Optimizing the P4P ROI Equation

IHA Conference

February 27th, 2008

Presenters

- Francois de Brantes, MS, MBA, Chief Executive Officer, Bridges to Excellence
- Michael Hagan, PhD, Senior Economist, Agency for Healthcare Research and Quality
- R. Adams Dudley, MD, Associate Professor of Medicine and Health Policy, Institute for Health Policy Studies, University of California, San Francisco
- Harold S. Luft, PhD, Caldwell B Esselstyn Professor and Director, Institute for Health Policy Studies, University of California, San Francisco
- Amita Rastogi, MD, MH, Chief Medical Officer, PROMETHEUS Payment, Bridges to Excellence
- Michael Miltenberger, BTE Program Analyst – Intern, Bridges to Excellence
- Guy D'Andrea, MBA, Founder and President, Discern Consulting

Agenda

8:30-8:40: Introduction

- Francois de Brantes

8:40-9:30: Optimizing ROI: the "R" in ROI

Panel 1: New Findings from AHRQ: Understanding the Impact and Unintended Consequences of Incentives for Quality – Michael Hagan, PhD (moderator)

- R. Adams Dudley, MD
- Harold S. Luft, PhD

9:30-10:00: Optimizing ROI: the "R" in ROI

Panel 2: Findings from BTE: The Direct and Indirect Benefits of BTE's Rewards Programs – Francois de Brantes (moderator)

- Amita Rastogi, MD, MH
- Michael Miltenberger

10:00-10:10: BREAK

10:10-10:20: The ROI Equation: An Overview

- Francois de Brantes

10:20-11:10: The Number of Patients Receiving High Quality Care: BTE's Critical Mass Analysis

- Guy D'Andrea

11:10-11:40: Optimizing the ROI Equation

- Francois de Brantes

11:40-12:00: Q and A

The P4P "ROI" Equation

$$NPV = \sum_{i=1}^{n} \frac{((\mathrm{DBP} + \mathrm{IDP}) \times (\mathrm{NP_i} - \mathrm{P_i})) - (\mathrm{R} \times \mathrm{NP_i}) - (\mathrm{VC_i} + \mathrm{FC_i})}{(1 + rate)^{\mathrm{i}}}$$

DBP + IDP = Direct and Indirect Benefits per patient, e.g. direct medical costs, productivity – We'll focus mostly on DBP

NP = The incremental number of patients getting good care

P = The number of patients getting "good care" in the status quo

R = Rewards or incentives per patient

VC + FC = Variable and fixed costs of the program

Panel 1 will focus on “NP”

Everything else being equal, you maximize your return on a P4P effort by getting as many patients as possible to seek care at high-performing physicians– by increasing the pool of high-performers, or by moving patients to high-performers

- Dr. Luft looks at how incentives in multi-specialty group practices motivate performance improvement
- Dr. Dudley looks, in part, at how certain benefit designs and other consumer-focused tactics can encourage a consumer to seek a better quality provider

$$NPV = \sum_{i=1}^{n} \frac{((\mathrm{DBP} + \mathrm{IDP}) \times (\mathbf{NP_i} - \mathrm{P_i})) - (\mathrm{R} \times \mathbf{NP_i}) - (\mathrm{VC_i} + \mathrm{FC_i})}{(1 + rate)^i}$$

Panel 2 will focus on the Benefits

The indirect benefits are difficult to gauge accurately and vary by employer (and are mostly irrelevant to plans), however, they exist. So if the NPV is positive on the basis of DBP, it will be even more so when accounting for IDP.

- Dr. Rastogi will review the average savings for physicians that met the criteria for delivering good care to patients with Diabetes
- Mr. Miltenberger will review the evidence of more systematic practice transformation that impacts all patients in the practice

$$NPV = \sum_{i=1}^{n} \frac{((\mathbf{DBP} + \mathrm{IDP}) \times (\mathrm{NP_i} - \mathrm{P_i})) - (\mathrm{R} \times \mathrm{NP_i}) - (\mathrm{VC_i} + \mathrm{FC_i})}{(1 + rate)^i}$$

Panel 1 – Findings from AHRQ-sponsored research

Moderator: Mike Hagan, AHRQ

Dr. Adams Dudley

Dr. Hal Luft

Incentives for Consumers: Can They Improve Health and Health Care?

R. Adams Dudley, MD, MBA

Associate Professor of Medicine and Health Policy, University of California, San Francisco

Supported by the Agency for Healthcare Research and Quality

Outline

- What consumer decisions can financial incentives be used to influence?
- What is tiering, and how is it used to create incentives?
- Do consumer financial incentives work?
- How can consumer financial incentives be aligned with public reporting, P4P, and other payment reform initiatives?

What consumer decisions can financial incentives be used to influence?

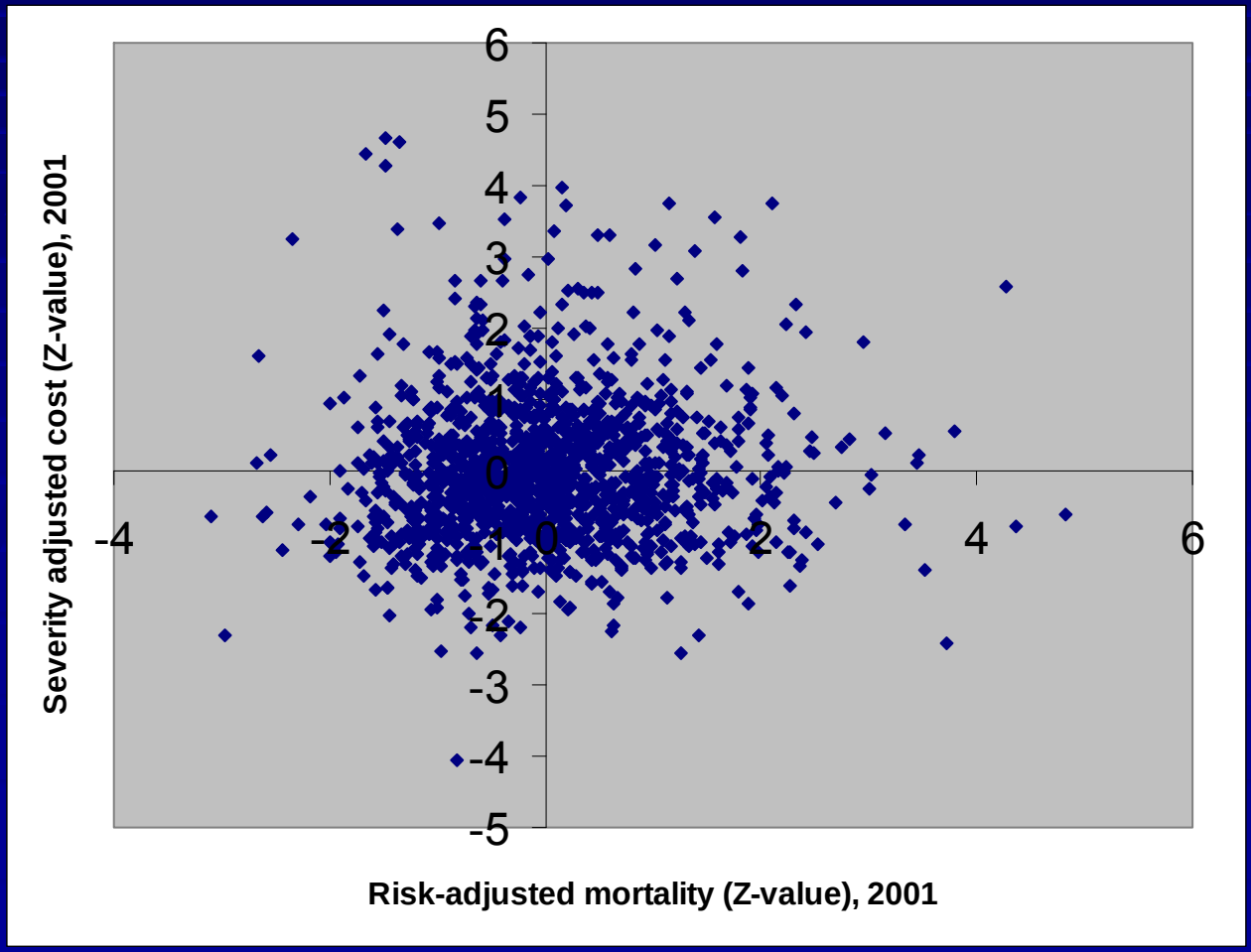
- Possible Goals: Create an Incentive to…
- 1: Select a high value health plan or network
- 2: Select a high value provider
- 3: Choose the highest value treatment option
- 4: Reduce health risk by seeking care
- 5: Reduce health risk by changing lifestyle

What is a “Tiered” Health Plan?

- Tiered health plans offer provider lists sorted into tiers based on quality, cost, or some combination of these
- Patients are offered lower out-of-pocket costs to use providers in the preferred tier
- If the incentive is a lower insurance premium, it’s a “premium-tiered” plan; if it’s a lower copayment for each visit, it’s a “point-of-care” tiered plan

One Possible Approach to Tiering

Hospital Cost per Discharge and Mortality Rate



Data source: Healthcare Cost and Utilization Project (HCUP) State Inpatient Databases (SID) for 10 states (over 1300 hospitals). Agency for Healthcare Research and Quality.

Patient Choice (premium tiering in Minn and the Dakotas)

- Direct contracting between employers and provider networks
- Provider networks rated on quality and cost/patient/year, then sorted into tiers
  - Quality is measured for both the physicians (e.g., Bridges to Excellence participation) and hospitals (e.g., Leapfrog performance) in each network
  - Quality and cost measures summarized-->3 tiers

Patient Choice (premium tiering in Minn and the Dakotas)

- Consumers choose a provider network and pay lower annual premiums for choosing higher tier networks
- 2006 prices:
  - Choosing Tier 1 network-->lowest premium
  - Tier 2 premium = Tier 1 plus 16% of total costs
  - Tier 3 premium = Tier 1 plus 38% of total costs

Tufts Navigator PPO (point-of-care tiering in Massachusetts)

- Hospitals rated on:
  - Cost: plan $ per standardized admission
  - Quality: national standard quality measures already being reported (JCAHO, Leapfrog)
- Separate rating for pediatric, obstetrical, and general med/surg
- Good/better/best = $500/$300/$150 copayment

Value-based Benefit Design*

- Concept: signal “high-value” vs. “low-value” care through cost-sharing
- Employer example: Pitney Bowes has reduced copayments for diabetes, asthma and hypertension medications
- Could add first $ coverage for care any non-dsicretionary care (e.g., for treatment for a new dx of breast cancer)

* See M. Chernew, A. Rosen, A.M. Fendrick, “Value-Based Insurance Design,” Health Affairs, 26(2), w195-203, 30 January 2007.

Pushing the Envelope in Asheville, NC

- The Asheville Project: A program to get city employees with diabetes better care
- Free diabetic supplies, low cost meds, education
- Despite all the free/low cost care, saved more than $1,200/diabetic/year!

Enhanced Benefits in Florida Medicaid

- Many recent innovations in FL Medicaid program, including allowing beneficiaries to “Opt Out” into employer-sponsored plan with full state support

- Also: “Healthy Behavior Credits” (e.g., $25 for alcohol tx program participation) to a health spending account the beneficiary controls

What Do We Know About Consumer Responses to Incentives?

Consumers are Responsive to Incentives to Use Preventive or Chronic Care: % of Studies Finding that Incentives Worked

Incentive Type	Lottery	Gift	Cash	Coupon	Free Medical	Punishment	Totals
Simple	2 of 5 (40%)	2 of 5 (40%)	5 of 5 (100%)	10 of 12 (83%)	3 of 4 (75%)	3 of 3 (100%)	25 of 34 (74%)
Complex	4 of 5 (80%)	2 of 2 (100%)	3 of 6 (50%)	2 of 3 (67%)	1 of 2 (50%)	6 of 7 (86%)	18 of 25 (72%)
Totals	6 of 10 (60%)	4 of 7 (57%)	8 of 11 (73%)	12 of 15 (80%)	4 of 6 (67%)	9 of 10 (90%)	43 of 59 (73%)

Source: Kane et al. Am J Preventive Med; 2004; 27(4):327

Consumers are NOT Responsive to Incentives to Change Lifestyle

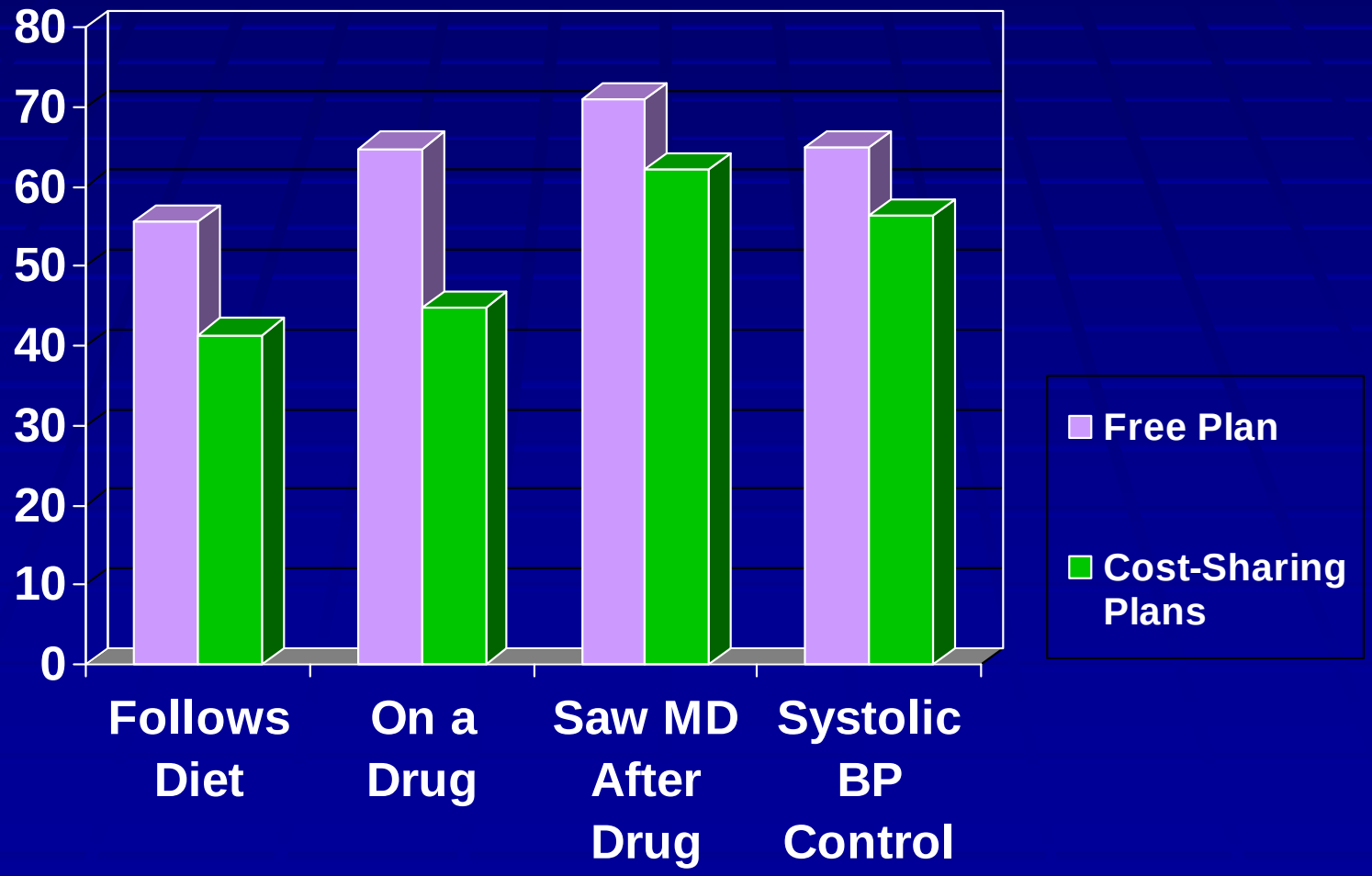
- The large majority of studies of incentives to quit smoking or lose weight suggest incentives are ineffective
- This is not surprising:
  - Patients spending anything on tobacco and too much on food already have large financial incentives, before any incentive offered by a purchaser
  - Most already want to stop, but addiction > incentive
- Failure of incentives does NOT mean that stop smoking and weight-loss programs do not work, just that additional incentives don't increase their effect

Source: various, e.g., Hey, Perera. Cochrane Collaboration 2007.

Cost-Sharing without Clinical Guidance Leads to Undesirable Outcomes

- Study question:
  - Does cost-sharing cause patients to reduce their use of wasteful care?
- Intervention:
  - Randomize patients to free care and drugs or cost-sharing
  - Measure blood pressure treatment and results
- What happened? Keeler et al. JAMA 1985; 254(14):1926

Percentage of Low Income Hypertensives Receiving High Quality Care: Processes and Outcomes by Plan



Cost-Sharing without Clinical Guidance Leads to Undesirable Outcomes

- And the risk of death was 10% higher…
  - Brook et al. NEJM 1983; 309(23):1426

- CRUCIAL NOTE: This was in an environment completely bereft of provider report cards and patient education materials. Today we should be able to do better.

What We Don't Know (1)

- How clinical outcomes and cost compare for different strategies:
  - Incentives to choose the right provider (premium-tiered or point-of-care tiered health plans) vs.
  - High deductible plan with a savings account option vs.
  - Incentives focused on choosing the right treatment option when you are sick (e.g., medical therapy for angina vs. a coronary stent)

What We Don't Know (2)

- Whether providing *education and information* makes cost-sharing safer
  - That is, if we try to teach patients about what necessary care or the best treatment options are, will that fix the poor outcomes seen with cost-sharing alone

What We Don’t Know (3)

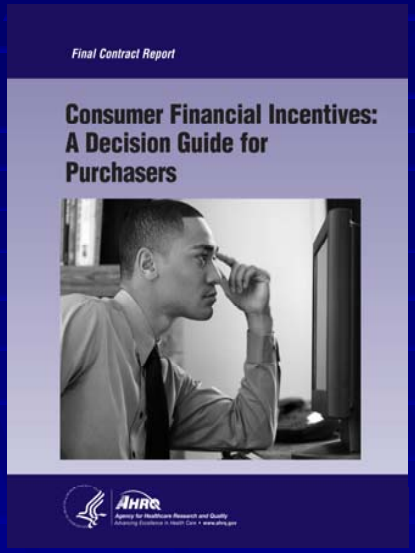
- In terms of educating patients, what is the best:
  - source for information about provider performance
  - source for information about the outcomes of various treatment options or the need to keep up with preventive or chronic care
  - method for delivering this information

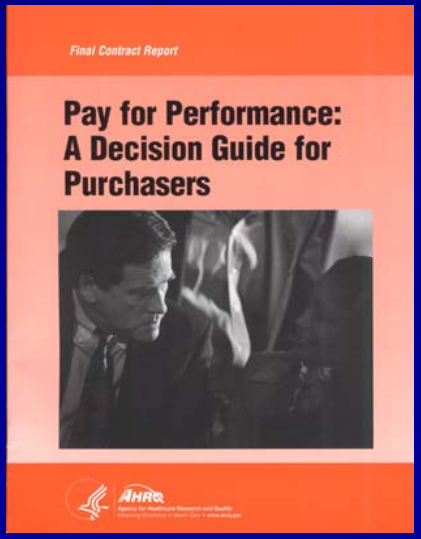
Conclusion

- Consumer incentives can improve preventive and chronic care
- Tiered plans are new and have not been studied much, but potentially promising, as long as quality is a major component of tiering designations
- High deductible plans also new, could be accompanied by education/information for patients with chronic disease

AHRQ Series of Decision Guides

- AHRQ commissioned:
  - *Consumer Financial Incentives: A Decision Guide for Purchasers**
- AHRQ commissioned:
  - *Pay for Performance: A Decision Guide for Purchasers*
- A panel of 10-15 purchasers and
- consumers identified series of questions
- which became outline for each Guide





- **Available in October 2007. Email*
- *Peggy.McNamara@ahrq.hhs.gov to request a copy.*

Experience from a Physician P4P Experiment in Outpatient Settings in Northern California

Harold Luft, PhD

Sukyung Chung, PhD

Palo Alto Medical Foundation Research Institute

and

Institute for Health Policy Studies, UCSF

Research Objective

- Examine physician performance with the adoption of a physician-incentive program
  - Learning effect over the first three quarters of program implementation
  - Assess with regard to various quality measures tied to incentives
  - Impact of frequency of payment on physicians' responsiveness

Study Setting

- Palo Alto Medical Foundation
  - Non-profit organization contracting with 3 multi-specialty physician groups in Northern California
  - Physician-specific P4P was implemented at one of 3 groups, Palo Alto Medical Clinic (PAMC)
- PAMC
  - Covering 3 counties with 5 sites
  - 750,000 patient visits/year

P4P Design

- Physician-specific P4P
- Primary care physicians
  - Family Medicine , Internal Medicine, or Pediatrics
- Development of incentive scheme
  - PAMF stakeholders participated in the process of determining performance measures and incentive formula
- Frequency of payment and performance reporting:
  - Physicians were randomly assigned to either quarterly bonus (max. $1,250) or year-end bonus (max. $5000)
  - Quarterly report of performance scores provided to both groups via email

Quality Measures

Quality metrics	Description	Category
For Adults		
Diabetes glyco ctrl	HgBA1C < 7 (diabetes patients)	Outcome
Diabetes BP ctrl	blood pressure <130/80 (diabetes patients)	Outcome
Diabetes LDL ctrl	LDL <100 (diabetes patients)	Outcome
Asthma Rx	Long-term controller prescribed (asthma patients)	Process
BMI measured	Height and weight measured	Process
Chlamydia	Chlamydia testing done (eligible women)	Process
Colon cancer screen	Colon cancer screening complete (adults age 50+)	Process
PAP	Cervical cancer screening (eligible women)	Process
For children or adolescents		
Vision check 3yo	Vision checked (within 3 months of 3rd birthday)	Process
BP check 3yo	Blood pressure check (within 3 months of 3rd birthday)	Process
Tobacco history	Tobacco use history recorded (adolescents)	Process
Newborn seen	Newborns seen (within 8 days of birth)	Process
Varicella	Varicella immunization complete (2 year olds)	Process
Ritalin user BP check	Current BP checked for patients on Ritalin-like drugs	Process
LDL check for high BMI	LDL checked for adolescents with high BMI	Process

Incentive Formula

- Incentive payment =
  percentage score * maximum amount
- Percentage score =
  sum of achieved points / maximum possible points
- Maximum possible points =
  3 * number of qualifying metrics
  - Points (max 3) are based on a step function: 1: minimum performance goal; 3: stretch goal; 2: in between; Goals were set by consensus with Department Chairs based on the previous year's performance.
  - Measures with 5 or fewer eligible patients for a

Results

Participating Physicians

Number of physicians with any qualifying metrics

	Quarter 1	Quarter 2	Quarter 3
	165	164	160
By payment frequency			
Quarterly bonus	77	76	75
Year-end bonus	88	88	85
By department			
FAMP	68	66	62
GMED	56	56	55
PEDS	41	42	43

Percentage Scores

Quality metric (adults)	Average	Q1	Q2	Q3
Diabetes glyco ctrl	61	60	60	63*
Diabetes BP ctrl	53	51	53	55*
Diabetes LDL ctrl	60	57	61	62*
Asthma Rx	92	92	92	93
BMI measured	72	71	72	74
Chlamydia	37	36	38	38
Colon cancer screen	47	45	47	48*
PAP	78	77	79	80
Percentage score †	52	50	53	52

* $p<0.05$ of the difference between Q1 score and Q3 score
† based on all qualifying metrics including pediatric metrics

Comparison of Quarter/year Group

Quality metrics (adults)	Quarter 1		Quarter 3	
	Qtr	Yr	Qtr	Yr
Diabetes glyco ctrl	61	60	64	63
Diabetes BP ctrl	49	51	55	54
Diabetes LDL ctrl	58	57	62	62
Asthma Rx	94*	91	93	92
BMI measured	67*	75	70*	78
Chlamydia	36	36	37	39
Colon cancer screen	44	45	48	49
PAP	76	78	79	80

* $p<0.05$ of the difference between two groups, based on t-statistics

Summary of Findings

- A steady increase in scores over the 3 quarters
-
- Improvement in all 3 outcome measures (for diabetic patients) and 1 procedure measure (colon cancer screening)
- No difference in the scores or in the change in scores between quarterly and annually paid groups.
- Anecdotal evidence suggests that

Future Analyses

- Effect of physician-specific P4P as compared to group level P4P with pre-baseline and complete 4 quarters data
- Specific physician and group characteristics related to responsiveness to P4P
- Spillover effect of P4P on quality dimensions that were not incentivized

Conclusion

- Physician-specific P4P incentives, developed with the input from participating physicians, appear to improve indicators of ambulatory care quality, at least for the dimensions tied to the incentives.
- However, the frequency of payment itself, with no difference in the overall amount of being paid or in the frequency of reminder or reporting of performance score, may not make a substantial difference in

Panel 2 – Findings from BTE research

Recognized physicians deliver better quality care:

- Their submission and scoring of medical record data suggests that, and it has been confirmed looking at their scores on claims-based quality measures
- The better quality is evident in Diabetes care and overall as per the scores on different preventive care measures

Recognized physicians deliver lower cost of care:

- The average savings for physicians recognized under the Diabetes Care Link is $400 per patient per year. This has come mostly by looking at "price-neutralized" claims. Some physician groups may be inefficient if their negotiated fee schedules are very high
- The average savings for physicians recognized under the Physician Office Link is $245 per patient per year

$$NPV = \sum_{i=1}^{n} \frac{((\mathbf{DBP} + \mathrm{IDP}) \times (\mathrm{NP_i} - \mathrm{P_i})) - (\mathrm{R} \times \mathrm{NP_i}) - (\mathrm{VC_i} + \mathrm{FC_i})}{(1 + rate)^i}$$

Three-year study shows POL-recognized physicians are top performers

- POL-recognized physicians have lower ($579 v. $695 -- $116 in savings) average episode costs across all episodes and patients than a comparison group. The average savings per patient is $245 per year (2.11 episodes * $116)
- POL-recognized physicians also show lower variation in total episode costs
- POL-recognized physicians have better quality scores and lower variation in those scores than the comparison group

Primary Care Providers	Recognized	Comparison
Avg episodes/patient	2.11	2.22
Std deviation	1.74	1.88
Min	1	1
Max	25	30
Avg repriced cost / episode	$579	$695
Std deviation	$1,967	$2,441

POL Study Group	Recognized	Comparison
- Cervical Cancer Screening	**89%**	**85%**
Std Dev	8%	10%
- HbA1c testing	**87%**	**82%**
Std Dev	11%	13%
- Lipid panel: CHD 382: CHD_ lipid_PQP	**90%**	**86%**
Std Dev	8%	12%
- Lipid panel: Hypertension 12: HTN_lipid panel_PC	**44%**	**44%**
Std Dev	15%	17%

Source: Mercer, 2007

$$NPV = \sum_{i=1}^{n} \frac{((\mathbf{DBP} + IDP) \times (NP_i - P_i)) - (R \times NP_i) - (VC_i + FC_i)}{(1 + rate)^i}$$

Cost - Quality Relationships

BTE-DCL recognized physicians study

Ingenix study - areas of opportunity

- Geographic areas
- Physician types

BTE: Bridges to Excellence
DCL: Diabetes Care Link

First Study: Methodology

- DCL recognized physicians were compared with DCL non-recognized physicians in the Louisville Cincinnati area five years after launch of the BTE program
- Both PCPs (primary care) and Endocrinologists were evaluated
- Diabetes related costs were evaluated using ETG® methodology to study the costs of care of diabetic episodes
- Physicians were attributed an episode of diabetes if they were responsible for >25% of costs of diabetic care for a given patient – therefore more than one physician could be responsible for a given episode

BTE: Bridges to Excellence
DCL: Diabetes Care Link
ETG®: Episode Treatment Grouper

ETG Grouping & Physician Attribution

Cincinnati, OH & Louisville, KY Markets Combined Description	Member Count	Episode Count
Total Members	352,722	
less: Members Without Claims	(18,451)	
less: Members With Signif COB (COB ≥ 20% Allowed)	(45,219)	
Total Members Processed Through ETG Application	289,052	2,153,532
Total Diabetics/Diab Episodes	14,489	22,681
less: Low Outlier Episodes (≤ $20 total allowed)	(1,178)	(1,986)
less: Members without Minimum 9 Months Medical Coverage	(3,276)	(5,685)
Final Member & Episode Counts--After Physician Attribution & matching providers in Master Physician List	7,305	9,958

- Over 1.7 million claims were studied using UnitedHealthGroup data
- Episodes grouped by ETG® Annual file methodology
- Approx. 50% Members had no Pharmacy Costs - all Pharmacy costs excluded from cost calc.
- Claims Incurred 10/1/02 - 9/30/04; Paid Through 12/31/04
- Diabetes-Related Episodes with ETGs 0027, 0028, 0029, 0030, 0222, 0223 & 0224

Physician Details

Physician Description	Nbr of Physicians	Nbr of Recog Phys	Nbr of Non-Recog Phys
Endocrinologists	43	16	27
PCP (primary care providers)	1,260	50	1,210
Totals after low outliers (<=$20 total allowed) removed	**1,303**	**66**	**1,237**
Less: Unmatched Physicians	(142)	(7)	(135)
less: Phys Without Diabetic Episodes	(149)	(2)	(147)
Phys With Diabetic Episodes	1,012	57	955
After Attribution (Using Costs With Inpatient Included):	**998**	**57**	**941**
Endocrinologists	39	14	25
PCP (primary care providers)	959	43	916

Summary Statistics (Total Costs)

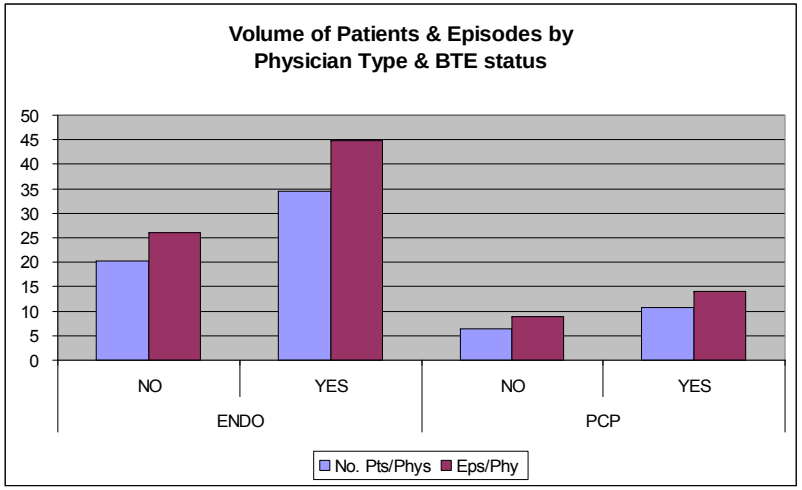
Total Costs By Episode					
Specialty Category	DCL Recognized	No. of Episodes	Mean	Std Dev	p-value
ENDO	NO	653	1,140.34	2,813.54	
ENDO	YES	627	768.99	1,114.52	p=0.0018
PCP	NO	8,077	451.30	1,790.17	
PCP	YES	601	433.32	600.81	p=0.5692
	Total Episodes	9,958			

BTE certified endocrinologists have significantly lower costs for diabetic care than non-certified endocrinologists

Costs/Eps					
Total Costs By Physicians					
Specialty Category	DCL Recognized	No. of Physicians	Mean	Std Dev	
ENDO	NO	25	2,446.18	3,476.96	
ENDO	YES	14	840.74	382.68	p=0.0311
PCP	NO	916	529.90	1,430.60	
PCP	YES	43	424.63	188.94	p=0.0579
	Total Providers	998			

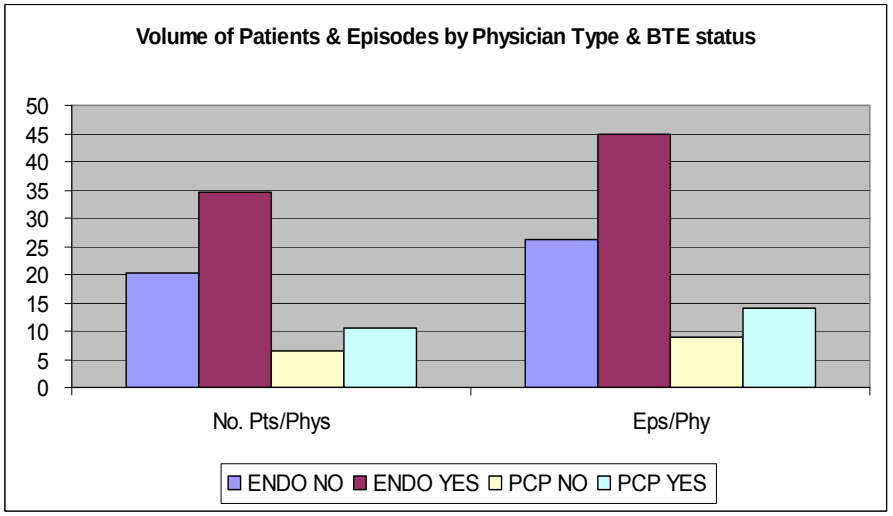
Total Costs By Member					
Specialty Category	DCL Recognized	No. of Members	Mean	Std Dev	
ENDO	NO	504	1,450.86	3,193.26	
ENDO	YES	484	982.63	1,310.97	p=0.0025
PCP	NO	5,858	573.78	1,780.95	
PCP	YES	459	561.72	722.31	p=0.7685
	Total Members	7,305			

Volume of Diabetic Cases Seen by BTE Certified Physicians vs. Non-certified Physicians

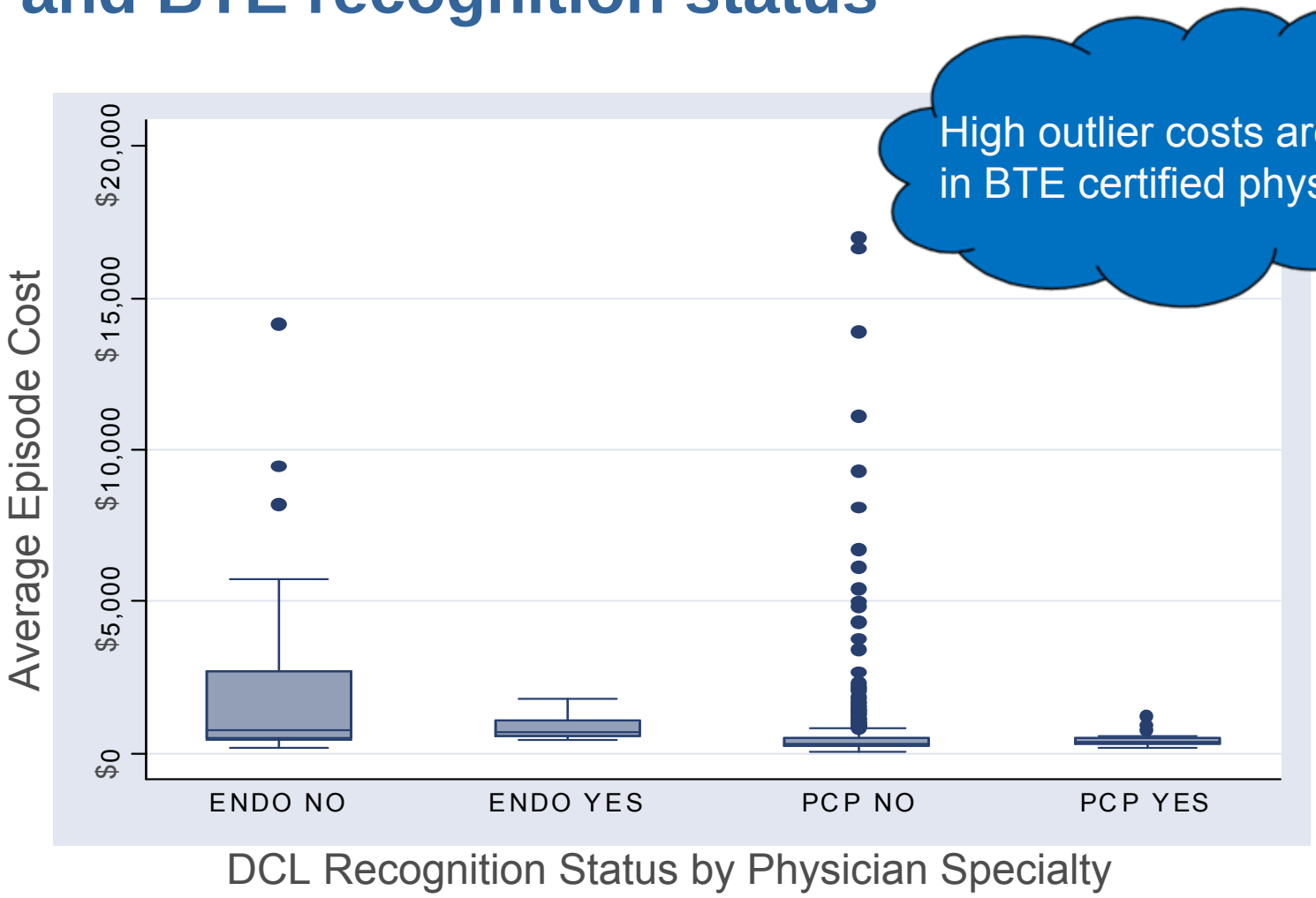


BTE certified Physicians take care of more episodes and more patients per physician

There was no difference in ERG risk scores among patients seen by DCL certified vs. non-certified physicians

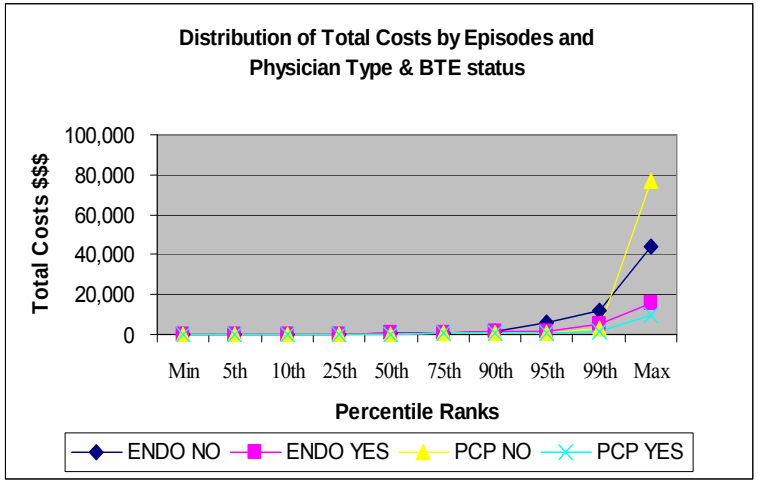


Average episode costs by Physician type and BTE recognition status

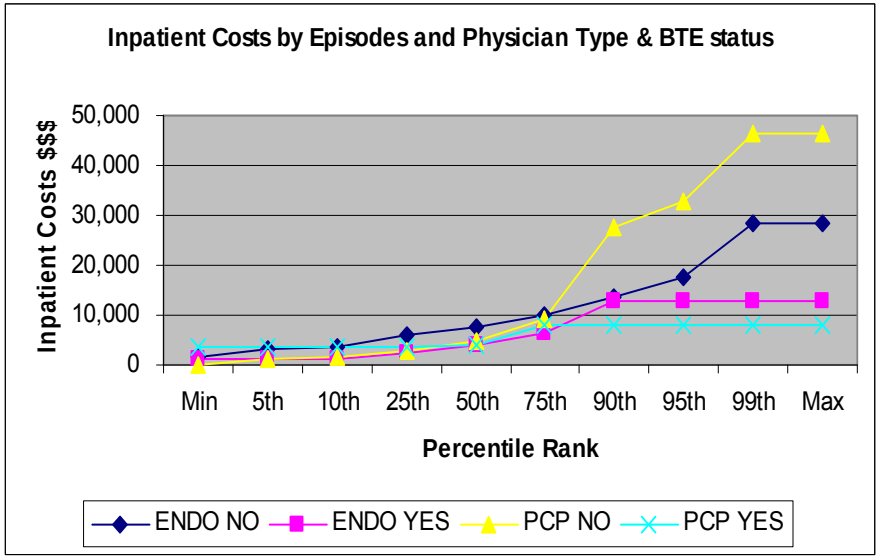


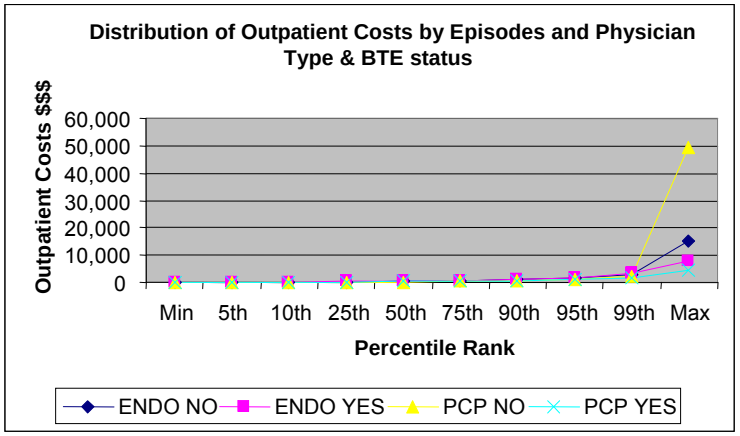
Source: Ingenix, 2006-2007

Distribution of Diabetic Episode Costs



Most savings are due to low inpatient costs by BTE certified physicians
- Less inpatient stays
- Decreased average cost per stay





Conclusions from the BTE-Ingenix Study

Average annualized costs for diabetic care by BTE certified endocrinologists was $370 less than for non-BTE endocrinologists ($770 vs. $1140).

The variance amongst the BTE certified physicians was much lower than amongst the non- BTE certified physicians

Cost savings were due to decreased inpatient costs amongst BTE certified physicians

- $3,480 savings for endocrinologists: $8,304 vs., $4,826
- $3,820 savings for PCPs: $9,090 vs. $ 5,280

Most savings are due to:

- Low inpatient costs by BTE certified physicians
- Less inpatient stays
- Decreased average cost per stay

The average outpatient costs were slightly higher in BTE certified physicians

- $50 more for endocrinologist: $707 vs. $657
- $20 more for PCPs: $407 vs. $382

$$NPV = \sum_{i=1}^{n} \frac{((\mathbf{DBP} + \mathrm{IDP}) \times (\mathrm{NP_i} - \mathrm{P_i})) - (\mathrm{R} \times \mathrm{NP_i}) - (\mathrm{VC_i} + \mathrm{FC_i})}{(1 + rate)^i}$$

Second Study: Methodology

We focused on endocrinologists and PCPs caring for Diabetes across USA

Large national commercial claims database: over 260 million medical claims, 17 million covered lives

Claims: Jan 1, 2004 through Dec 31, 2005 paid until March 31, 2006

Annual file methodology to group claims into episodes using the episode treatment grouper (ETGs®)

Episodes attributed to physicians if they cared for >25% of episode clusters or were responsible for >25% of episode professional costs

Second Study: Methodology (contd.)

All episode costs were based on “allowed” amounts (reimbursed + member)

Each episodes costs were risk-adjusted based on specialty type, geographic area and presence or absence of pharmacy claims

Episodes in the bottom 5th percentile and top 95th percentile for episode costs were truncated from the data to exclude outliers

Episodes were passed through EBM connect® software to measure a quality score based on compliance to published guidelines

EBM = Evidence-based-medicine

Quality EBM Scores: Example of Rules

Physician: Dr. Jones
MPIN: 987654

DIABETES MELLITUS				
Rule Type	**Description of Clinical Measure**	**Compliant**	**Eligible**	**Compliance Rate**
Published Guideline	Patient(s) that had at least 2 hemoglobin A1C tests in last 12 reported months.	80	100	80%
Published Guideline	Patient(s) that had an annual screening test for diabetic nephropathy.	70	100	70%
Published Guideline	Patient(s) that had an annual screening test for diabetic retinopathy.	40	100	40%
Published Guideline	Patient(s) with a diagnosis of diabetic nephropathy, proteinuria or chronic renal failure that are prescribed an ACE-inhibitor or angiotensin receptor antagonist.	15	30	50%
Safety	Patient(s) taking an ACE-inhibitor or angiotensin receptor antagonist that had an annual serum potassium (K+) test	15	20	75%
Safety	Patient(s) taking biguanide (e.g. metformin) containing medications, ACE-inhibitor or angiotensin receptor antagonist that had an annual serum creatinine (Cr) test.	25	40	63%
Care Pattern	Patient(s) that had an LDL cholesterol in last 12 reported months.	60	100	60%
Care Pattern	Patient(s) with most recent LDL result >=100mg/dL.	45	100	45%
Care Pattern	Patient(s) with an HDL cholesterol test in last 12 reported months.	60	100	60%
Care Pattern	Patient(s) with the most recent HDL result <=40mg/dL.	50	100	50%

EBM = Evidence-based-medicine

Risk-adjusted costs for Diabetes Care (USA)

Specialty Category	EBM Score >75	Number of Physicians	Number of Episodes	Eps / MD	TOTAL COSTS			COST SAVINGS
					Mean	Std Dev	p-value	
ENDO (USA)	NO	968	60,347	62	$1,857	$364	t=4.31	Average = $62 / eps
ENDO (USA)	YES	1,146	131,553	115	$1,795	$284	p=0.000	Total = $3.74M
PCP (USA)	NO	21,419	487,157	23	$904	$266	t= -5.451	
PCP (USA)	YES	18,904	533,235	28	$918	$237	p=0.000	Average = -$14 / eps

EBM = Evidence-based-medicine

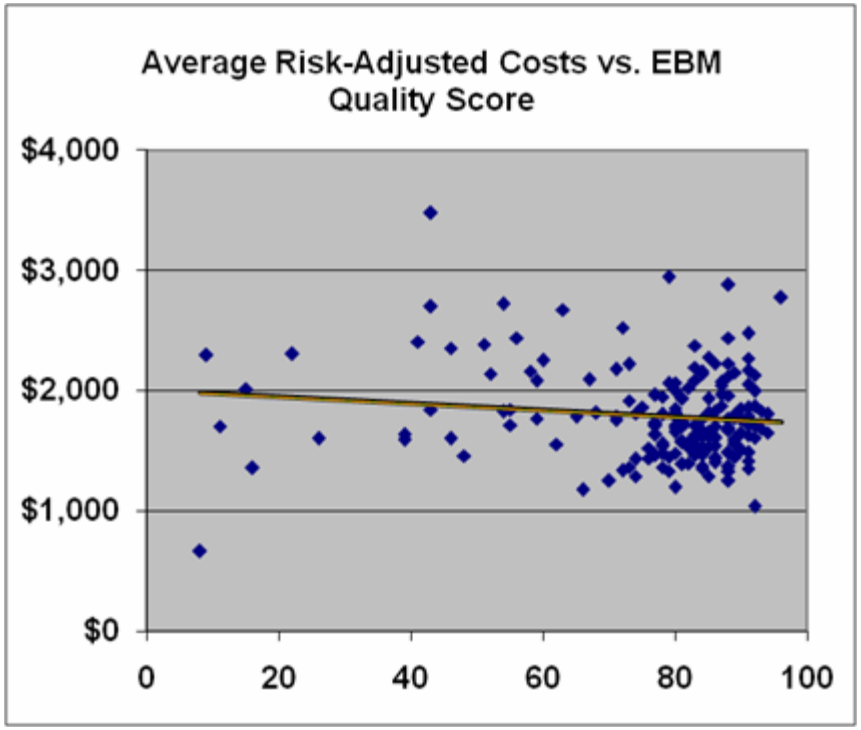
- Dataset had 296,855 physicians caring for 69.6 million episodes
- Diabetic episodes (ETGs 027-030) selected

  2,114 Endocrinologists treating 191,900 diabetic episodes

  41,283 PCPs treating 1,0744,447 diabetic episodes

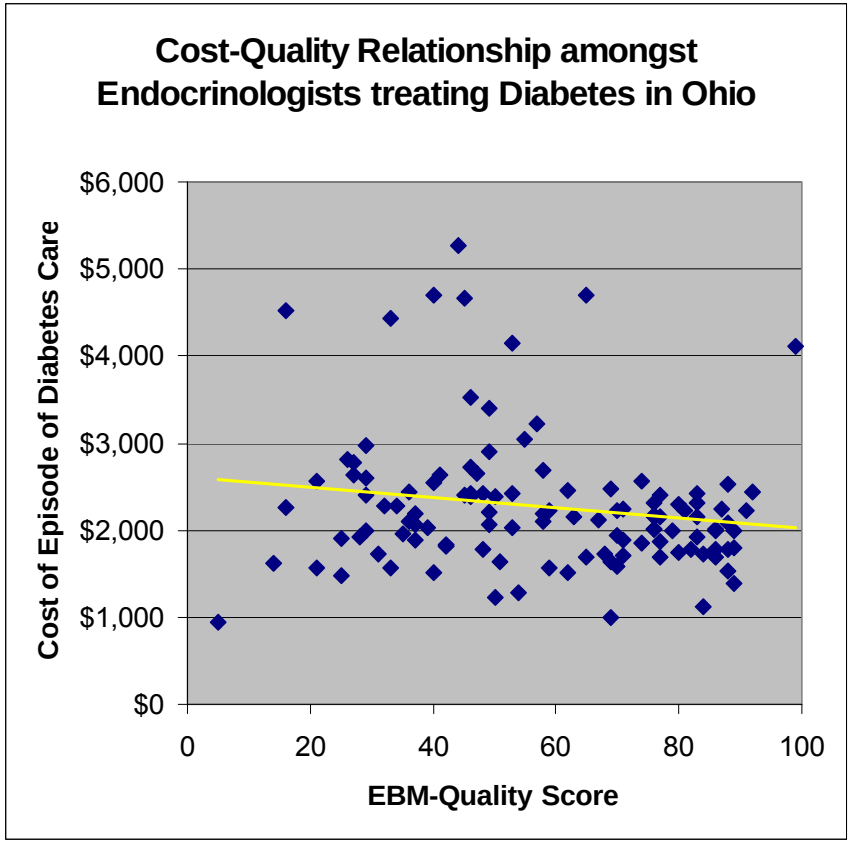
Trend Analysis helps identify Opportunity in various states

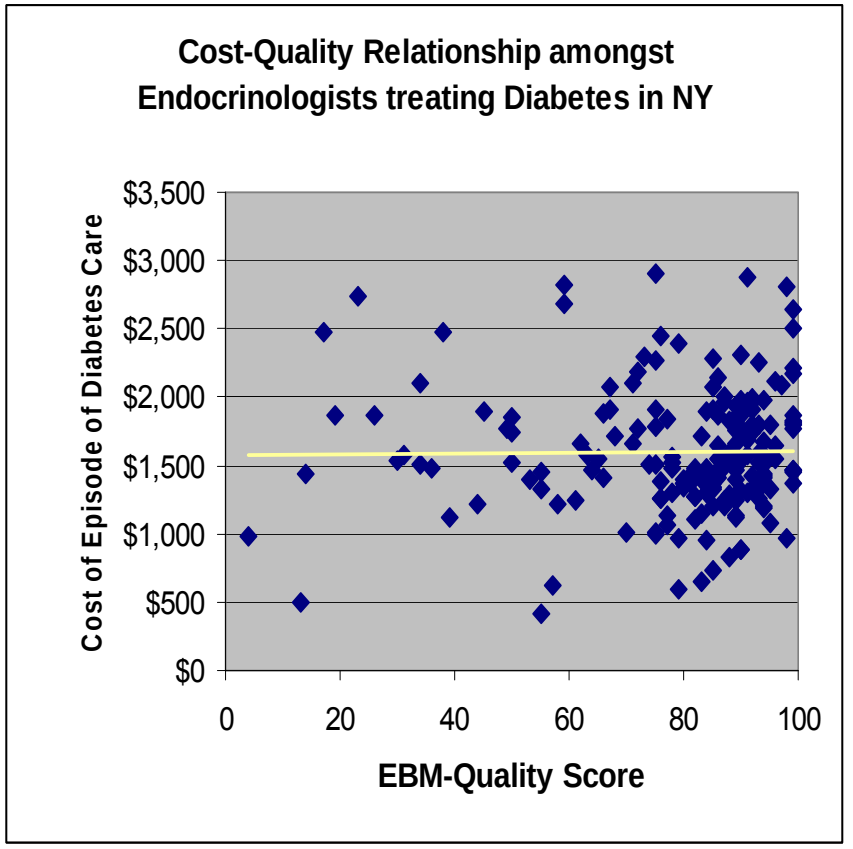
Endocrinologists in Texas – Diabetes Care



EBM Score	≤ 75	>75	Savings
Average Annual Cost	$1,912	$1,710	$202
Number (%) of physicians	46 (26.7%)	126 (73.3%)	
Number (%) of episodes	3,488 (11.4%)	27,180 (88.6%)	$704,576

Program opportunity comparison





Risk Adjusted Cost of Diabetes Care (States)

Specialty Category	EBM Score >75	Number of Physicians	Number of Episodes	Eps / MD	TOTAL COSTS			COST SAVINGS
					Mean	Std Dev	p-value	
ENDO (TX)	NO	48	3,496	73	$1,913	$420	t=3.9015	Average = $203 / eps
ENDO (TX)	YES	130	27,192	209	$1,710	$255	p=0.0001	Total = $709,513
ENDO (OH)	NO	80	6,403	80	$2,180	$593	t=1.5917	Average = $130 / eps
ENDO (OH)	YES	35	6,016	172	$2,051	$281	p=0.1143	Total = $831,558
ENDO (NY)	NO	52	1,814	35	$1,595	$386	t=1.2952	Average = $74 / eps
ENDO (NY)	YES	132	6,938	53	$1,521	$332	p=0.1969	Total = $133,928

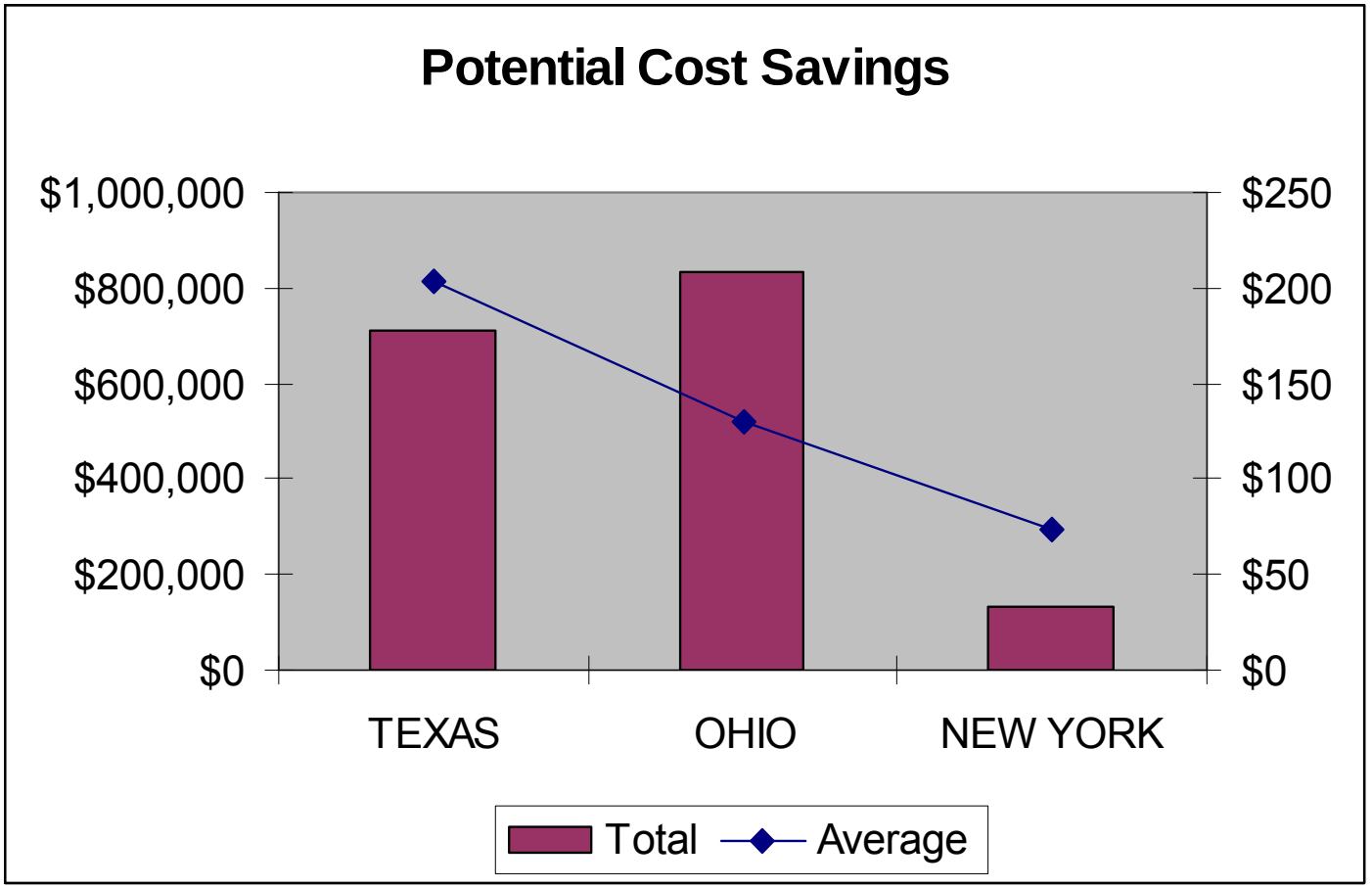
Opportunity for Cost Savings

	# (%) Physicians with EBM < 75	# (%) Episodes at Risk	COST SAVINGS	
			Average	Total
TEXAS	48 (27%)	3,496 (11%)	$203	$709,513
OHIO	80 (70%)	6,403 (52%)	$130	$831,558
NEW YORK	35 (28%)	1,814 (21%)	$74	$133,928
ALL OF USA	968 (46%)	60,347(31%)	$62	$3,741,514

The total potential cost savings is a function of the average cost savings and the number of episodes treated by low performing physicians

$$NPV = \sum_{i=1}^{n} \frac{((\mathbf{DBP} + IDP) \times (NP_i - P_i)) - (R \times NP_i) - (VC_i + FC_i)}{(1 + rate)^i}$$

Conclusion: ROI varies based on average cost savings and episodes at risk



$$NPV = \sum_{i=1}^{n} \frac{((\mathbf{DBP} + \mathrm{IDP}) \times (\mathrm{NP_i} - \mathrm{P_i})) - (\mathrm{R} \times \mathrm{NP_i}) - (\mathrm{VC_i} + \mathrm{FC_i})}{(1 + rate)^i}$$

Practice Re-engineering

Evidence from the field

MA, NY

Study Objectives

- Explore BTE programs' impact on the relationship between care transformation, improved patient care, and decreased health expenditures
- Goals:
  - Investigate the link between BTE program participation and subsequent practice transformation
  - Investigate the role BTE incentives play in the practice re-engineering process

Practice Transformation survey results

- Participation process catalyzed improvement
- It drives a “chain reaction” of care process change and quality improvement effort
- Obstacles Remain:
  - Effort required for change is not always appreciated by staff
  - Differences in participants interpretation of the standards/benchmarks
  - Sustaining positive changes is difficult

Physician Remarks

- Many physicians began the long processes required for meaningful practice transformation:
  - “We are making constant incremental changes”
- Many practices also noted the positive impacts of these transformations:
  - “EHR is better for the staff -- less falls through the cracks; helps with follow-ups, better than memory”
- Most physicians noted the costs of transformation, but acknowledged that BTE was an important step:
  - “Someone ultimately has to pay, and I support BTE”

Lessons Learned

Financial incentives are a strong motivator: but must remain consistent to promote sustainable change

Rewards provide a strong catalyst for transforming care processes: when rewards are high enough

Practices actively make process improvements in what they perceive to be a P4P environment

Transformation process is financially difficult for practices: and while rewards help, they were sometimes perceived to be too small to sustain most practice improvements by themselves

P4P is one piece of the puzzle: in most cases practice staff recognize BTE as one of many motivators driving their practice transformation

P4P quality goals set the standard so keep them high: it promotes a culture of progress and continuous improvement

Costs (financial and personnel) limit participation: the application process is cumbersome and is expensive on face value and to execute

Next Steps for Analysis

- Cost structure of practice transformation:
  - What practice characteristics impact the cost of transformation, and how large are these factors?
- Timeline of practice transformation:
  - How long do practice transformations take for completion, and how quickly do these changes yield clinical impacts?
- Alignment of other payors:
  - When will other payors form a critical mass of incentives, and how might Medicare change the landscape?

Stretch Break – Ten Minutes

Optimizing the ROI – Summary of what we've learned to this point

$$NPV = \sum_{i=1}^{n} \frac{((DBP + IDP) \times (NP_i - P_i)) - (R \times NP_i) - (VC_i + FC_i)}{(1 + rate)^i}$$

The greater the benefits, the faster the equation becomes positive – Understand the value dividends available in your community

The greater the number of patients going to high-performers, the faster the equation becomes positive – (1) create a big enough pool of high-performers to care for your plan members, and (2) manage incentives to move market share

Physicians respond to incentives, but they have to be meaningful.

Meaningful….some concepts

Physicians perform “ROI” calculations as well – if you had to invest $25,000 to get $5,000, would you make the investment?

- The benefits have to be at least within reach of the expenses
- The benefits have to be predictable or they will be discounted
- The benefits have to be achievable or they will be ignored

It takes $2,000 per physician to get 20% of the physicians recognized for delivering good care to diabetics.

It takes ten times as much to get 20% of the physicians to get recognized for adopting and using good systems and processes of care on all patients.

How much is enough? It depends….

"Critical Mass" Analysis

Based on BTE data

11,102 total physicians

- 9,368 primary care physicians
- 1,734 specialists

Boston, Capital Region of NY, Louisville, Cincinnati

Year 2 of P4P Program…the "good guys" are already in.

$$NPV = \sum_{i=1}^{n} \frac{((DBP + IDP) \times (\mathbf{NP_i} - P_i)) - (R \times \mathbf{NP_i}) - (VC_i + FC_i)}{(1 + rate)^i}$$

Averages may mean little . . .

How can we predict the number of doctors who will respond to P4P rewards?

Hypothetical:

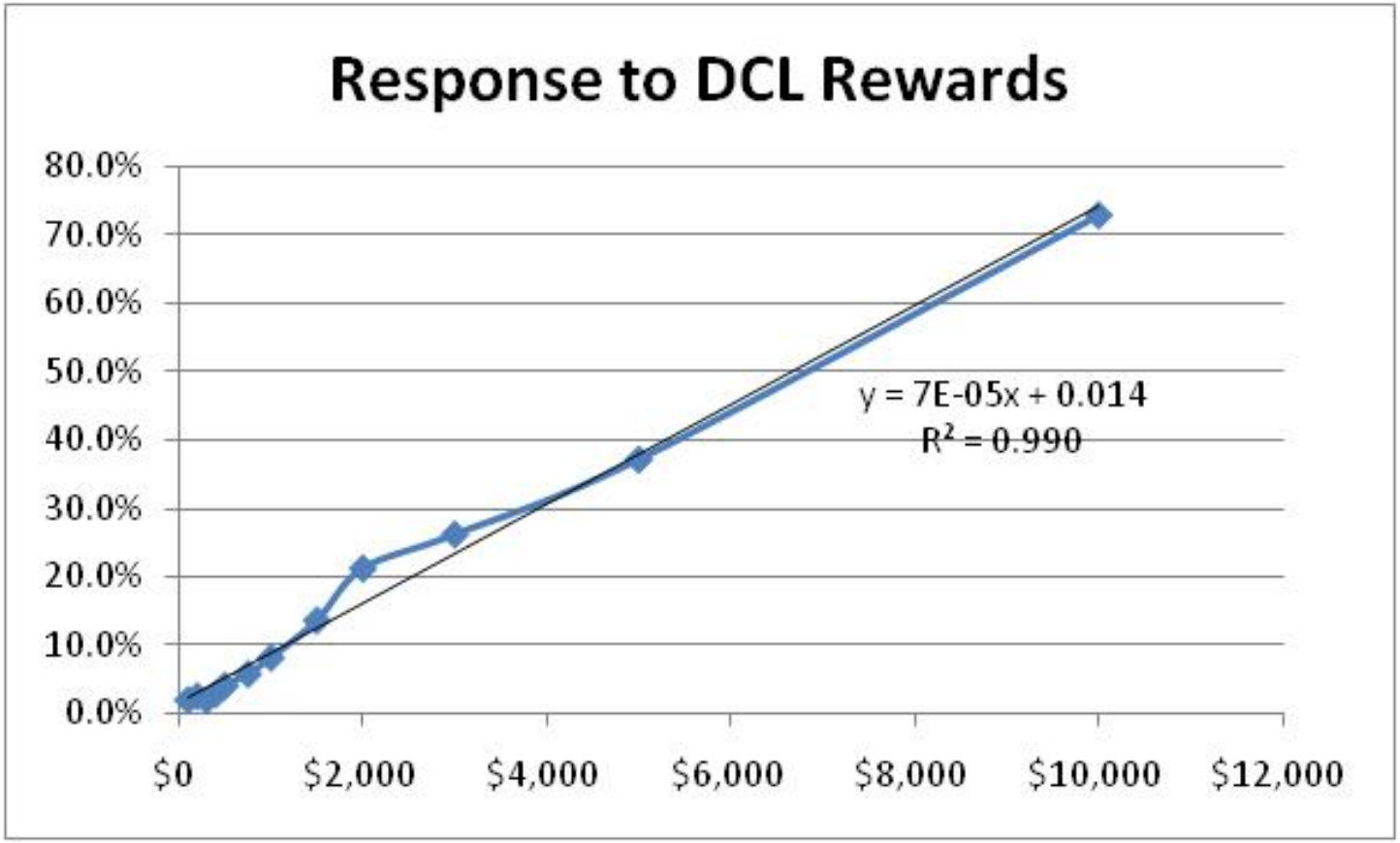
- Physicians require an average reward of $2,000 to improve care and seek P4P recognition
- The average reward offered is $1,000
- How many doctors will get recognized?

$$NPV = \sum_{i=1}^{n} \frac{((DBP + IDP) \times (\mathbf{NP_i} - P_i)) - (R \times \mathbf{NP_i}) - (VC_i + FC_i)}{(1 + rate)^i}$$

Distribution of Patients/Rewards

$$NPV = \sum_{i=1}^{n} \frac{((DBP + IDP) \times (\mathbf{NP_i} - P_i)) - (R \times \mathbf{NP_i}) - (VC_i + FC_i)}{(1 + rate)^i}$$

Probability of Physician Recognition – Diabetes Care Link



$$NPV = \sum_{i=1}^{n} \frac{((DBP + IDP) \times (\mathbf{NP_i} - P_i)) - (R \times \mathbf{NP_i}) - (VC_i + FC_i)}{(1 + rate)^i}$$

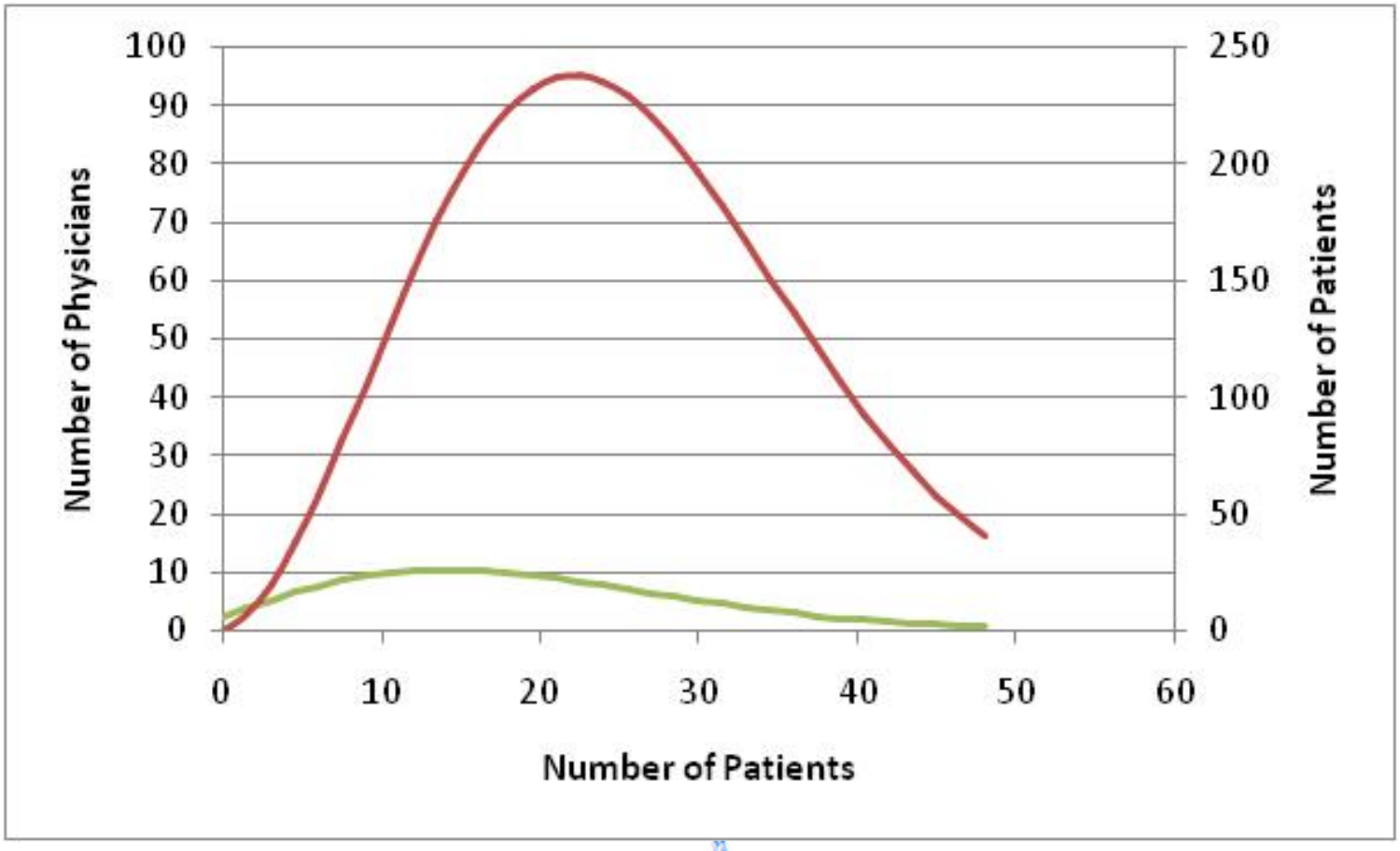
We can match the two curves . . .

$$NPV = \sum_{i=1}^{n} \frac{((DBP + IDP) \times (\mathbf{NP_i} - P_i)) - (R \times \mathbf{NP_i}) - (VC_i + FC_i)}{(1 + rate)^i}$$

. . . And multiply to get a prediction.

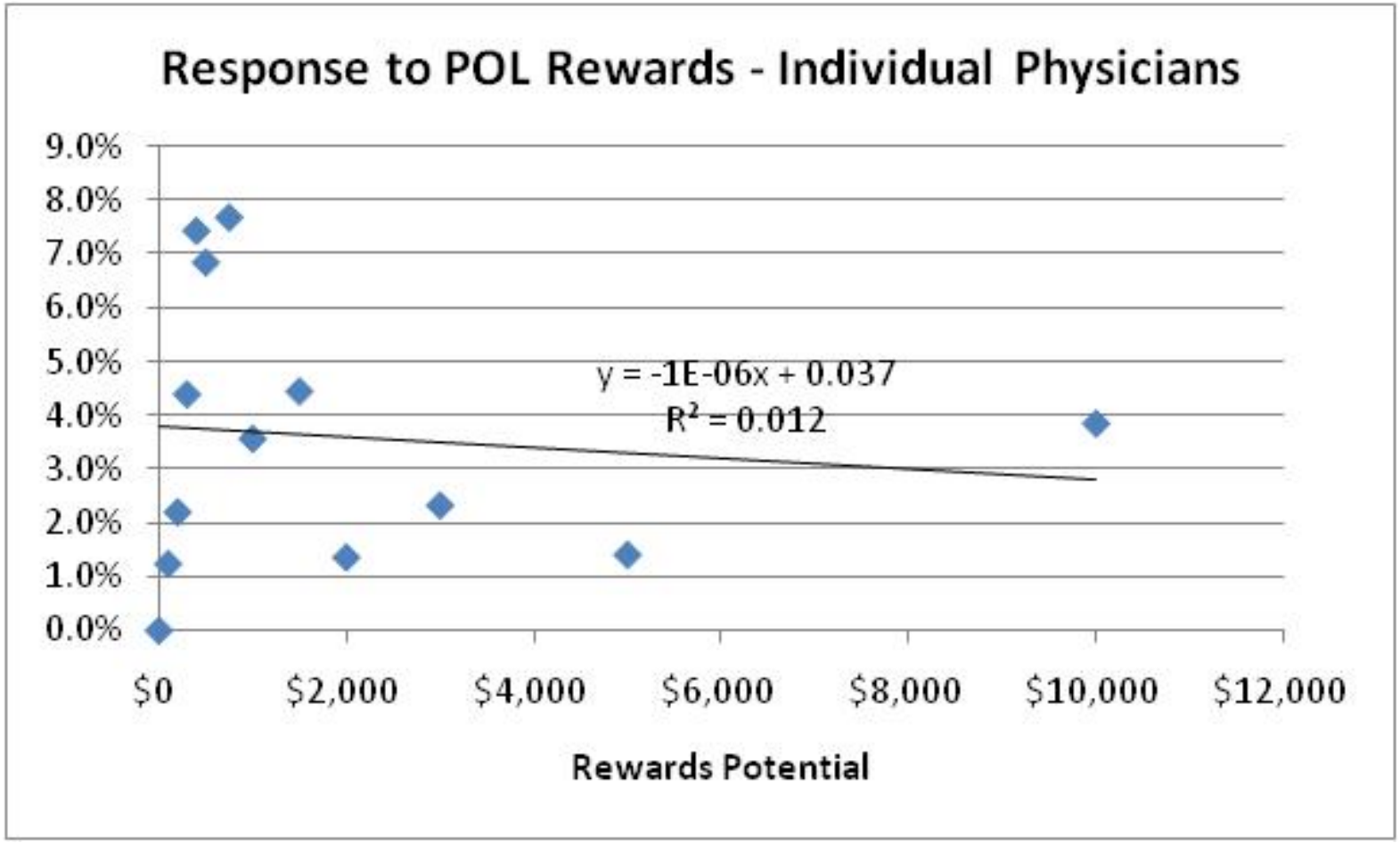
$$NPV = \sum_{i=1}^{N} \frac{((DBP + IDP) \times (\mathbf{NP_i} - P_i)) - (R \times \mathbf{NP_i}) - (VC_i + FC_i)}{(1 + rate)^i}$$

Now we can solve for NP – the number of patients benefiting from P4P

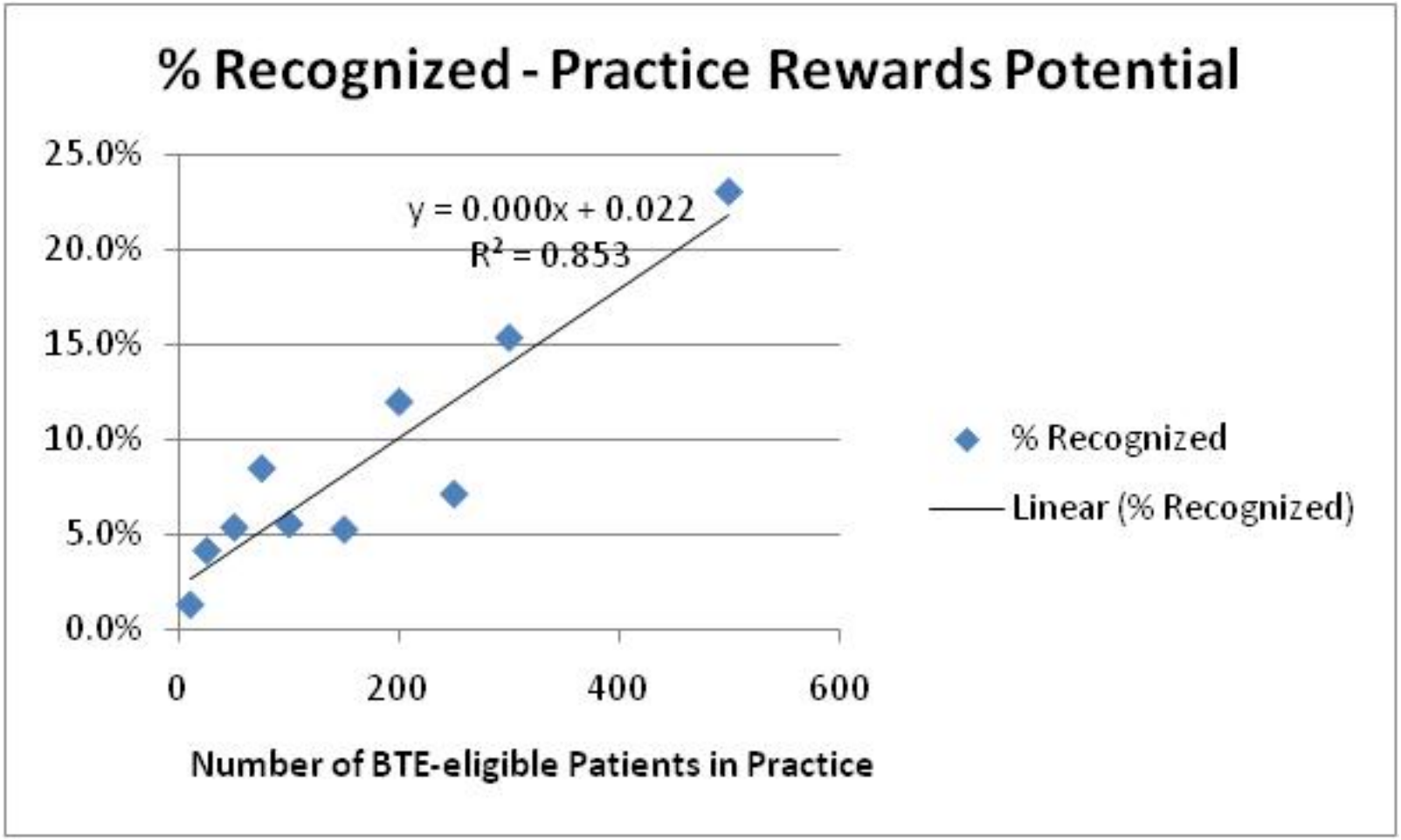


$$NPV = \sum_{i=1}^{N} \frac{((DBP + IDP) \times (\mathbf{NP_i} - P_i)) - (R \times \mathbf{NP_i}) - (VC_i + FC_i)}{(1 + rate)^i}$$

The Physician Office Link response shows a different pattern



And the pattern changes depending on the unit of analysis (group-level)



Are we simply rewarding the “already good”?

Yes in Year 1, no in subsequent years:

- The relationship between total rewards potential and recognition is weak in Year 1, stronger in Years 2 and beyond
- High reward practices don’t all get recognized in Year 1, quite the contrary
- In MN, where everyone is above the national average, only 10% of the practices were able to meet the “defect-free” quality criteria in Year 1

$$NPV = \sum_{i=1}^{n} \frac{((DBP + IDP) \times (NP_i - \mathbf{P_i})) - (R \times NP_i) - (VC_i + FC_i)}{(1 + rate)^i}$$

Defining incentives and rewards

BTE's regional implementations fixes an amount per patient as a standard reward.

- Provides simplicity in total rewards calculation for each doctor – predictable and quantifiable

Network-wide plan-based implementations use mostly fee-schedule formulae – sliding scale of increases based on sliding scale of performance scores

- Provides plans with more flexibility in contracting and rewarding providers

$$NPV = \sum_{i=1}^{n} \frac{((\mathrm{DBP} + \mathrm{IDP}) \times (\mathrm{NP}_i - \mathrm{P}_i)) - (\mathbf{R} \times \mathrm{NP}_i) - (\mathrm{VC}_i + \mathrm{FC}_i)}{(1 + rate)^i}$$

Variable costs of program implementation

Coalition or regional efforts:

- Data aggregation fees
- Communication expenses
- Public reporting expenses
- Organizational expenses

Plan-based efforts:

- P4P fees

Leverage existing efforts:

- Aligning Forces for Quality – already funded by RWJF
- Better Quality Information for Medicare Program – supported by CMS

Focus on sourcing specifications in your RFI

$$NPV = \sum_{i=1}^{n} \frac{((\mathrm{DBP} + \mathrm{IDP}) \times (\mathrm{NP_i} - \mathrm{P_i})) - (\mathrm{R} \times \mathrm{NP_i}) - (\mathbf{VC_i} + \mathrm{FC_i})}{(1 + rate)^i}$$

Fixed costs of programs

Plan member/employee communications and activation

Organizational commitment and resources to maximize the R – get more physicians engaged, get more patients to recognized physicians

$$NPV = \sum_{i=1}^{n} \frac{((DBP + IDP) \times (NP_i - P_i)) - (R \times NP_i) - (VC_i + \mathbf{FC_i})}{(1 + rate)^i}$$

Arriving at a discount rate…

Important to recognize that P4P programs play out over time

The discount rate could be the same as the company-wide discount rate, the plan/employer's rate of healthcare cost increases, or the "risk-free" rate.

The discount rate should also be increased to reflect any risk inherent to the program – benefits difficult to quantify because of healthy population, network already high-performing, etc..

$$NPV = \sum_{i=1}^{n} \frac{((DBP + IDP) \times (NP_i - P_i)) - (R \times NP_i) - (VC_i + FC_i)}{(1 + rate)^i}$$

Optimizing the ROI Equation

Minimizing program costs . . .

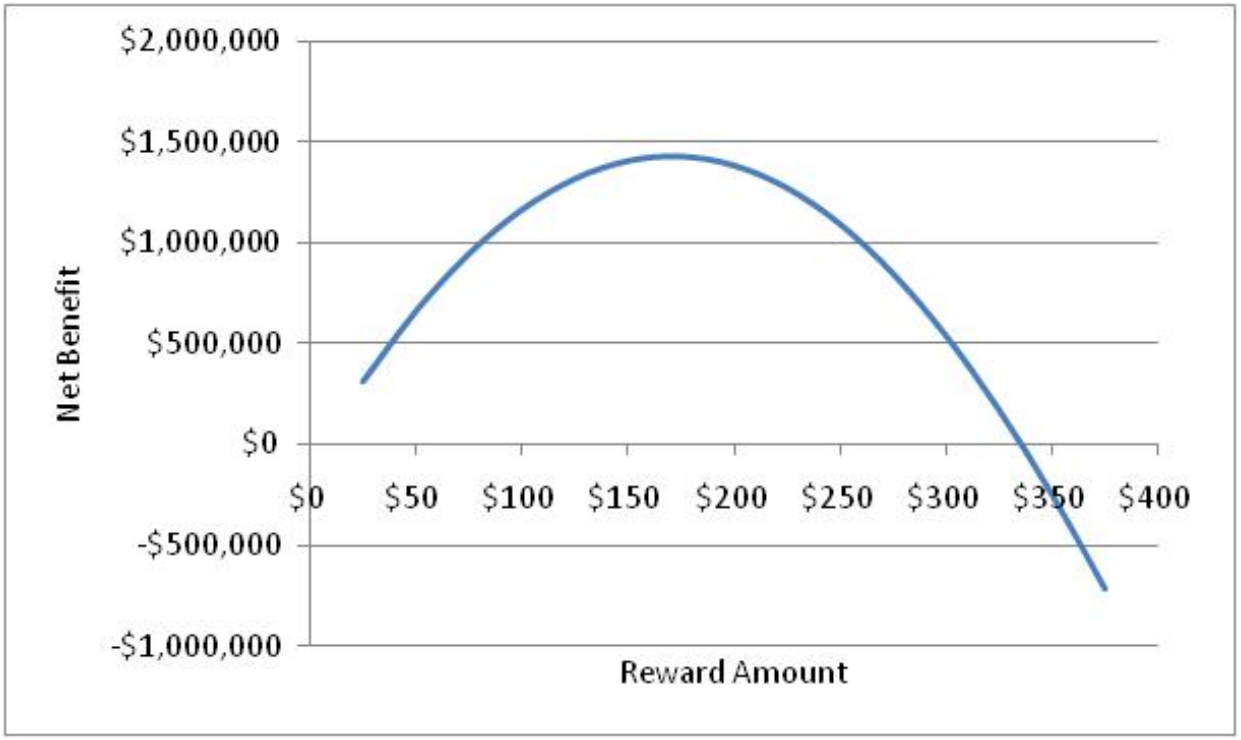
Incorporating Rewards as a core component of physician compensation . . .

Building programs that send a consistent message to the physician community . . .

Working together . . .

$$NPV = \sum_{i=1}^{n} \frac{((\mathrm{DBP} + \mathrm{IDP}) \times (\mathrm{NP_i} - \mathrm{P_i})) - (\mathrm{R} \times \mathrm{NP_i}) - (\mathrm{VC_i} + \mathrm{FC_i})}{(1 + rate)^{i}}$$

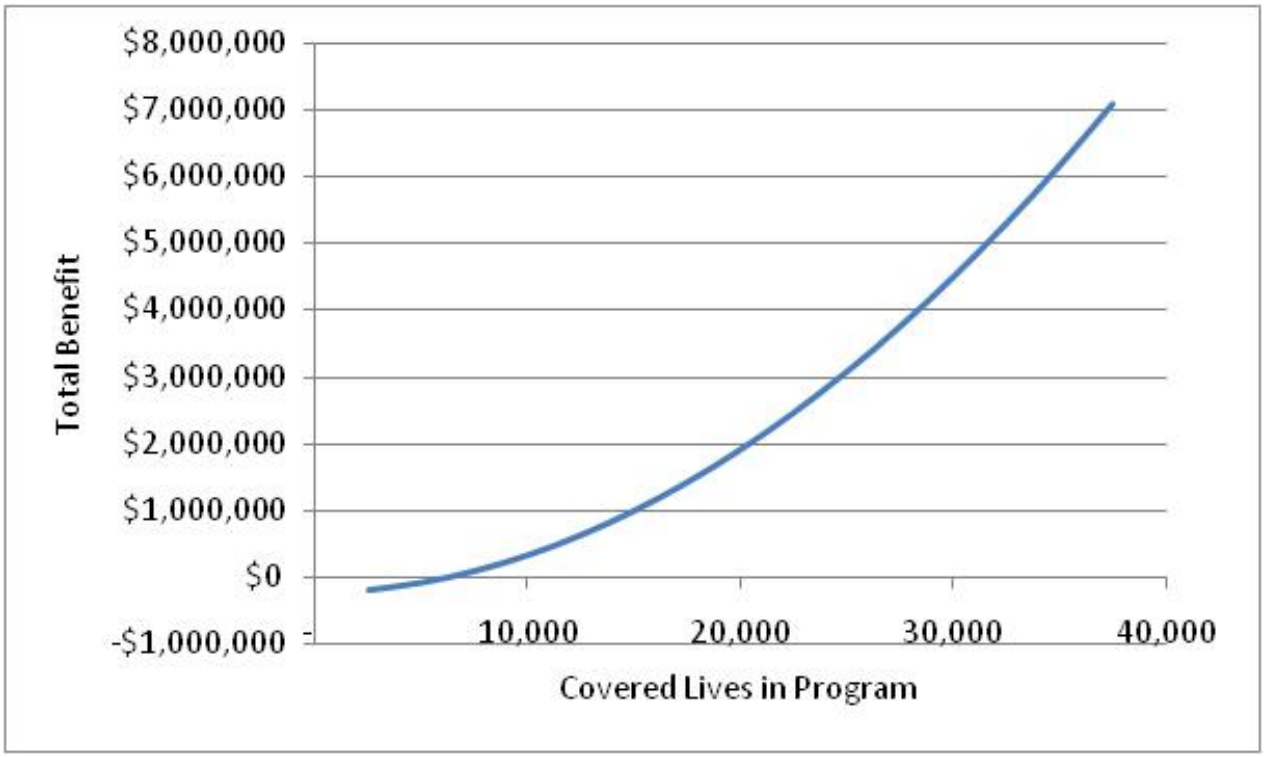
Optimizing the ROI Equation



Once we have our equation and model, we can solve for the rewards amount that optimizes program ROI. In this example $175 is large enough to attract physician participation, but not so large to destroy ROI.

$$NPV = \sum_{i=1}^{n} \frac{((DBP + IDP) \times (NP_i - P_i)) - (R \times NP_i) - (VC_i + FC_i)}{(1 + rate)^i}$$

Optimizing the ROI Equation



Total benefit *accelerates* as more covered lives are added to the program. This makes a powerful argument for purchasers to collaborate in implementing P4P.

$$NPV = \sum_{i=1}^{n} \frac{((DBP + IDP) \times (NP_i - P_i)) - (R \times NP_i) - (VC_i + FC_i)}{(1 + rate)^i}$$

Summary – it's all about signal strength

1. Make sure the signal is the right one:
   - Measures that matter – intermediate/full outcomes
   - Measures that lead to fundamental practice transformation
   - Measures that reduce the potential for negative consequences
2. Make sure the signal is strong enough:
   - Enough dollars to grab attention
   - Enough dollars to balance the costs
   - Engage employees/plan members
   - Engage employers/payers

General Question & Answer