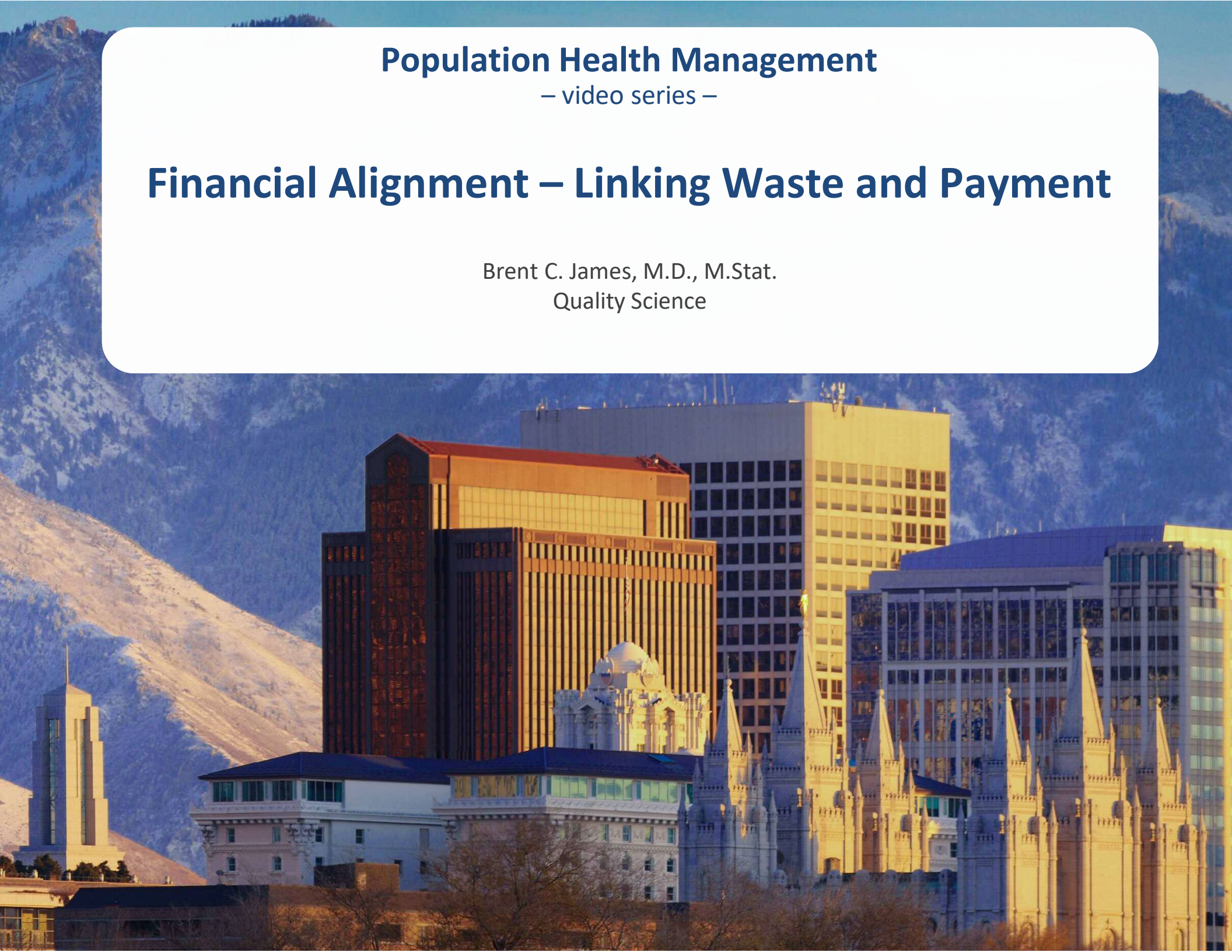


Population Health Management

– video series –

Financial Alignment – Linking Waste and Payment

Brent C. James, M.D., M.Stat.
Quality Science

Video and slides

Quality Science

ProComp – Procedure Comparisons

- ***Dr. Mark Ott, Chief of Surgery at major teaching hospital***
- ***Transparency around costs*** *at the point of care, plus peer pressure:*
  - *Assigned medical student to sit in on specific surgical case types (e.g., lap cholecystectomy; appendectomy)*
  - *Had a laptop computer hooked into the activity-based costing system*
  - *When surgeon used a product or device, reported its and alternatives' cost*
  - ***Pro**vider **Comp**arisons: monthly reports listing cost breakouts, by surgeon – surgeons see their unblinded itemized costs, compared to their peers*
  - *included unblinded **P**atient **R**eported **O**utcomes **Comp**arisons, by surgeon*
  - *Extended to lab, imaging, and others "units of care"*
  - *Spread across all hospitals in system (circulating nurse replaced medical student)*
- ***Direct costs of surgical products and devices –***

2013:	↓ **$16.8** *million*	***Payers:*** ↓ **$38.0** *million*
2014:	↓ **$42.9** *million*	
2015:	↓ **$39.0** *million*	

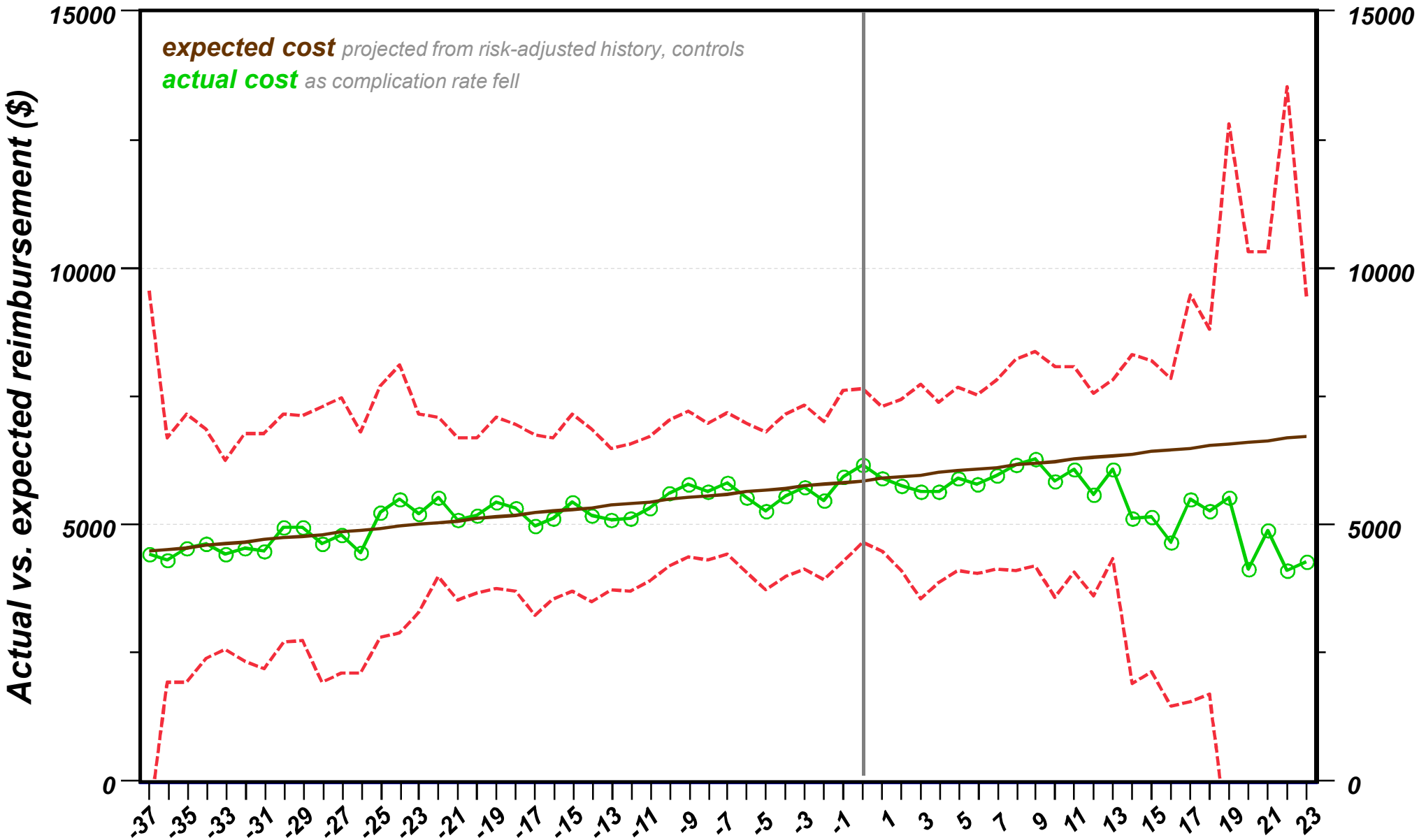
- ***Led to standardization of Doctor Preference Cards*** *(DPCs)*

Community acquired pneumonia *(CAP)*

(Dr. Kim Bateman; Sanpete Hospital and Clinic, Ephraim, Utah)

	without protocol	with protocol	
% patients hospitalized	**39%**	**29%**	
Average length of stay *(LOS)*	**6.4** *days*	**4.3** *days*	
Time to initial antibiotics	**2.1** *hours*	**1.5** *hours*	
Significant complications *(determines DRG)*	**15.3%**	**11.6%**	*↓24.7%; p<0.001*
In-hospital mortality	**7.2%**	**5.3%**	*↓26.3%; p=0.015*
Raw cost per case	**$5211**	**$4729**	*↓ 9.3%; p=0.002*
Relative resource units *(RRUs – inflation adjusted cost per case)*	**55.9**	**49.0**	*↓12.3%; p<0.001*

CAP - cost versus reimbursement



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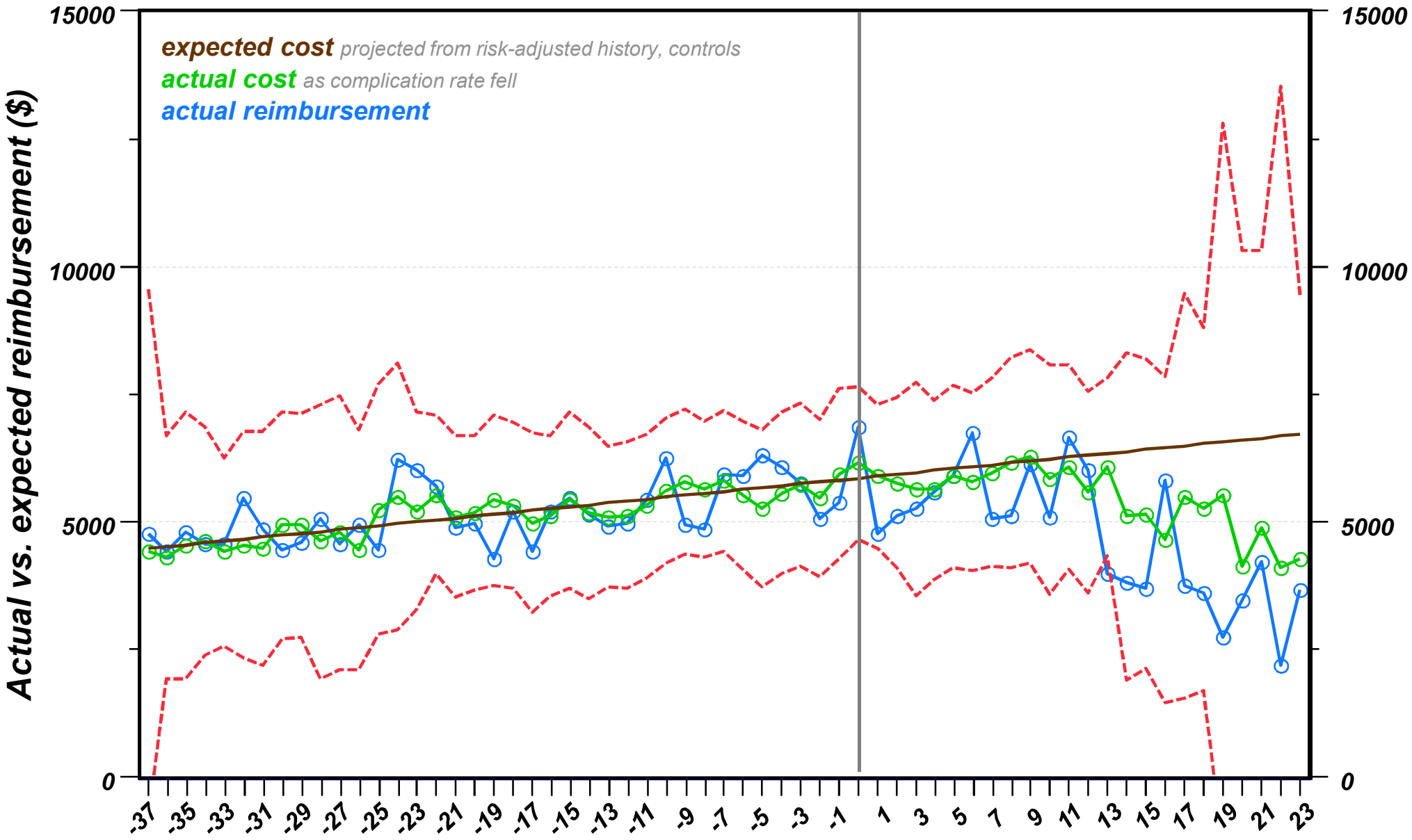

RDS in borderline premature infants

- ***Neonates 33 to 37 weeks gestational age*** *(full term = 40 weeks)*
- ***Immature lungs*** *leading to* ***respiratory distress syndrome*** *(RDS)*
- ***Treated at birth hospital with nasal CPAP*** *(prevents alveolar collapse)* ***+ oxygen + surfactant, rather than intubation + mechanical ventilation in newborn ICU***
- ***Transport / newborn ICU admit / intubation rate:***

78% → ***18%***

- ***Total cost of care:*** ↓ ***44%***

Full financial impact *of clinical process change*

(~110 infants per year, at 1 community hospital)

Payments received:

	Before	After	Benefit
Integrated health plan	900,599	512,120	388,479
Medicaid	652,103	373,735	278,368
Other commercial payers	429,101	223,215	205,886
Payer total	1,981,803	1,109,070	872,733

Care delivery system operating margins:

Birth hospital	84,244	553,479	469,235
Transport (staff only)	22,199	- 27,222	- 49,421
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Evidence-based use of cardiac interventions

(led by Dr. Donald Lappe)

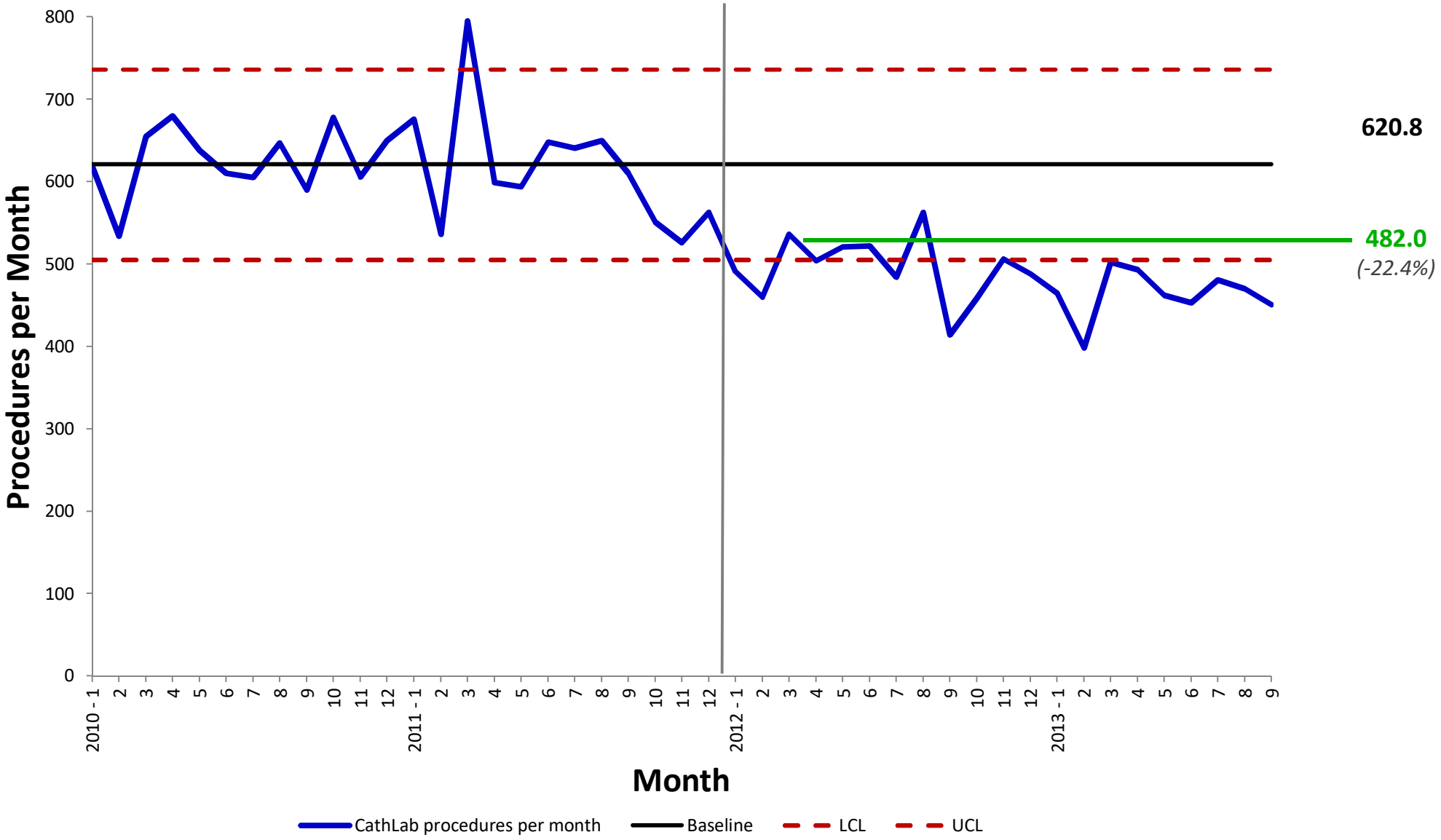
- *Diagnostic cardiac catheterization*
- *Angioplasty and Stents (PCI)*
- *Implantation of Permanent Pacemakers*
- *Implantation of Defibrillators*
- *Nuclear Stress Testing*

➢ ***Deployed evidence-based indications guidelines***
  – *a 1 sheet form for each procedure; just check off 1 or more indications*
  – *coordinated with insurance pre-authorization approvals*

➢ ***At start, near the bottom of the U.S. in terms of population-adjusted use rates*** *(bottom quintile)*

➢ ***Existing system in place that tracked long-term clinical outcomes***

All Cath Lab procedures *(system-wide; 2012-14)*



Evidence-based use of cardiac interventions

Clinical Outcomes: ***Remained excellent*** *(slight, nonsignificant, uptick)*

Costs impact:

# Cases:	↓	**137 / month**
Variable costs:	↓	**$18,918,519**
Total costs:	↓	**~$40,000,000**

Evidence-based use of cardiac interventions

How did the hospital administrator feel about that?

Quality is ***not*** free *(Phil Crosby was waxing poetic)*

It always requires investment

- *change leadership (time and thought),*
- *study and investigation,*
- *data systems,*
- *physical plant, equipment …*

it's just that it has a

massive return on investment *(ROI)*

The key questions:

Who makes the investment?

(always a care delivery group – it is clinical change)

versus

Who gets the savings?

3 main payment mechanisms

1. ***Fee for service*** *(FFS)*
   - *Payment for each billing code item ("unit of care," in a reduced form)*

2. ***Per case***
   - *Classic example: CMS DRG payment system*
   - *Many others use it, too*
   - *extends to "bundled payment" around a specific case type*

3. ***Provider at risk***
   - *Care provider bears some degree of financial risk for each patient's health care needs*

"Provider at risk" has several levels

1. ***Quality / cost metric reporting only***
2. ***Value-Based Purchasing / Pay for Performance***
3. ***Upside-only Shared Savings***
4. ***Upside plus downside Shared Savings / Bundled Payment*** *including defined complications*
   (for single procedure or patient w single chronic disease)
5. ***Disease capitation***
   (payment for a defined population, adjusted for disease burden)
6. ***Full capitation*** *(capitation without disease adjustment; full population-level management)*

Nested sources of waste

	Waste class	% of all waste	Waste subclasses
3.	Case-rate utilization *(# cases per population)*	45%	a) Inappropriate cases *(risk outweighs benefit)* *(e.g., many cath lab procedures; CTPA)* b) Preference-sensitive cases *(when given a fair choice, many patients opt out)* *(e.g., elective hips, knees; end-of-life care)* c) Avoidable cases *(hot spotting; move upstream)* *(e.g., team-based care)*
2.	Within-case utilization *(# and type of units per case)*	40%	a) Clinical variation *(e.g., QUE studies; surgical equipment)* b) Avoidable patient injuries *(e.g., serious safety event systems; CLABSI)*
1.	Efficiency *(cost per unit of care)*	15%	a) Supply chain *(external products & services)* b) Operational efficiencies *- TPS Lean observation - clinical engineering* *- current EMR functions - communications + IT* c) Indirect costs *- administration - billing adjudication* *- regulatory burden - utilities - etc.*

Financial alignment under different payment mechanisms

WASTE REMOVAL LEVEL	% of all waste	PAYMENT METHOD: FFS	Per case	Provider at risk
3. Case-rate utilization *(# cases per population – population health)*	45%	▼	▼	▲
2. Within-case utilization *(# and type of units per case)*	40%	▼	▲	▲
1. Efficiency *(cost per unit of care)*	15%	▲	▲	▲

Note: For green arrows, savings from waste elimination accrue to the care delivery organization; for red arrows, savings go to payer organizations.

James Brent C and Poulsen Gregory P. The case for capitation: It's the only way to cut waste while improving quality. *Harv Bus Rev* 2016; 94(7-8):102-11, 134 (Jul-Aug).

A mathematical model

Assume that a hospital decides to shift its practice model into pay-for-value / population health …

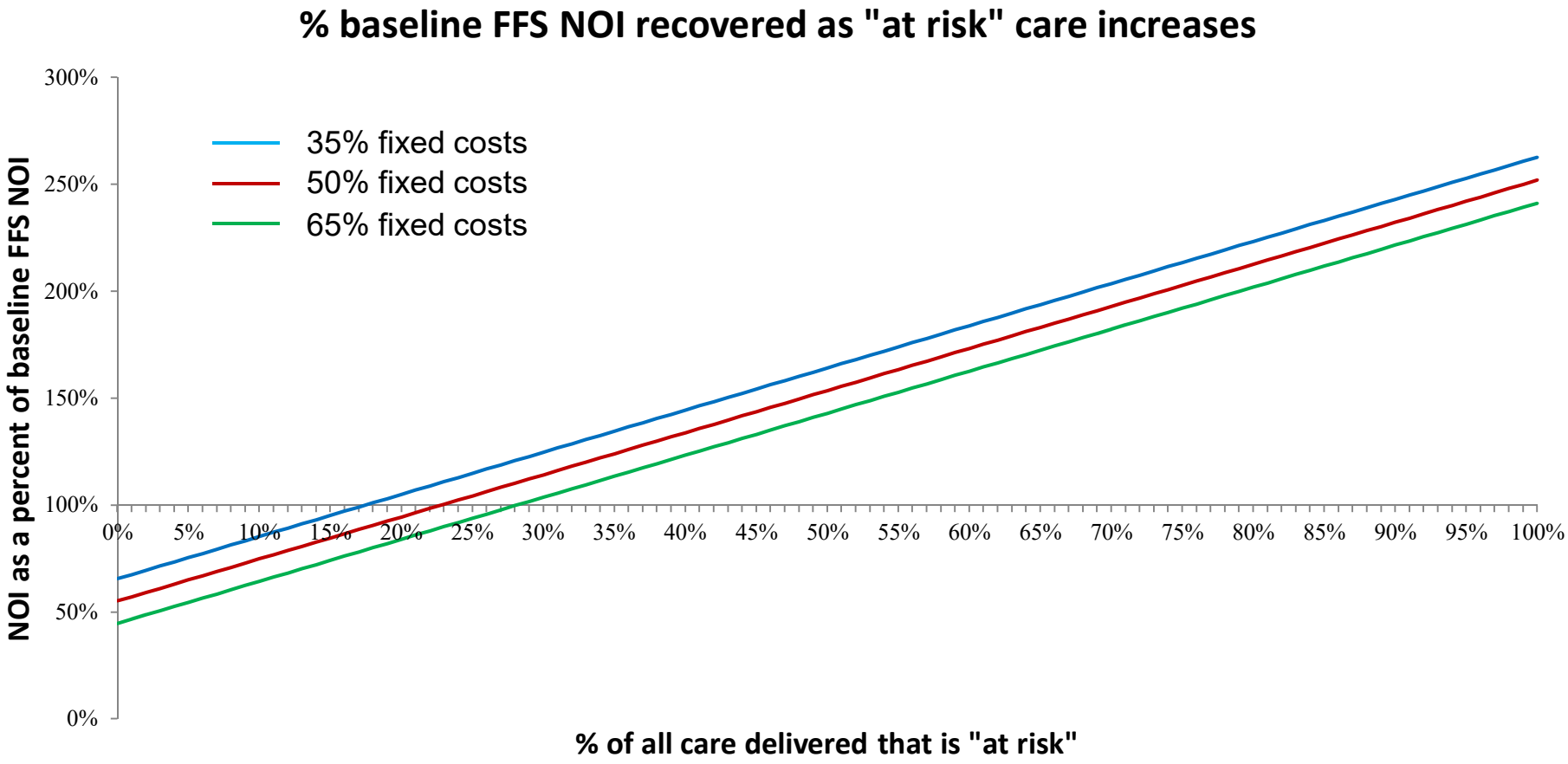
How much of the hospital's revenues must be "at risk" *before*

gains from *quality-associated* ***waste elimination***

outweigh

losses from FFS and per case payment?

Finding the “at risk” tipping point



Assumptions:

- Hospital only – does not include outpatient care
- **10% drop in total “case rate” utilization** (hospital volume drops by 10%), from waste elimination efforts
- Intermountain’s current mix of FFS, Medicare DRG, commercial DRG, and Medicaid “at risk” care
- Intermountain’s current operating margins within those classes (e.g., for Medicaid = -23%; Medicare = -19%)
- 3% premium increase for bearing risk
- **100% of cost savings, adjusted for fixed costs, come back to hospital** (dramatically not true if someone else moves upstream, reduces inpatient utilization, and drops hospital volumes from the outside)

An interesting fact emerged …

Consider a situation where a care delivery group receives payments for a case, but those payments don't fully cover the group's true costs for delivering the care – a negative operating margin.

Negative operating margins are functionally equivalent, *on the group's financial statements,*
to "at risk" payment.

That means that

almost all care delivery groups *(integrated delivery systems, hospitals, outpatient practices)* ***already bear a considerably higher level of "at risk" care than they realize …***

At risk includes:

- *employees / families (if they offer health benefits)*
- *uncompensated (charitable) care (think capitation at a $0 payment rate)*
- *existing "at risk" contracts*
- *fully integrated health plans*
- ***actual marginal losses from any case where payment doesn't cover full costs of operations, regardless of payment type***

Payer-mix adjusted key clinical process analysis

Identifies clinical areas where "at risk" / population health clinical management strategies offer financial advantage right now, regardless of current payment mechanisms

(i.e., those clinical areas that are already "underwater")

That's where to start the transition *…*

an essential part of a long-term clinical management strategy

To be "business viable," ***population health requires financial alignment.***

Short term,
that may mean matching the
"level of waste"

to

the type of payment.

It also means

As a financial strategy, wise care delivery groups will vigorously develop their internal capability for clinical management and population health …

In parallel, they will

actively move toward "at risk" payment

Until that transition take place

Would you, personally,

sacrifice clinical quality

(mission; the lives of the people you serve)

in order to

protect financial performance?

Choose today …

If you wait until you're in the heat of the moment to think this through, time pressures, pragmatics, and complexity could easily lead you to decisions that you will later deeply regret.

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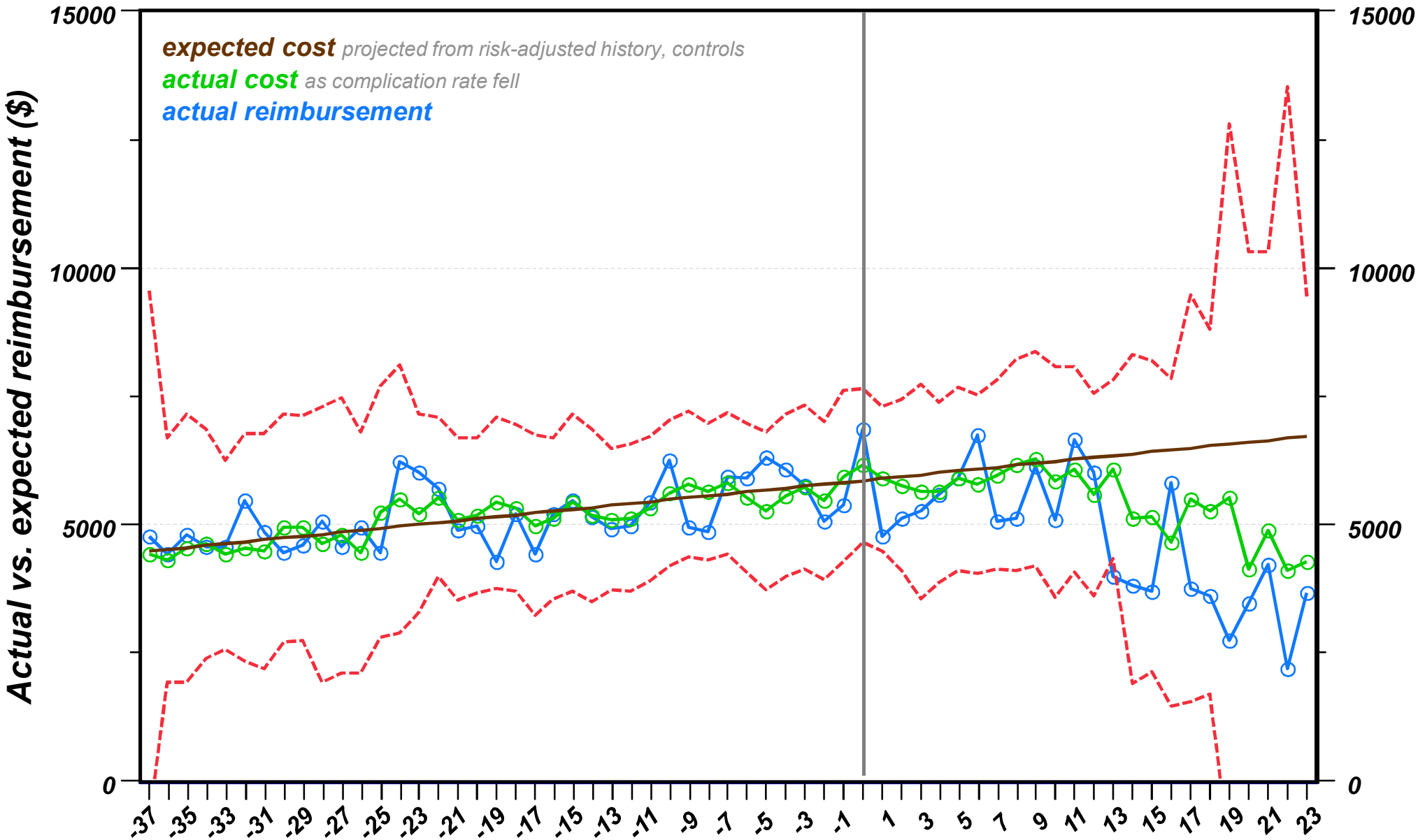

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POKE – Dr. Erick Ridout, *chief of NICU in St. George, UT*

- ***Framing:***
  - *Invasive procedures lead to white matter injury and lower IQ at school age*
    Vinall J, Miller SP, Bjornson BH, Brant R, Synnes AR, Cepeda IL, Grunan RE. Invasive procedures in preterm children: Brain and cognitive development at school age. Pediatrics *2014; 133(3):412-21 (Feb 17). "Repeated stimulation of physiologically immature neurons led to cytotoxic damage and increased neuronal cell death"; use of morphine to control pain did not help.*
  - *Blood draws from central lines increase infection risk*
- ***Aim: reduce unintentional harm***
- ***4 large NICUs participated; evaluated after 1 year***
- ***Coordinated POKEs*** *– blood draws and medication delivery*
- ***Results:***
  - *# of POKEs:* ↓ *from* **5** *to* **3.1** */ day* *(38% – avoided 96,000+ POKEs / year)*
  - *Fewer lab tests overall – some testing rates fell by a factor of 3, at 1 facility*
  - **99** *months (1,650+ line days) since last CLABSI at 1 major NICU (July, 2013)*
  - *Length of stay:* ↓ **30.1%**
  - *Variable cost:* ↓ **42.5%**
  - *Total cost:* ↓ **$12,021,905** / year

POKE – Dr. Erick Ridout

– *Payments:* ↓ **$21,898,875** *(38.2%)*

– *NOI:* ↓ **9,876,970**

– *Result:* ***The program was "decommissioned"***