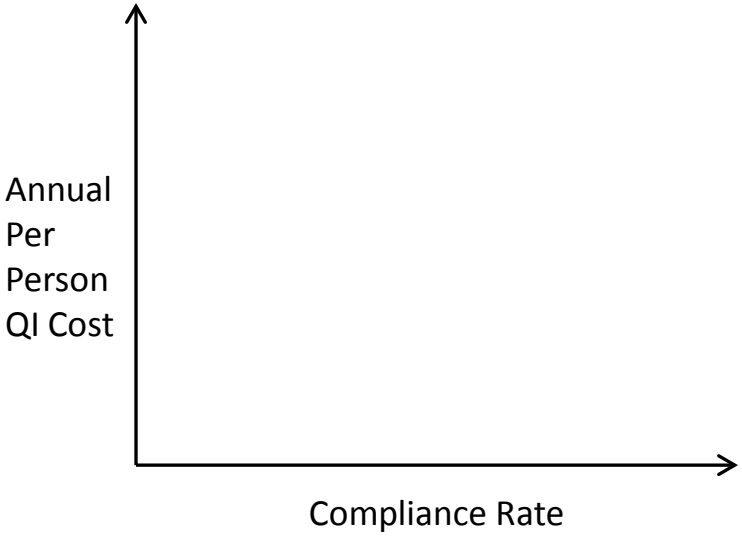
Measure	Annual Cost	Annual Benefit	QI-Adjusted ICER	
Improved Health, Decreased Cost				
Childhood Immunizations	(368,289,203)	4,357		
Appropriate URI treatment	(65,464,205)	n/a		
Antibiotics for Acute Bronchitis	(10,879,593)	n/a		
Improved Health, Increased Cost				
Alcohol and Drug Treatment	889,807,583	4,560,579		195
Smoking Cessation	1,033,784,978	983,162		1051
Flu Shots for Adults ≥65	210,797,561	46,385		4,544
Chlamydia Screening	176,020,695	17,762		9,910
Cervical Cancer Screening	397,141,458	25,683		15,463
Beta Blockers	8,794,062	1534		5733
Glaucoma Screening	23,523,611	2,212		10,634
Colon Cancer Screening	2,085,969,788	90,730		22,991
Antidepressant Medication	1,401,827,787	154		9,075,868
ADHD Medication Follow Up	12,158,192	618		19,669
Comprehensive Diabetes Care	4,140,807,584	176,033		23,523
Flu Shots for Adults 50-65	1,348,014,624	23,075		58,420
Breast Cancer Screening	2,663,710,610	41,267		64,549
Worsened Health, Decreased Cost				
Appropriate Testing for Pharyngitis	(82,350,359)	(90)		
Imaging Studies for Back Pain	(454,679,026)	(176,915)		
Total	**13,410,696,149**	**5,796,546**	Overall Median	**2,314** **10,634**

Annual Per Person Implementation Cost Assumptions









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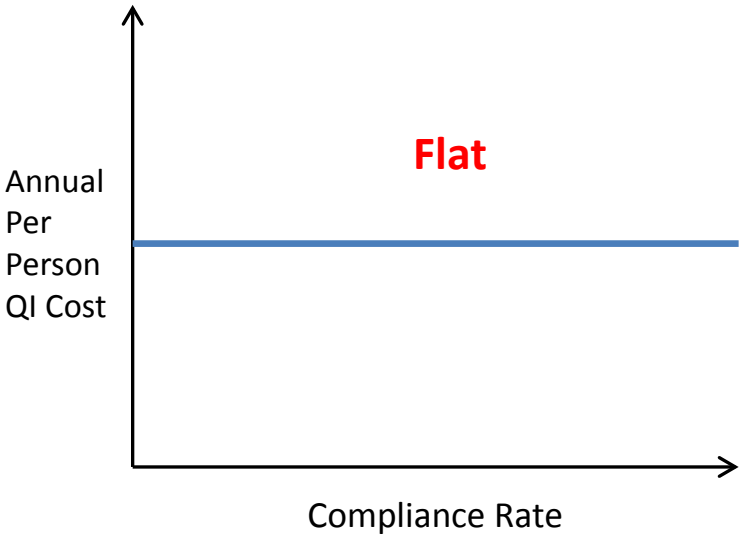

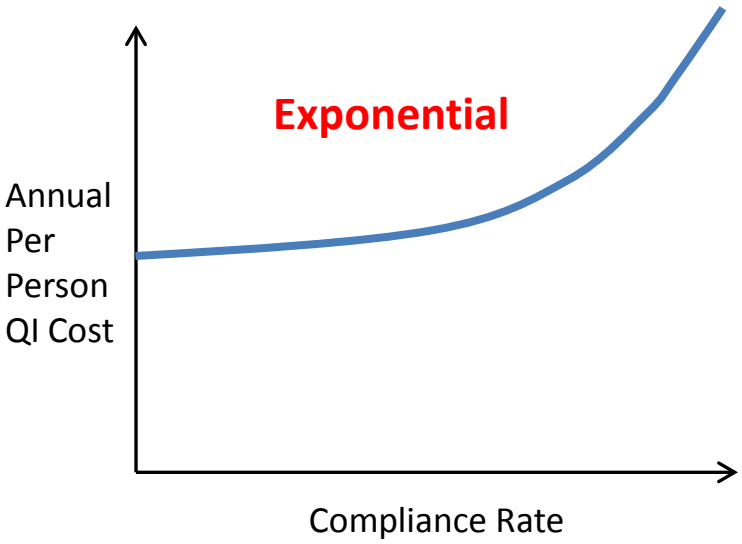

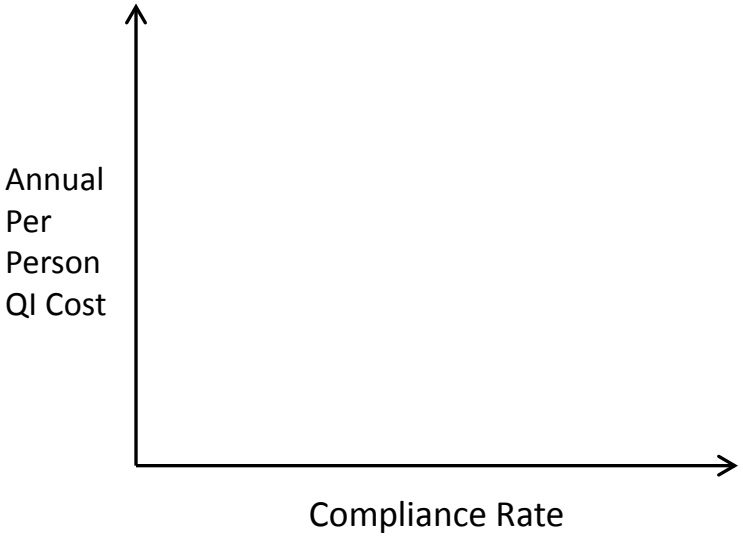

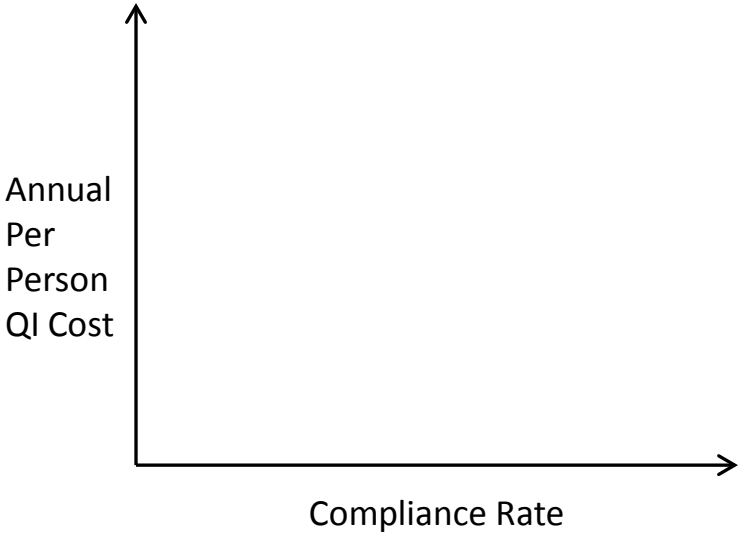

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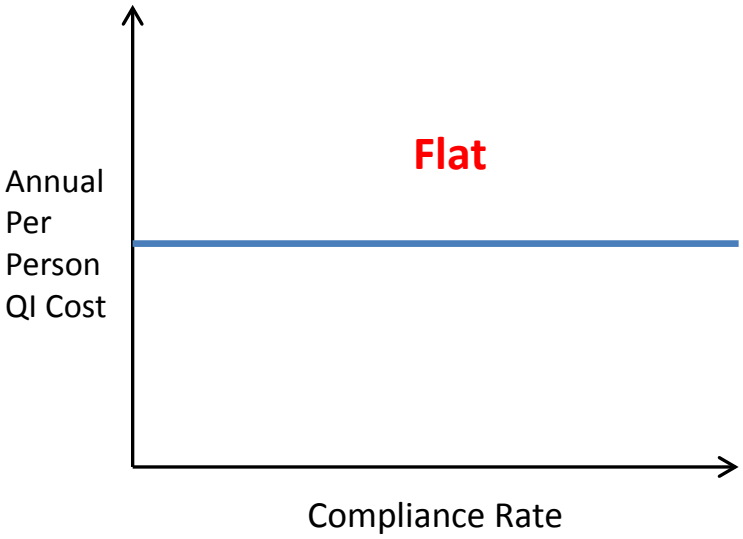

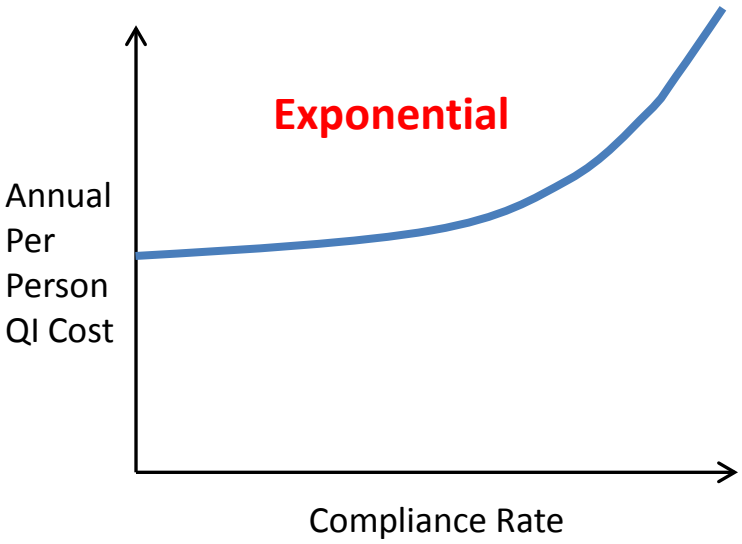

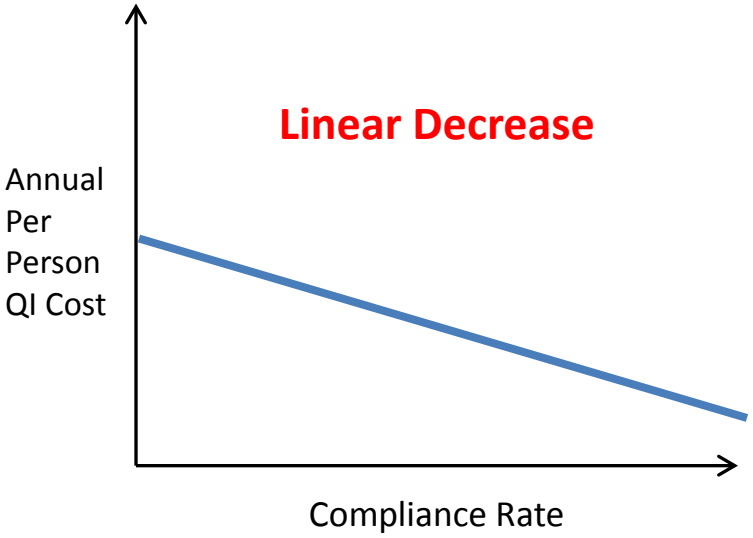

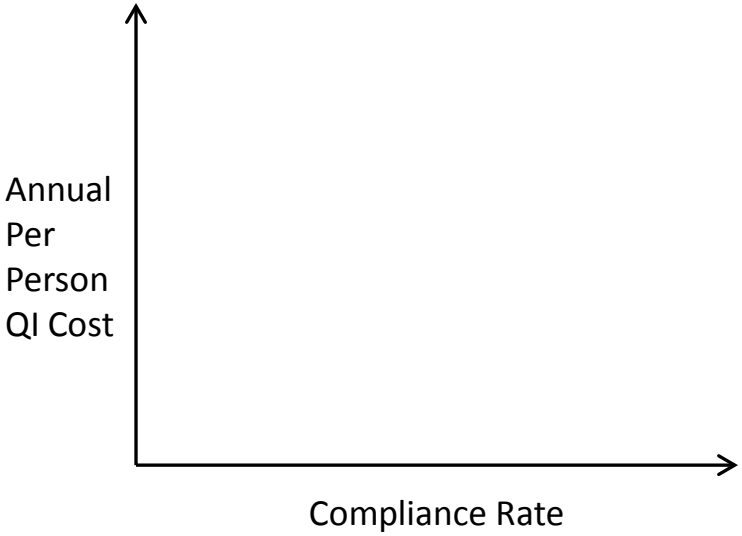

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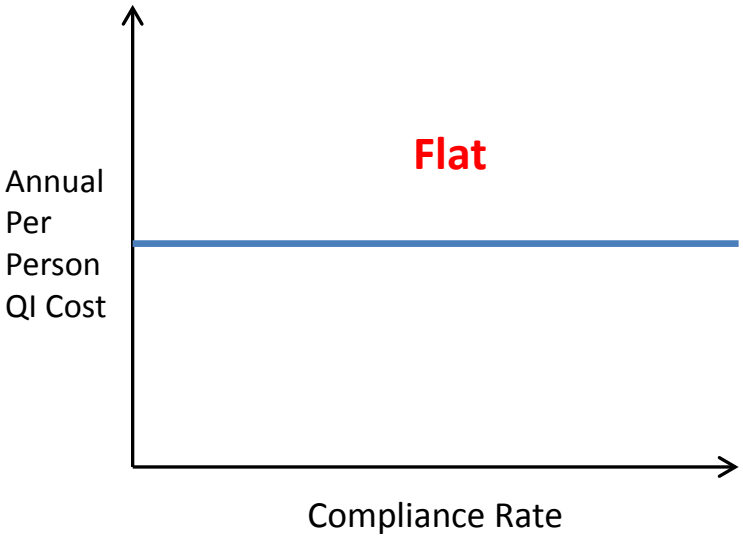

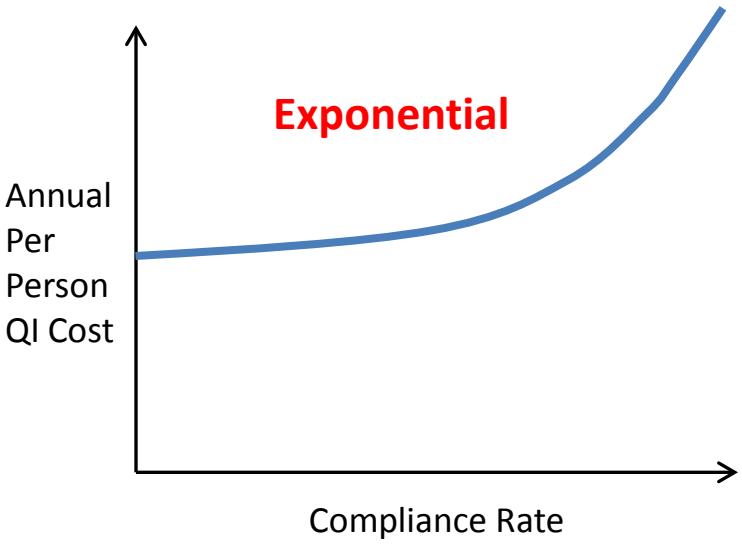

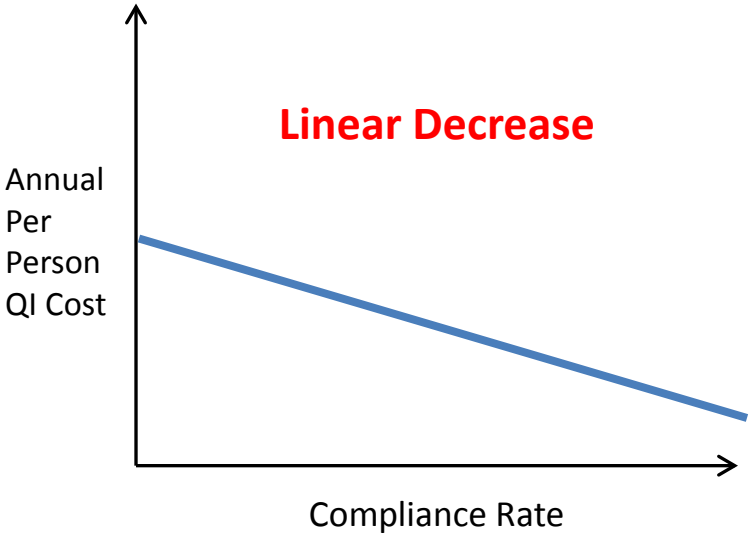

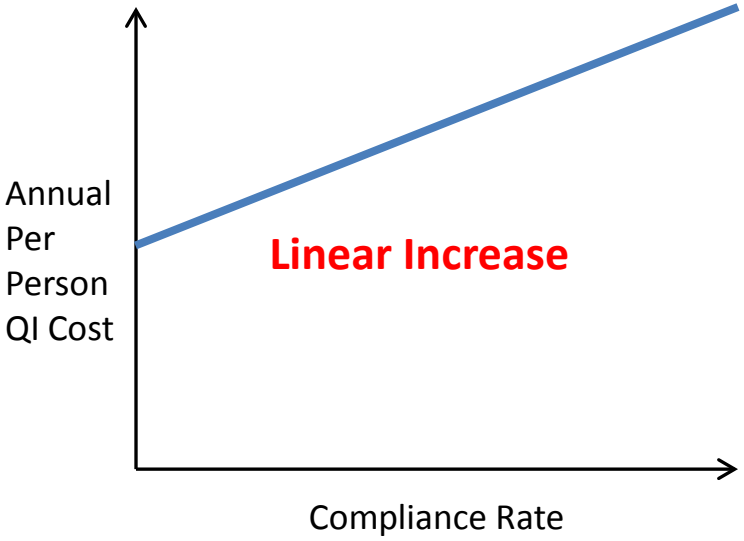

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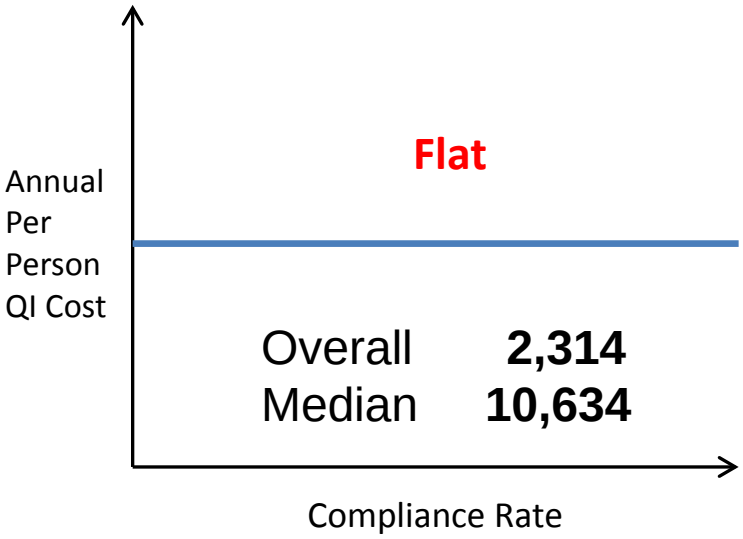
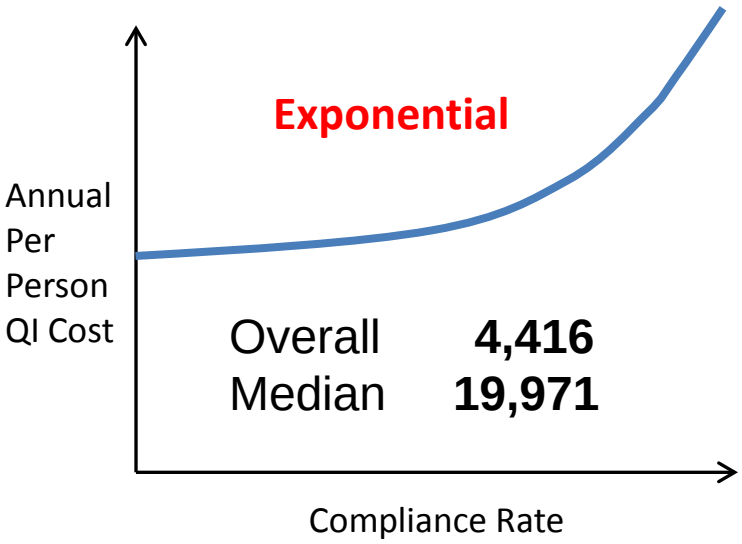
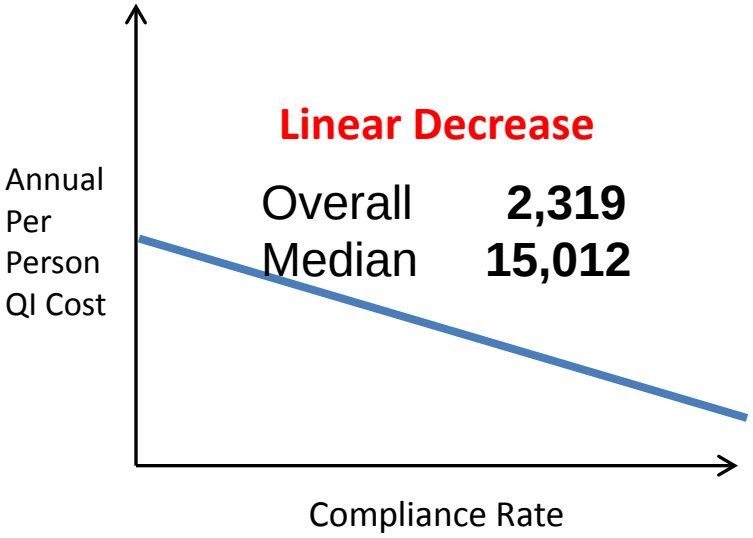
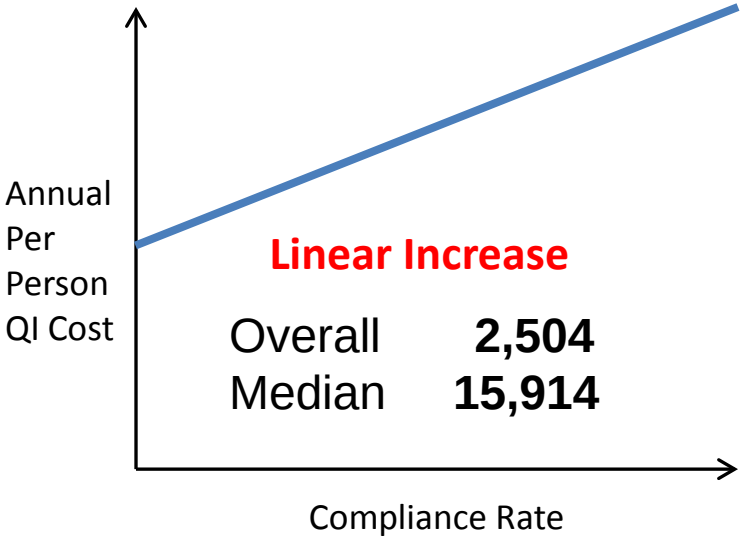
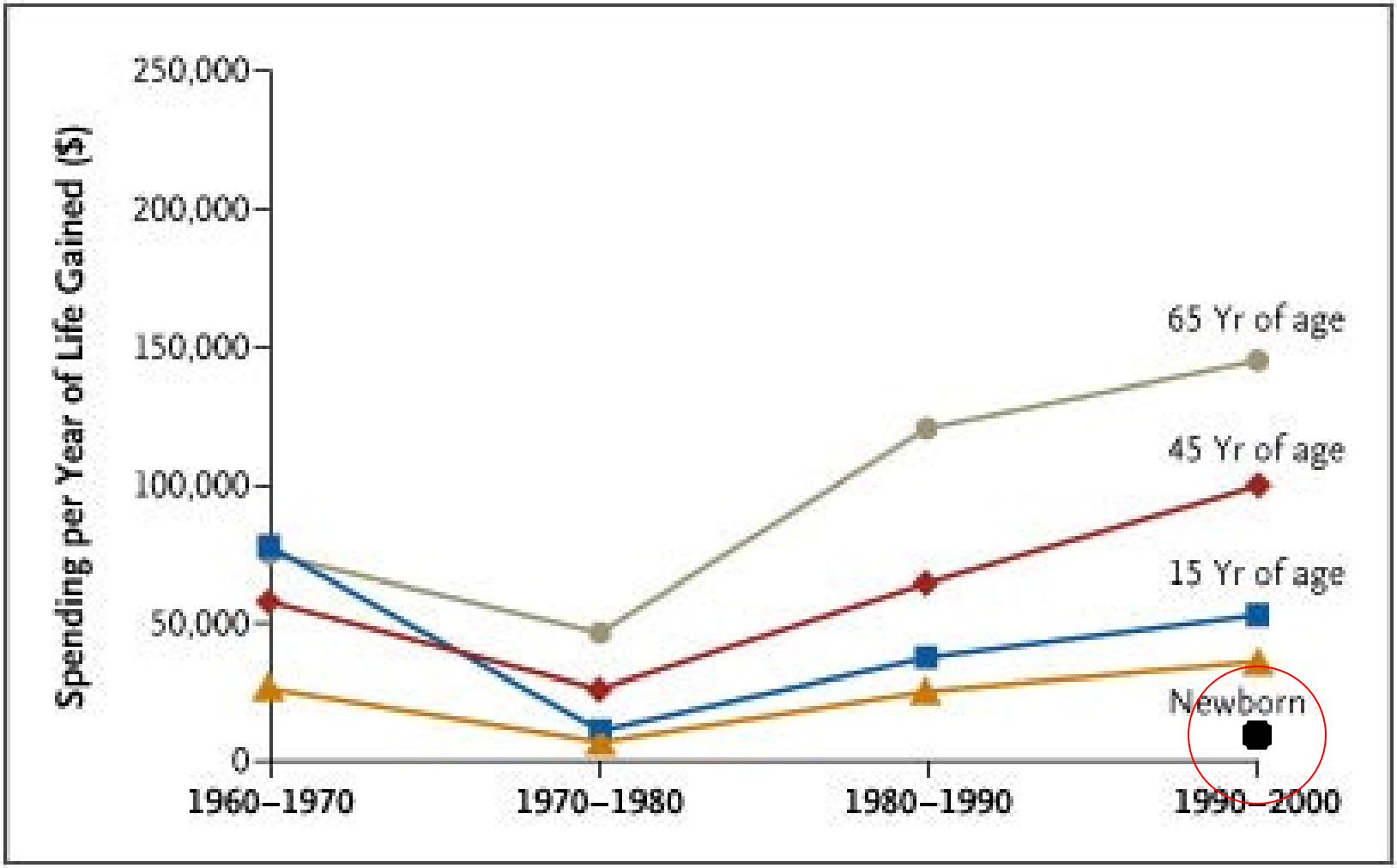








Longitudinal Trends in the Costs per Year of Life Gained in Four Age Groups.



Cutler DM et al. N Engl J Med 2006;355:920-927.

Value of Improving HEDIS Compliance

Measure	Annual Cost	Annual Benefit	QI-Adjusted ICER
Overuse			
Appropriate URI treatment	(65,464,205)	n/a	
Appropriate Testing for Pharyngitis	(82,350,359)	(90)	
Imaging Studies for Back Pain	(454,679,026)	(176,915)	
Antibiotics for Acute Bronchitis	(10,879,593)	n/a	
Cancer Screening			
Cervix	397,141,458	25,683	15,463
Breast	2,663,710,610	41,267	64,549
Colon	2,085,969,788	90,730	22,991
Immunization			
Childhood	(368,289,203)	4,357	
Flu Shots for Adults ≥65	210,797,561	46,385	4,544
Flu Shots for Adults 50-65	1,348,014,624	23,075	58,420

Thank you:

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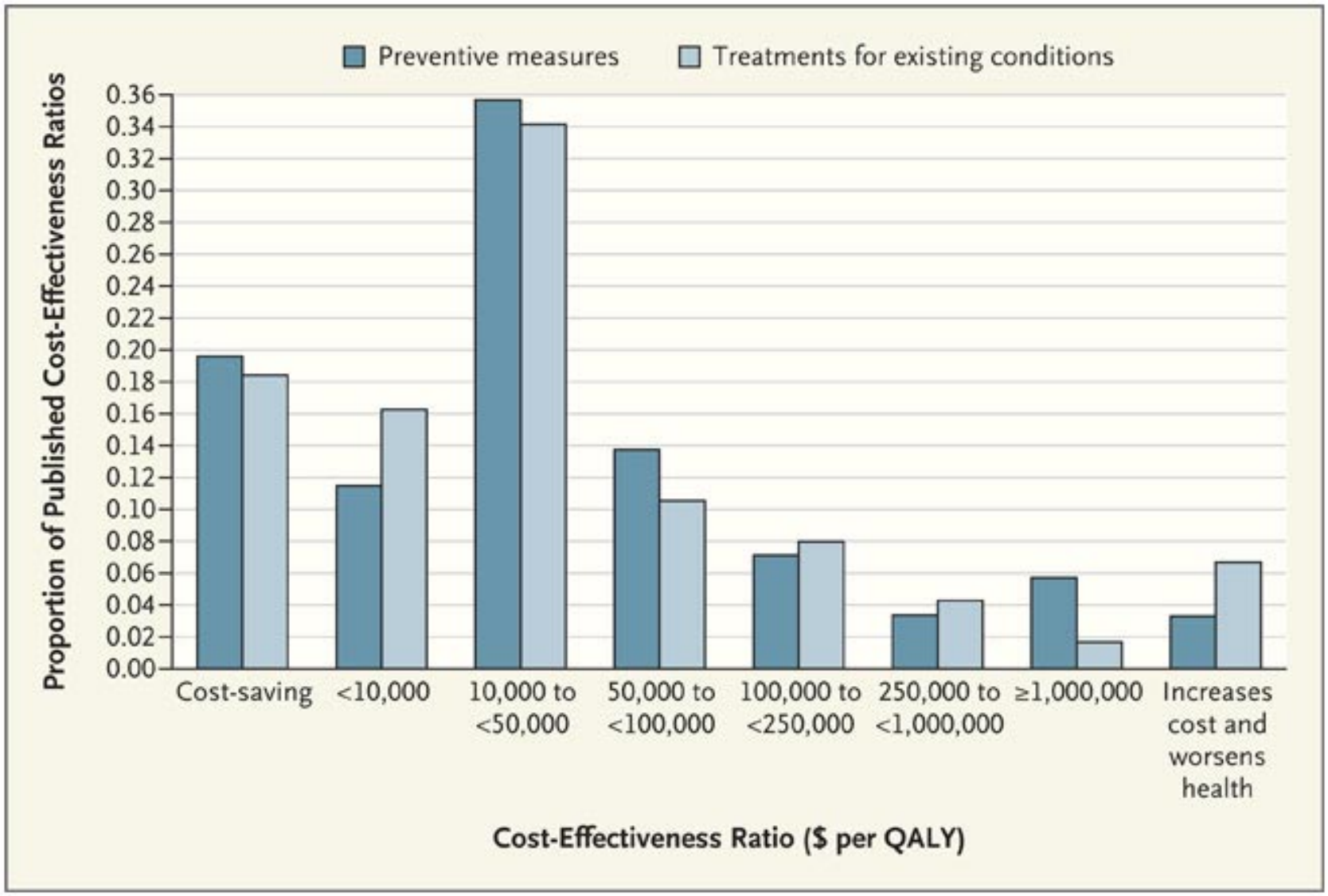
Irina Yermilov, MD

RAND Health
Emmett Keeler, PhD

Distribution of Cost-Effectiveness Ratios



Distribution of Cost-Effectiveness Ratios