

Theory, Results and Implementation

Incentives Institute Pre-Conference

Oct 19th 2008



Agenda

Welcome and Introductions	F de Brantes	1 to 1:15pm
Review of the Prometheus Model and Desired Behavior Changes <ul style="list-style-type: none">•Overview•“warranties” and desired behavior changes	F de Brantes Meredith Rosenthal	1:15 to 1:30pm 1:30 to 2:00pm
Evidence-informed Case Rates: <ul style="list-style-type: none">•Results to-date•Open source model (ECR standardization)•ECR Normalization	Amita Rastogi	2:00 to 2:30pm 2:30 to 2:45pm 2:45 to 3:00 pm
Break		3:00 to 3:15pm
Prometheus Implementation: Getting Started <ul style="list-style-type: none">•Implementation process overview and pilot site structures•ECOH Implementation	F de Brantes Jim Knutson	3:15 to 3:30pm 3:30 to 4:00pm
Prometheus Implementation: Operations <ul style="list-style-type: none">•Overview of operational process•“Baking it in”: The Health Partners approach•The outsourced Engine	Chad Brown Carrie Tichey Greg Everett	4:00 to 4:15pm 4:15 to 4:45pm 4:45 to 5:15pm
Evaluation Plan	Meredith Rosenthal	5:15 to 5:45pm



Speakers

- Francois de Brantes, National Coordinator, Prometheus Payment
- Meredith Rosenthal, PhD, Harvard School of Public Health
- Amita Rastogi, MD, Prometheus Payment
- Chad Brown, Prometheus Payment
- Jim Knutson, Aircraft Gear
- Greg Everett, IRP-Claimshop
- Carrie Tichey, HealthPartners



Some thanks....

- Design Team members who spent three years working on this model
- The Robert Wood Johnson Foundation and the Commonwealth Fund whose support makes this effort possible
- Masspro, our analytic partner without whom we wouldn't have any ECRs
- AHRQ who helped pull through the code sets and clinical classification system that we depend on
- The Clinical Working Groups that have informed the typical bundles of services
- Geisinger, Premier, Johns Hopkins, HealthPartners, Crozer Keystone, and others who have informed our model



Overview

Francois de Brantes
National Coordinator



About PROMETHEUS Payment

- Not for profit with independent BOD made up of employers, plans, providers, health care services experts
- Funded in 2006 by CMWF to develop and model Evidence-informed Case Rates
- Funded in 2007 by RWJF to develop implementation plan
- Funded in 2008 by RWJF to support pilot implementations

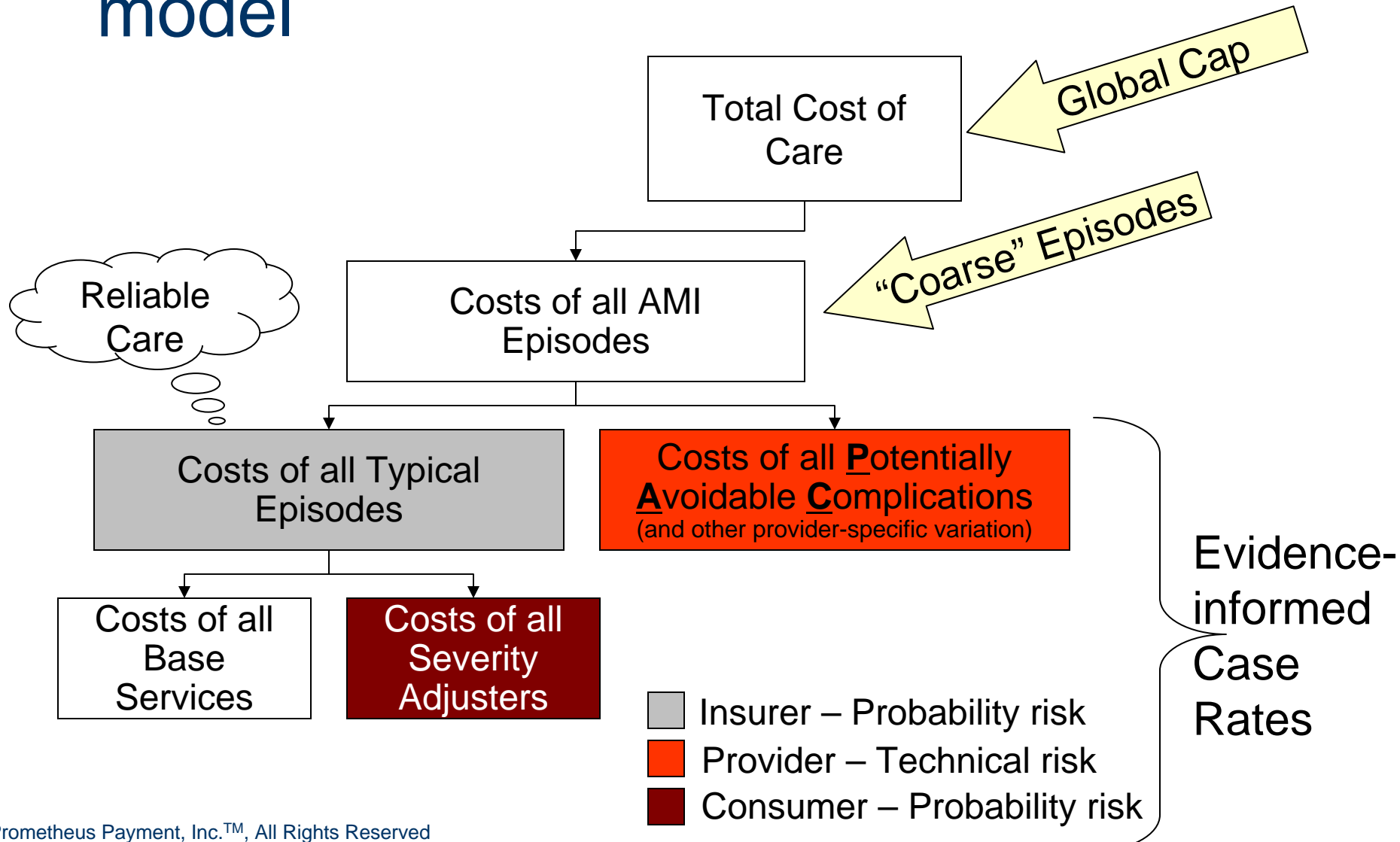


Core Concepts of Prometheus

- The price of an episode of medical care is specific to any patient-provider-payer triad
- The price has to include all the services recommended by evidence or expert opinion
- Episodes can be priced for chronic care, procedural care, or acute care
- There is no need for legal or financial integration of providers, just clinical integration



Risk bifurcation in the PROMETHEUS model





An Evidence-informed Case Rate... for each patient-provider-payer combination

Total ECR price = Type of services * Frequency * Price per service

Based on 50% of current defect rate	Allowance for Potentially Avoidable Complications Margin
Currently based at 10% of typical	Severity-adjustment caused by known patient health status
Arrived at through step-wise multi-variable regression model	“Normal” variation reflecting practice patterns
Adjusts ECR for local patterns	Core/Typical services that are recommended by best practice or evidence
Informed by guidelines and empirical data analysis	

The ECR explicitly removes excess cost of care caused by errors and creates a strong incentive to eliminate defects and improve quality.



And now for some definitions....

- PACs – Potentially Avoidable Complications
- HACs – CMS-defined Hospital Acquired Conditions....HACs are a subset of PACs
- PAC Allowance – the portion of total PACs that gets redistributed into each ECR, and severity-adjusted so that ECRs for more severe patients get a higher PAC allowance...PAC Allowances are intrinsically warranties that the provider “offers” the payer



PROMETHEUS: Incorporating Warranties into Episode Payments

Meredith B. Rosenthal, Ph.D.
Harvard School of Public Health



Acknowledgements

- My co-contributors: Francois de Brantes, Guy D'Andrea, Amita Rastogi
- PROMETHEUS Design Team past and present



Health Care Payment Reform Trends

- Health care spending trends steepened after the managed care backlash
- Payment policies once again the focus of cost control efforts
- Risk sharing with providers back on the table, but with new sensitivity about:
 - Patient heterogeneity
 - Need to differentiate between population risk (i.e., random events) and practice style
 - Rewarding value not stinting



PROMETHEUS Payment Model

- PROMETHEUS is an episode-based payment concept that addresses all three of the concerns with capitation a la 1990 (see previous)
 - Payment associated with actual prevalence of conditions among eligible patients, not population average (i.e. capitation)
 - Severity adjusted
 - Quality standards inform base payments
 - Scorecard captures quality as well as cost
 - *Warranty for complications (my focus)*



Warranties

- Offered by a seller of a product
- Typically provide less than full insurance (i.e., some remaining variability in potential cost due to exclusions, limits, cost-sharing)
- Protect buyer from risk, but also signal the quality of the product



Where Do We Expect to Find Warranties?

- When there are relatively clear ways to define and verify product failures that are covered (what is the buyer's fault vs. a defect?)
- Where a buyer cannot detect how well a product will “work” at the point of sale
- Where the seller has some control over the process -- can manage rate of product failures



Warranties in Health Care

- Little use of warranty concept even implicitly in health care (e.g., surgery to retrieve instrument or sponge)
- Experiment in orthopedic surgery during 1990s found that positive results for both parties in a voluntary pilot with a single surgeon
- Geisinger Health System (note: they do not call it a warranty) ProvenCaresm model



PROMETHEUS Warranty Sketch

- Severity-adjusted base payments cover recommended and typical services
- Warranty is intended to address complications:
 - Share savings with providers who have low complication rates (and/or can lower them)
 - Provide payers with insurance against complications



Warranty Specifications

- Empirically estimate average “Potentially Avoidable Complication (PAC)” rate
- Providers get 50% of the costs associated with these PACs prospectively (the warranty “price”)
- PAC allowance is partly adjusted for severity
- Payers are indemnified for PACs subject to an outlier provision



Simulation

- Large commercial claims data set
- Type of Episode: Acute Myocardial Infarction
- 3 prototypical patient types, differing by severity
- Monte Carlo simulations with random draws for:
 - Patient severity
 - Number of complications
 - Cost per complication

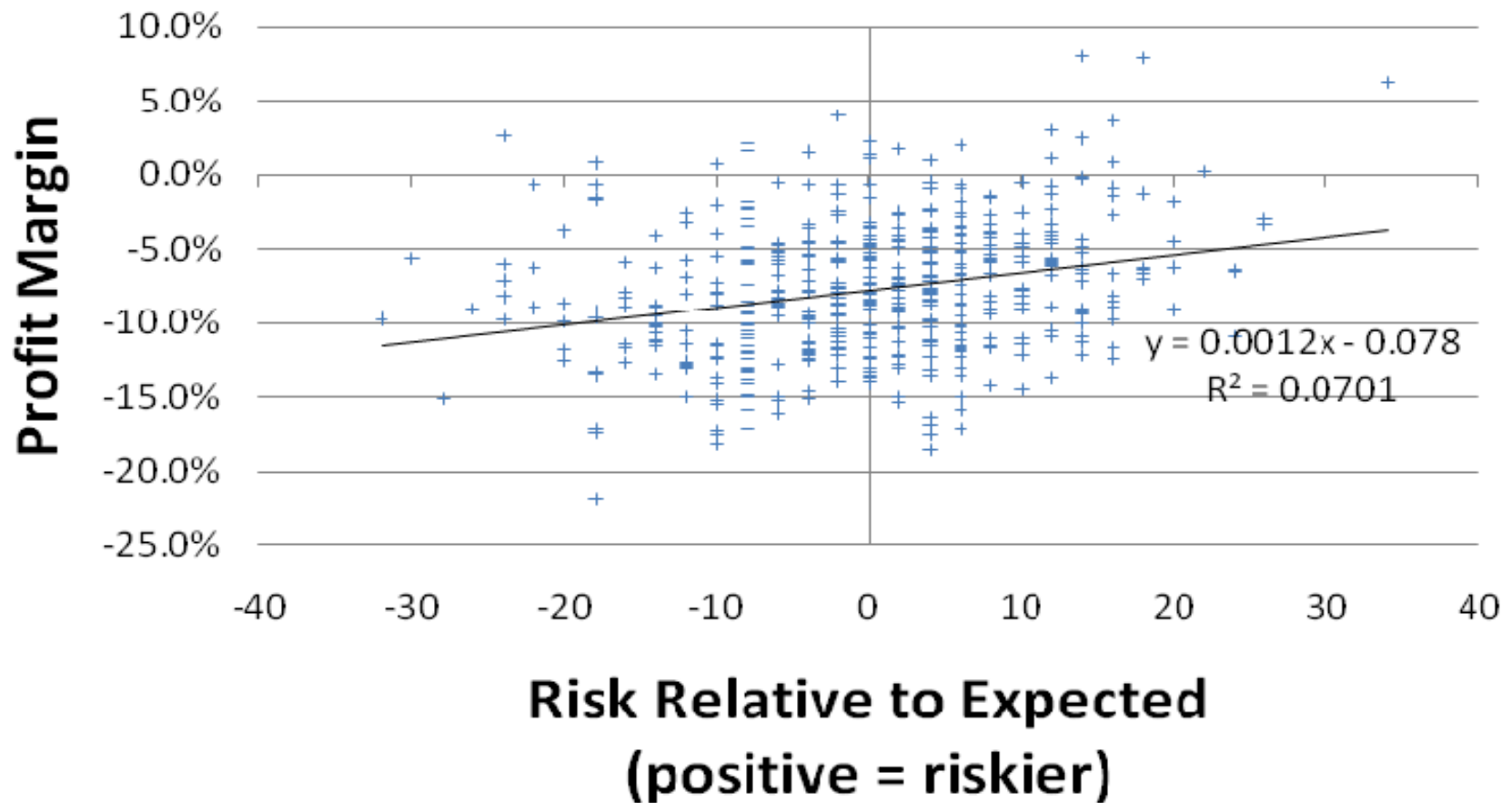


PROMETHEUS Payment Illustration for AMI

	Patient 1	Patient 2	Patient 3
Cost of Care of Typical AMI Case (Facility Plus Professional)	\$10,957	\$43,915	\$120,045
Allowance for PACs	\$3,628	\$8,502	\$19,761
Flat Fee Allowance (25% of compl costs spread over all)	\$2,007	\$2,007	\$2,007
Proportional Allowance	\$1,620	\$6,495	\$17,754
Margin	\$1,096	\$4,392	\$12,005
Total ECR per Patient (severity + PAC allowance + margin)	\$15,680	\$56,809	\$151,811

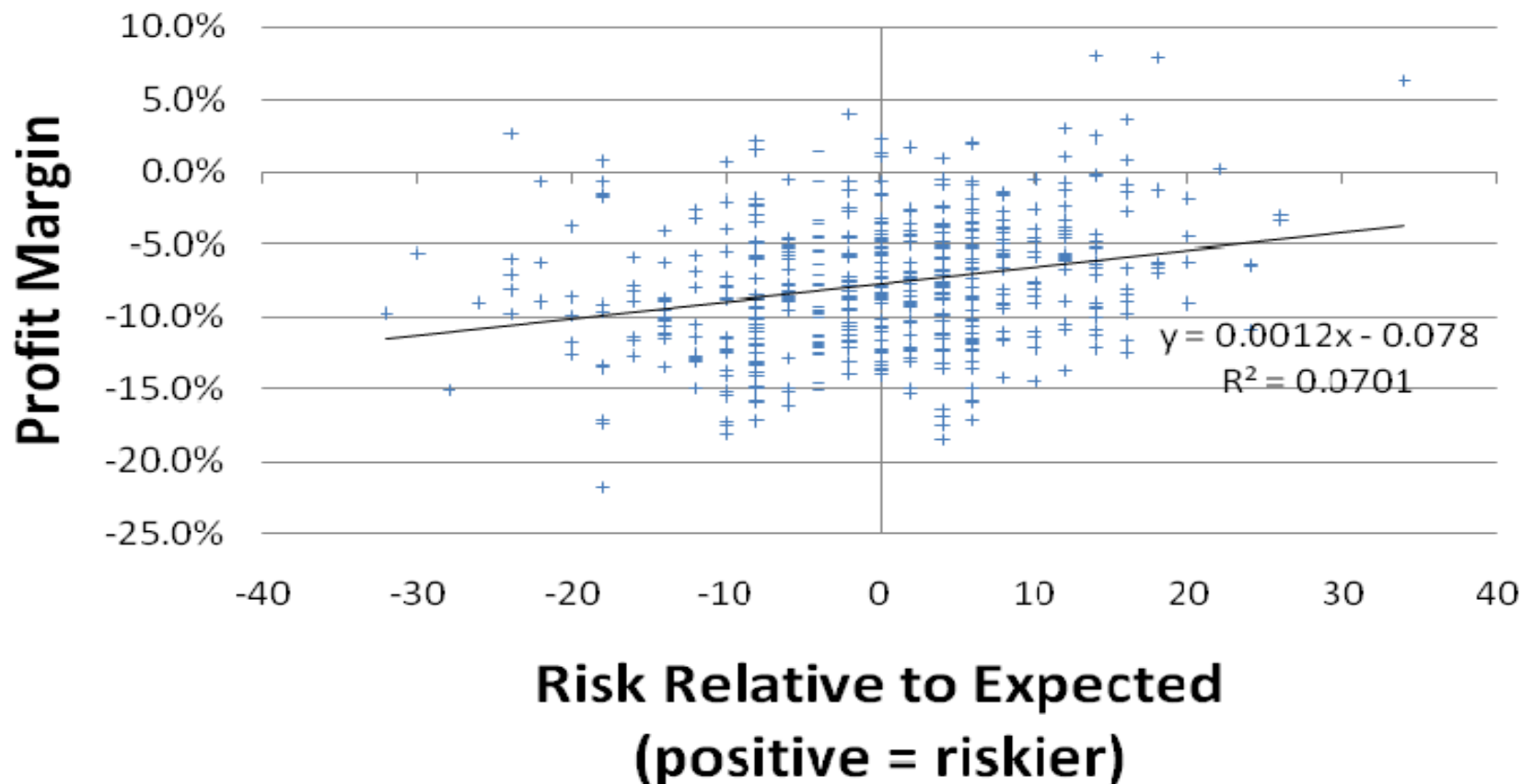


Provider Margin as a Function of Average Severity



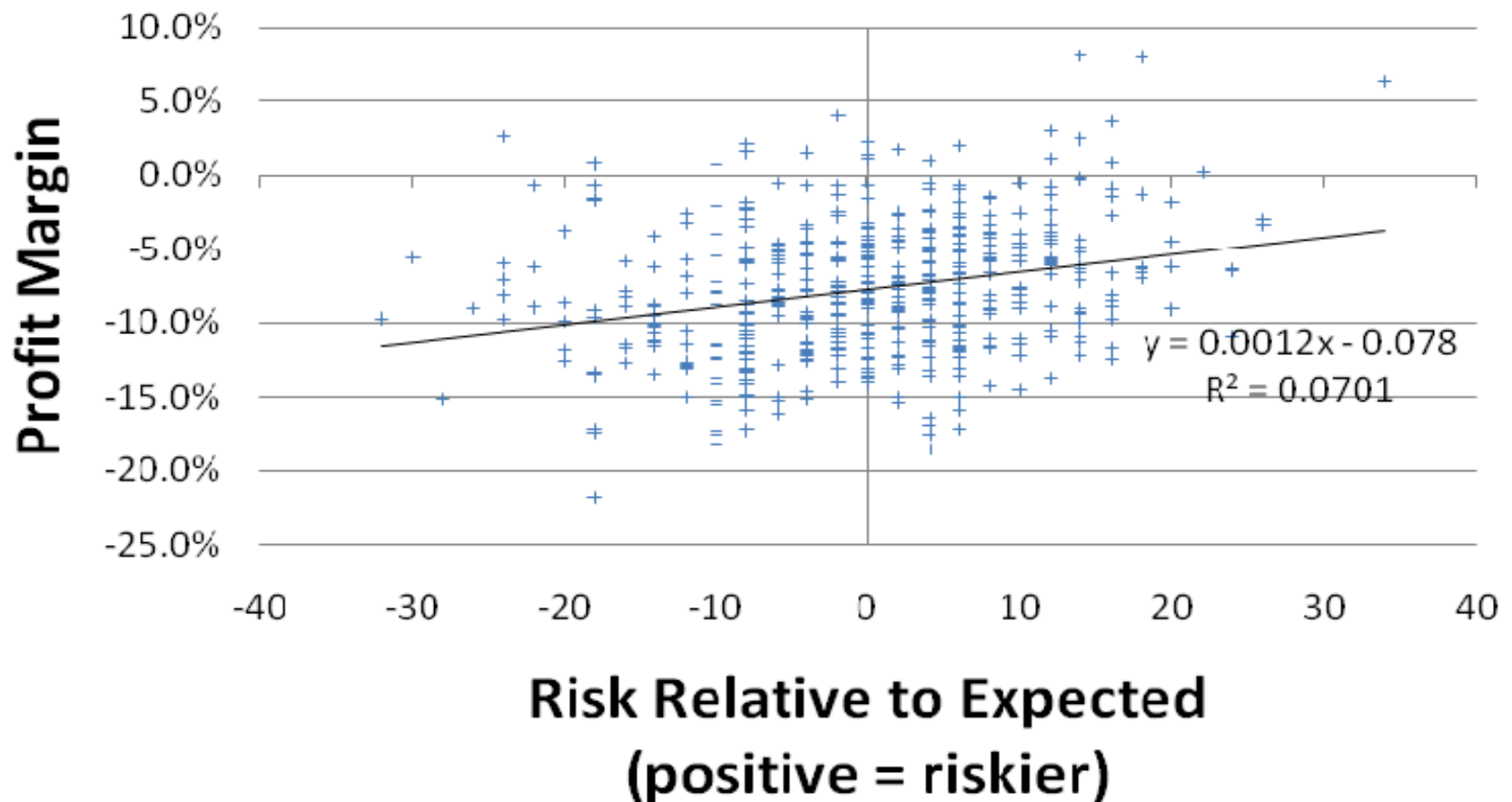


Provider Margin as a Function of Complication Rate





Provider Margin as a Function of Cost per Complication





Conclusion

- Warranty may be useful concept to develop risk sharing acceptable to providers and beneficial to payers
- Complication costs for many conditions are significant – shared savings from modest reductions could be meaningful to both sides
- Appropriate severity adjustment can address selection concerns
- More work is needed to document achievable rates, best practices

Evidence-informed Case Rates

Amita Rastogi, MD, MHA
Chief Medical Officer, Prometheus
Bridges to Excellence



Agenda

- What are ECRs and ECR Results to date
- Open Source Model (ECR standardization)
- ECR Normalization



How is an ECR created?

- ECR: Evidence-informed Care Rate
- Based on a large commercially insured population claims data – 4.7 Million covered lives, \$95.2 Billion total costs
- Trigger codes defined: inpatient triggers, outpatient triggers
- Time window defined: one-year; look-back & look-forward periods
- Claims segregated as follows:
 - Exclude: Services irrelevant to the ECR
 - PAC: Services for potentially avoidable complications
 - Typical: Services for treatment of base condition



Entire Database: Overall Numbers

Entire Database	2 years - 2005, 2006	
Unique patients	4,734,394	
Patient years	9,071,119	
Total Claims (STAY, PROF, PHARMACY)	459,275,029	
Total claims (\$\$)	\$95,243 Million	
Claim Type	N	\$ Millions
STAY	1,228,127	\$32,426
PROF	309,940,967	\$44,996
PHARMACY	148,105,935	\$17,822
Total	459,275,029	\$95,243

PROF: Outpatient facility, Professional, laboratory, radiology, ancillary



Types of ECRs

Type of ECR	Trigger	Time Window	Examples
Chronic Medical	Outpatient Professional	One year from trigger	Diabetes, CHF, COPD, Asthma, CAD, HTN
Acute Medical	Inpatient Facility	3-day look-back; 30-day look-forward	AMI, Pneumonia
Inpatient Procedural	Inpatient Facility	30-day look-back; 180-day look-forward	Hip Replacement, CABG, Bariatric Surgery
Outpatient Procedural	Outpatient Facility/ Professional	30-day look-back; 180-day look-forward	Angioplasty, Lap Cholecystectomy, Hernia Surgery



2008 ECR list and developmental schedule

ECR#	ECR Descr	ECR TYPE	TIMELINE	STATUS
1	Diabetes	Chronic Medical	March 19th	DONE
2	AMI	Inpatient Medical	April 14th	DONE
3	CHF	Chronic Medical	June 9th	DONE
4	Hip Replacement	Inpatient Procedural	Sept 12th	DONE
5	Knee Replacement	Inpatient Procedural	Sept 12th	DONE
6	COPD	Chronic Medical	Sept 30th	Data pulled
7	Asthma	Chronic Medical	Oct 3rd	Data being pulled
8	CAD	Chronic Medical	Oct 15th	Codeset Ready
9	HT	Chronic Medical	Oct 30th	
10	Bariatric Surgery	Inpatient Procedural	Nov 15th	Codeset Ready
11	CABG	Inpatient Procedural	Nov 30th	



2009 List of Potential ECRs

12	Laminectomy	Inpatient Procedural
13	Colon Resection	Inpatient Procedural
14	Pneumonia	Inpatient Medical
15	Stroke	Inpatient Medical
16	PCI (Angioplasty)	Outpatient Procedural
17	Hernia Surgery	Outpatient Procedural
18	Knee Repair and Reconstruction	Outpatient Procedural
19	Cholecystectomy / Biliary Tract Surgery	Outpatient Procedural
20	ENT Surgery	Outpatient Procedural
	Nasal Surgery	Outpatient Procedural
	Surgery on Tonsils and Adenoids	Outpatient Procedural
	Ear Surgery	Outpatient Procedural
21	Cataract Surgery	Outpatient Procedural
22	C-Section	Outpatient Procedural
23	Hysterectomy	Outpatient Procedural
24	Breast Surgery	Outpatient Procedural
25	Labor and Delivery	Outpatient Procedural

The ECR Development Process

Datasets

Code Sets
& Rules

Statistical
Models

ECR Working
Group
Definitions

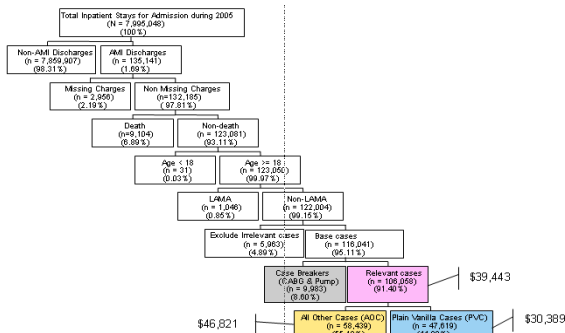
Underuse
& Care
Coordin

PAC
Allowance

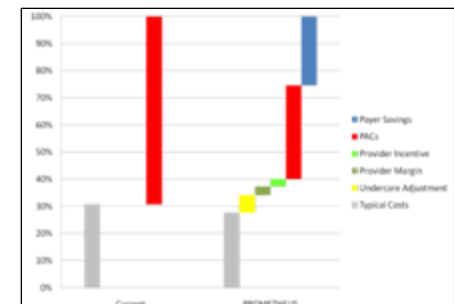
Step 1:
Defining boundaries and
slicing data

Step 2:
Risk Adjustment for
Typical Popul

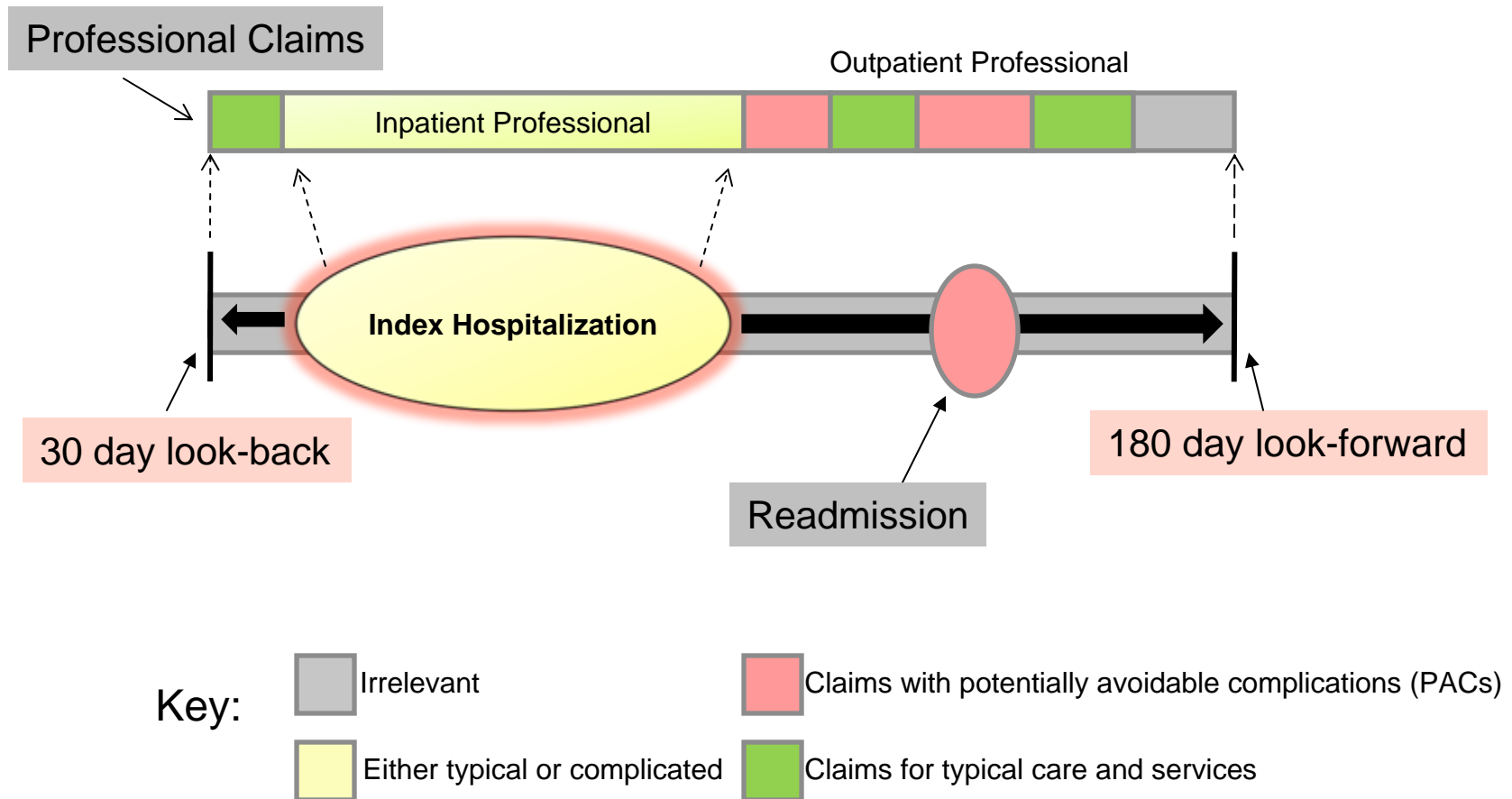
Step 3:
PAC Allowance &
Pricing the ECR



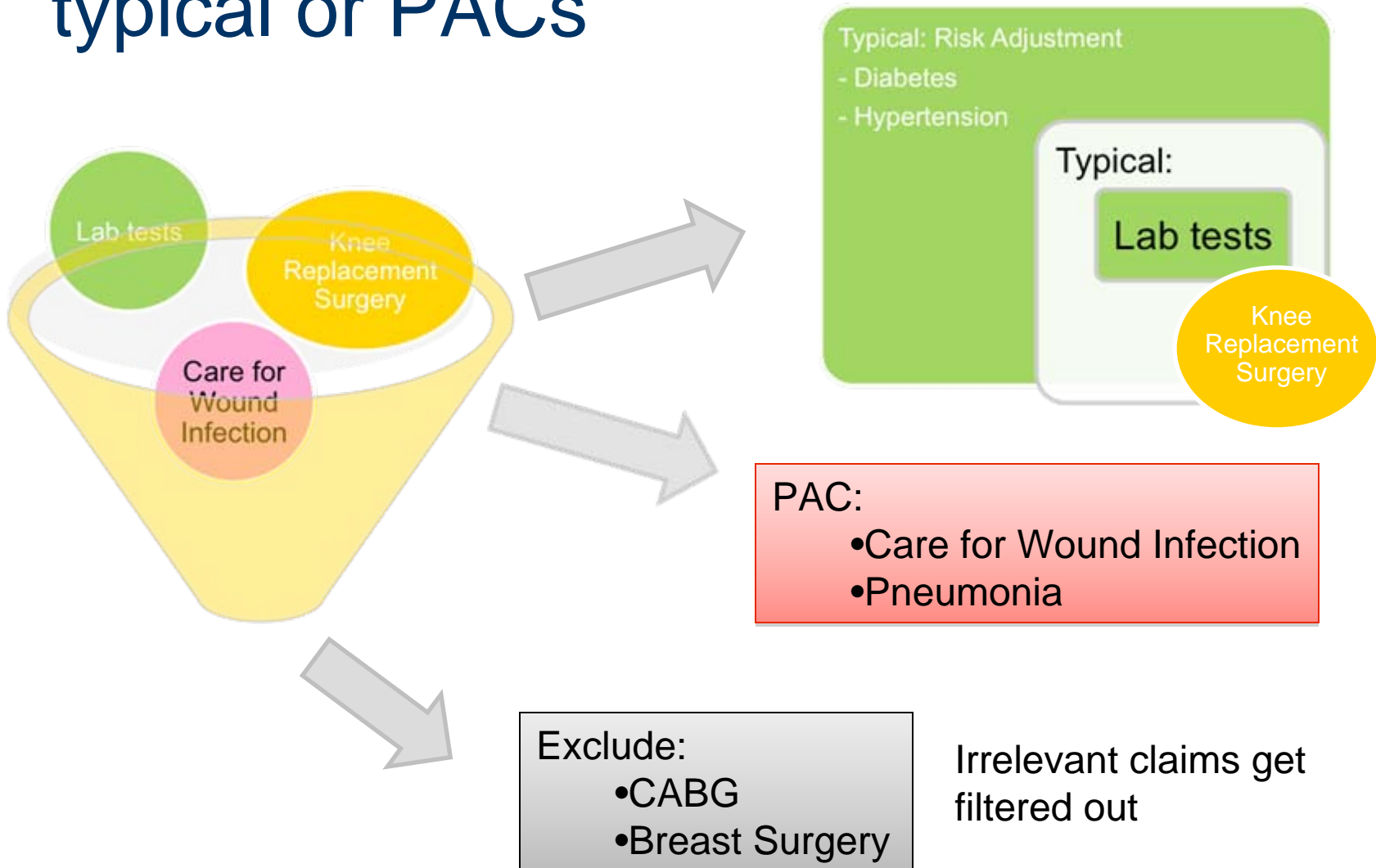
Variables	N	Coefficient	Patient 1	Patient 2	Patient 3
Intercept	47,619	9.09215	1	1	1
PTCA, thrombolysis	23,200	0.75062	1	1	1
Diagnostic cardiac catheterization, coronary arteriography	38,982	0.44984	1	1	1
Insertion of Balloon Pump	566	0.21249	1	1	1
Blood transfusion	1,008	0.13689	1	1	1
Diagnostic ultrasound of heart	2,836	0.04997	1	1	1
Congestive heart failure, nonhypertensive	11,542	0.09316	1	1	1
Cardiac dysrhythmias	12,111	0.06205	1	1	1
Coronary atherosclerosis and other heart disease	46,153	0.03266	1	1	1
Admission source: ER vs. Other/Another hosp	33,521	0.11723	1	1	1
Bed size of hosp: Large vs. Medium/Small	36,394	0.07421	1	1	1
Disq of patient (uniform): Other facility vs. routine/Short-term hosp	3,357	0.11833	1	1	1
Race (Uniform) Black vs. White/NA/Unk	2,768	0.06705	1	1	1
Admission day is a weekend	39,672	0.03334	1	1	1
Med House \$ quantile for patient zip: \$1 to <\$7k vs \$37k to <\$1k	14,398	-0.00362	1	1	1
Evidence-informed Amount (No Technical Risk)			\$71,180	\$38,927	\$18,870



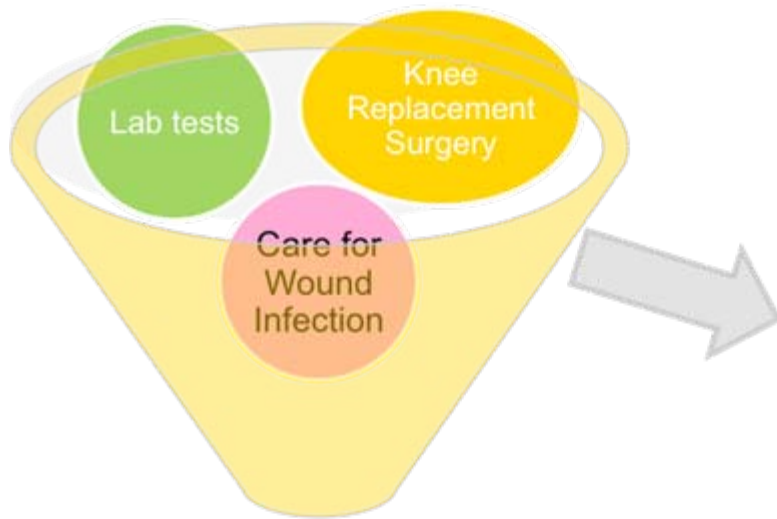
Inpatient ECR: Identifying the component parts



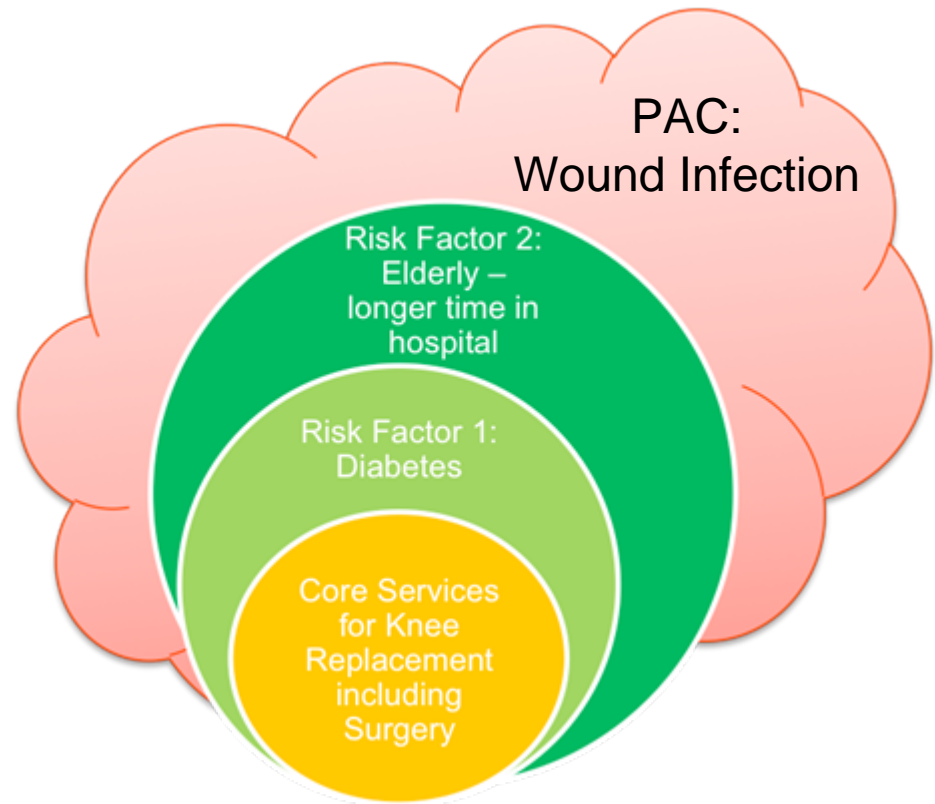
Relevant claims get navigated as typical or PACs



Dollars get accumulated as typical or PAC Allowances

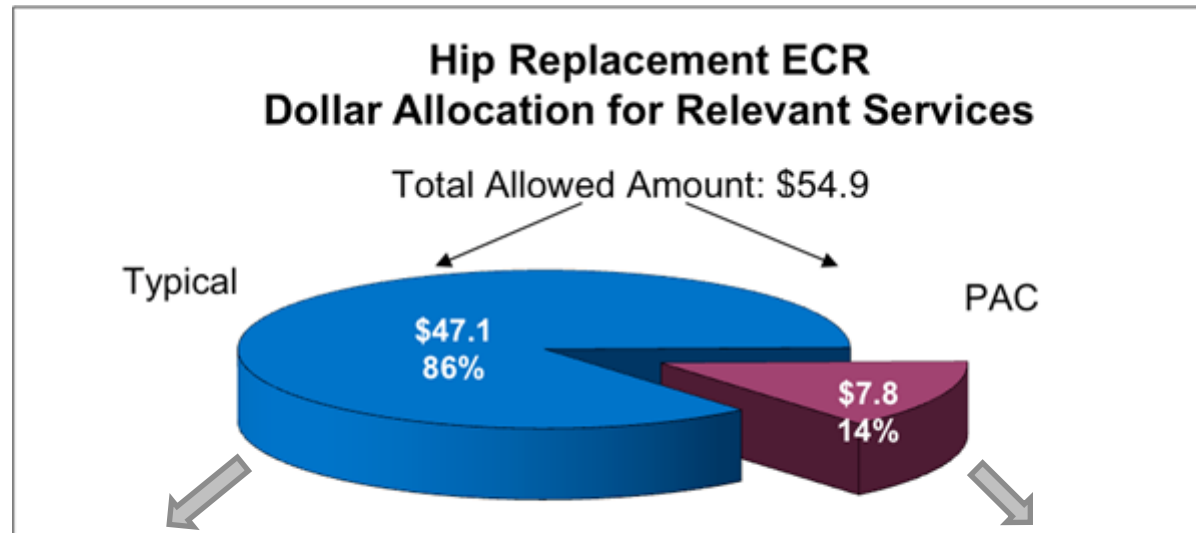


- Risk Factors increase intensity of services: give additional allowance
- PACs (potentially avoidable complications): services related to PACs get placed into a PAC pool

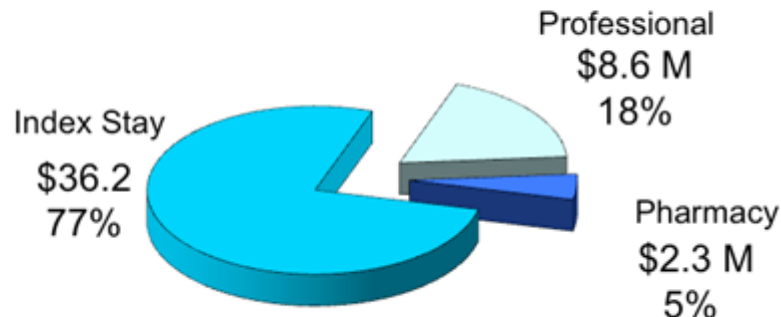




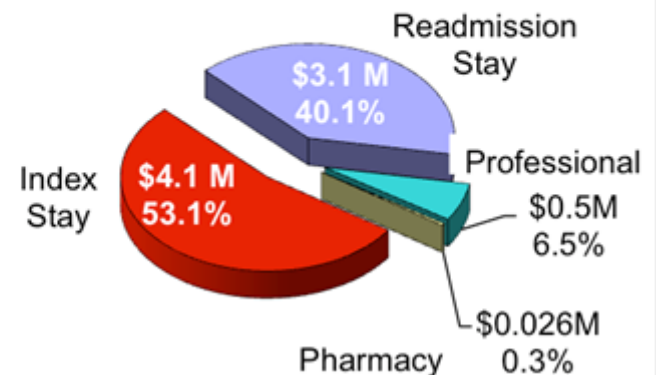
Hip Replacement Summary



Total Typical Dollars (\$47.1 M)



PAC Dollars (\$7.9 million)





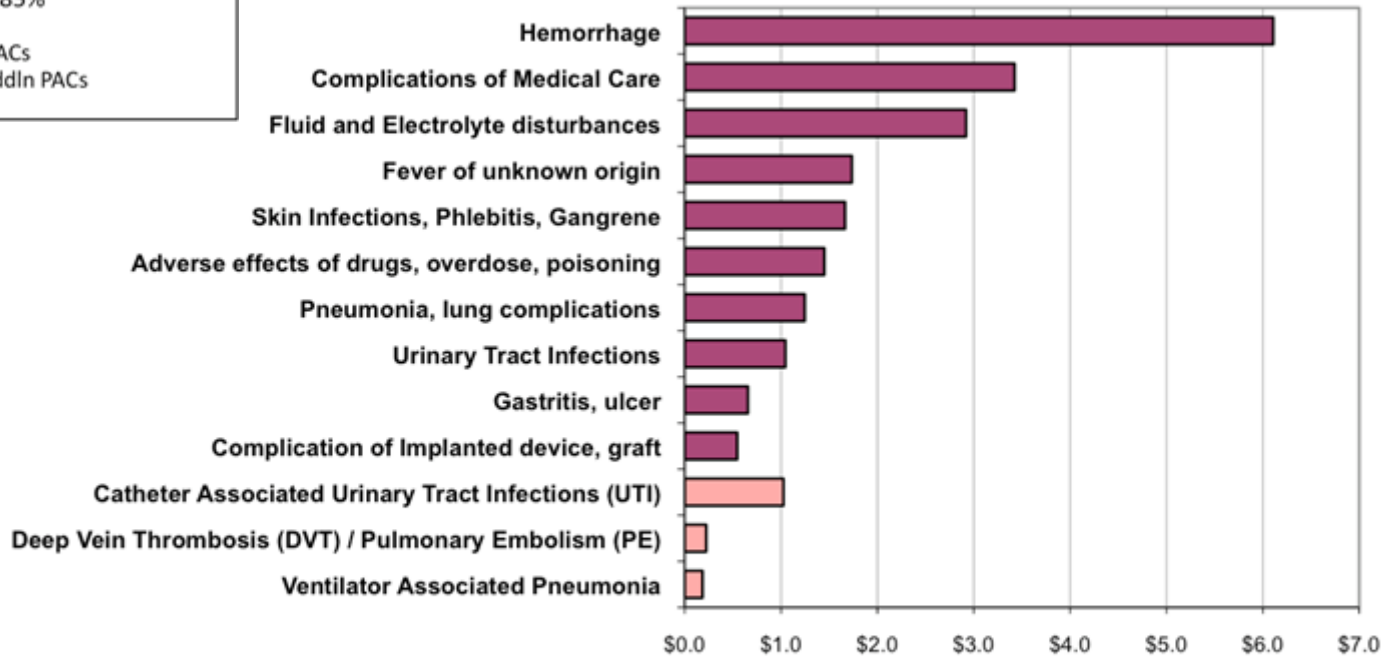
HACs vs. PACs (Hip Replacement)

Percent of Total Stay Costs
with either HACs or addln PACs



■ Additional Burden of Stays with HACs
■ Additional Burden of Stays with addln PACs

Hip Replacement ECR
Total Stay Costs by HACs (N=699 PAC Stays)



Total PAC Stay Costs (\$ in Millions)

■ Hospital Acquired Conditions (HACs): CMS Defined
■ Additional Potentially Avoidable Complications (PACs): Prometheus Defined



Average Costs across ECRs

	Knee	Hip	AMI	CHF	Diabetes	COPD
# Unique Patients	3,403	2,076	13,977	48,878	218,541	92,126
Total Dollars Modeled (in millions)	\$93 M	\$55 M	\$732 M	\$1,333 M	\$1,327 M	\$324 M
Average Dollars for ECR	\$27,415	\$26,471	\$52,382	\$27,267	\$6,076	\$3,337
Average Typical	\$23,692	\$22,702	\$38,919	\$8,765	\$3,002	\$2,171
IP facility	\$18,249	\$18,491	\$35,128			
Typical Professional	\$5,208	\$4,512	\$6,680	\$4,273	\$629	\$871
Typical Pharmacy	\$1,703	\$1,241	\$1,027	\$4,633	\$2,602	\$1,518
Other (Typical portion of PAC stays)	\$3,388	\$5,187	\$33,314			
Average PAC	\$3,723	\$3,770	\$14,243	\$27,860	\$6,685	\$2,849
Added Burden for PAC stays	\$2,382	\$2,804	\$8,036	\$40,727	\$2,743	\$12,034
Re-admission stays	\$9,630	\$10,492	\$37,921			
PAC professional	\$390	\$1,027	\$7,836	\$2,606	\$1,268	\$725
PAC Pharmacy	\$155	\$298	\$1,125	\$908	\$2,852	\$412
Other Provider-specific variation	\$1,422	\$1,039	\$1,813			



What have we found to-date:

- “Defects” – what we refer to as Potentially Avoidable Complications” – consume an average of 25 cents on every dollar of an acute care or procedural ECR, and an average of over 60 cents on every dollar of a chronic care ECR.
- Never events, Hospital Acquired Conditions and re-admissions constitute the bulk of the inpatient acute and inpatient procedural PACs
- Current PAC dollars can be used to create powerful incentives to pay for the underuse AND reduce PAC rates, thus creating a win-win-win for providers, payers and patients



Summary Findings across ECRs

	Knee	Hip	AMI	CHF	Diabetes	COPD	Overall
# Unique Patients	3,403	2,076	13,977	48,878	218,541	92,126	383,926
Total Dollars Modeled	\$93 M	\$55 M	\$732 M	\$1,333 M	\$1,327 M	\$324 M	\$3,865 M
% Patients across ECRs	0.9%	0.5%	3.6%	12.7%	56.9%	25.3%	100.0%
% Dollars across ECRs	2.4%	1.4%	18.9%	34.5%	34.4%	8.4%	100.0%
% ECR Costs as Typical	86.4%	85.8%	72.8%	30.7%	38.8%	63.4%	46.3%
% ECR Costs as PACs	13.6%	14.2%	27.2%	69.3%	61.2%	32.6%	53.33%

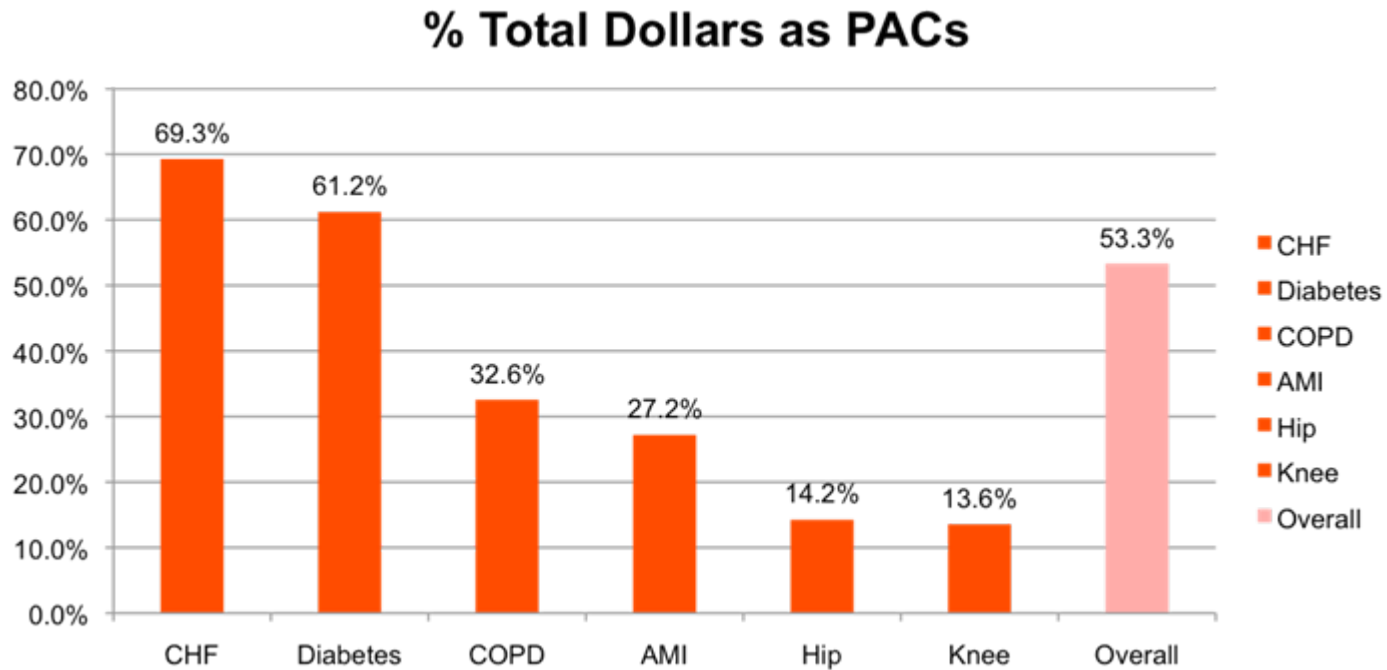
Maximum Dollars in ECR

Biggest Potential for Savings

Maximum Patients Impacted



PAC Dollars across ECRs



ECR	CHF	Diabetes	COPD	AMI	Hip	Knee	Overall
% Total Dollars as PACs	69.3%	61.2%	32.6%	27.2%	14.2%	13.6%	53.3%
# Patients	48,878	218,541	97,051	13,977	2,076	3,403	383,926
# PAC Dollars	\$923 M	\$812 M	\$105 M	\$199 M	\$7.8 M	\$12.6 M	\$2,061 M
Total Dollars in ECR	\$1,333 M	\$1,328 M	\$324 M	\$732 M	\$55 M	\$93 M	\$3,865 M



Open source nature

- Publish our methodology and results on our website: www.prometheuspayment.org
- Complete disclosure and transparency
- Consultation and support on a limited basis
- Encourage feedback and input from all users



Collaboration

- Code sets and boundaries for ECRs were created with the help of several groups:
 - Chronic Medical ECRs:
 - AHRQ (Dr. Steve Bandeian) – provided definitions for triggers & complications: DM, COPD, Asthma, CAD, HTN
 - Clinical Working Groups provided bundle of services
 - Hip / Knee ECRs:
 - Premier Trigger Definitions
 - CMS: Definitions of HACs / Federal Register discussion
 - Bariatric Surgery:
 - Johns Hopkins Dr. Jonathan Weiner sent trigger codes, complications, results of their analysis, papers
 - Health Partners sent Clinical Guidelines



Collaboration continued

- We're getting feedback from our pilot site partners:
 - HealthPartners has run the AMI and Diabetes ECRs and helped refine the model
 - Crozer Keystone has run the hip and knee replacement models and helped identify areas of improvement
- We're coordinating with others:
 - Brookings as they work on a RWJF-funded effort
 - NQF as it works on defining Episodes of Medical Care

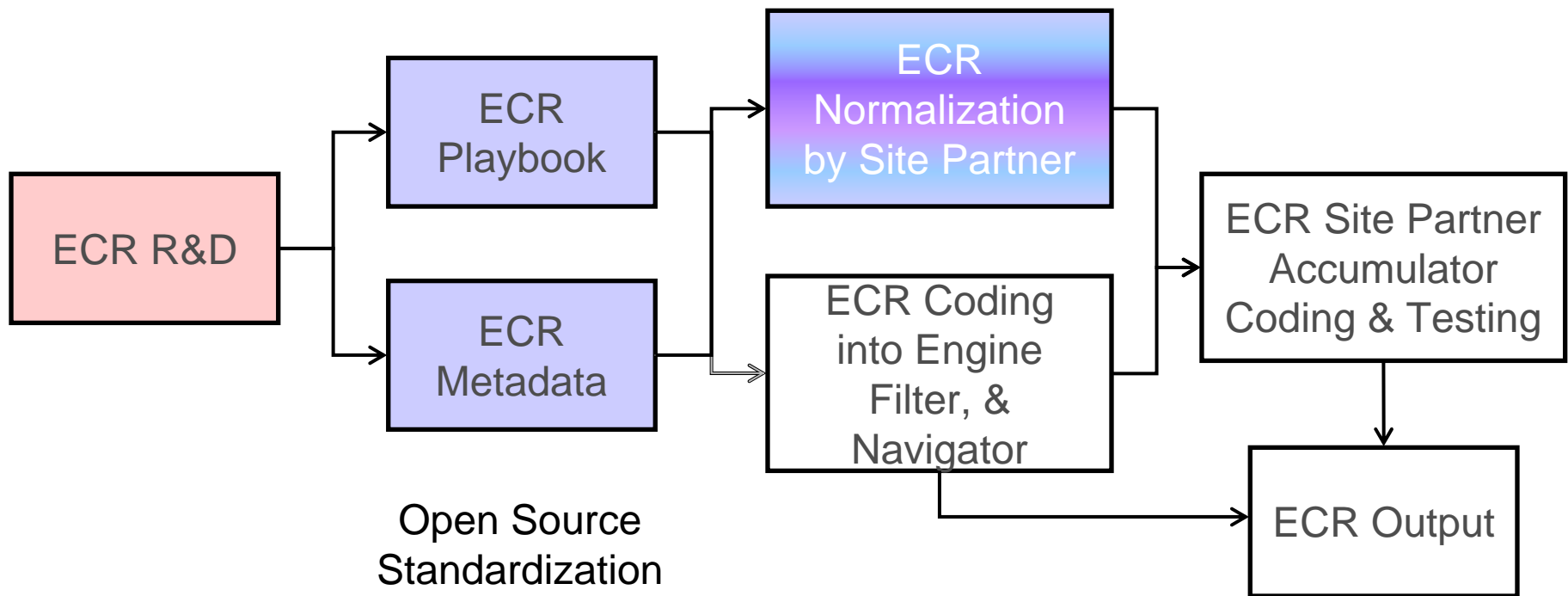


ECR Standardization

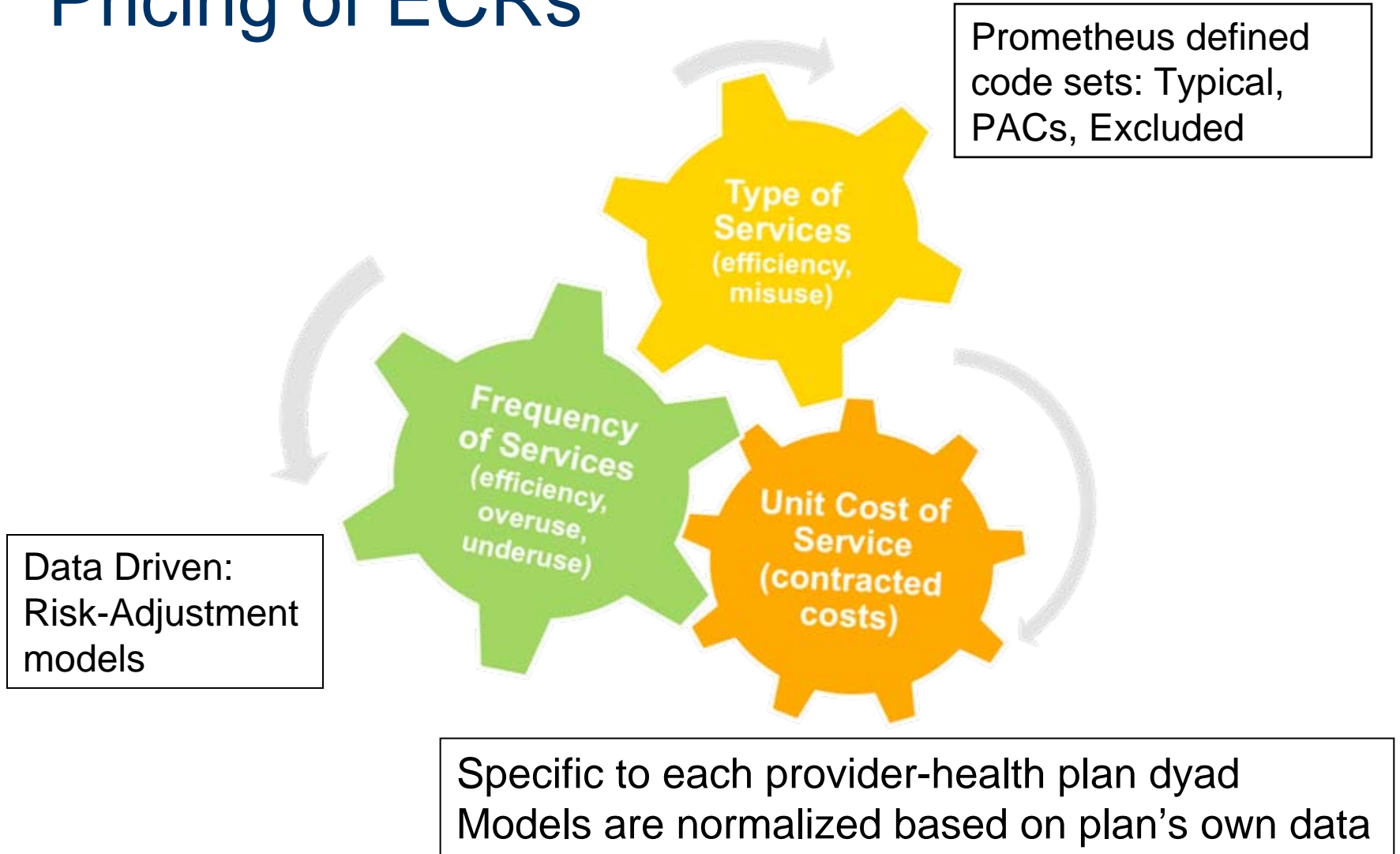
- User-friendly SAS codes
 - will enable any health plan's data to be analyzed according to the Prometheus methodology
 - will have ICD-9 & CPT code mappings, CCS category mappings, and NDC code mappings, along with rules for exclusions and criteria for assignments to typical and PAC buckets
- File formats and mapping of health plan data to standard formats



High-level Process Map for ECR Development & Implementation



Pricing of ECRs

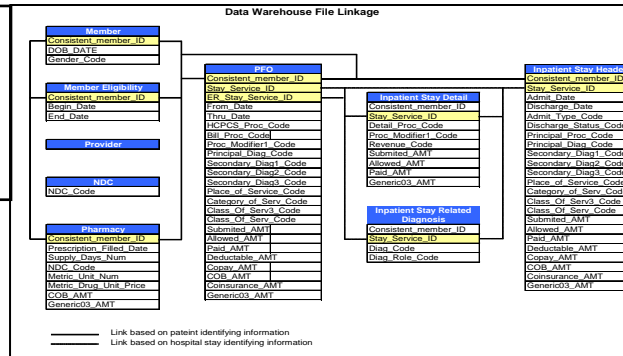




Health Plan ECR Normalization

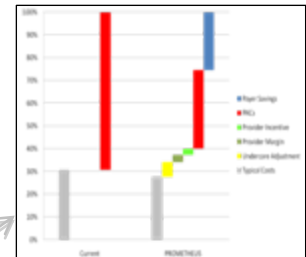
Health plan A's data

Map to
Standard
File
Formats



Pass through User-
friendly SAS codes

Get Distribution of
Typical Costs and
PAC dollars
for each ECR type



Develop Plan-
specific Risk
Adjustment model

Variables	N	Coef	Intercept	Patient 1	Patient 2	Patient 3
Intercept	47,019	9.08215	1	1	1	1
PTCA, thrombolysis	28,280	0.75802	1	1	1	1
Diagnosis center: catheterization, coronary angiography	30,960	0.44084	1	1	1	1
Insertion of Ballon Pump	986	0.22495	1	1	1	1
Bleed transfusion	1,008	0.13609	1	1	1	1
Diagnosis: abnormality of heart	2,006	0.06097	1	1	1	1
Competitive heart failure, congestive heart failure	11,542	0.00316	1	1	1	1
Coronary (dys)thrombosis	12,111	0.00265	1	1	1	1
Coronary atherosclerosis and other heart disease	45,103	0.00265	1	1	1	1
Admission source: ED vs. Other/Another home	33,551	0.11923	1	1	1	1
Bed size of hosp: Large vs. Medium/Small	36,294	0.01421	1	1	1	1
Days of patient (inpatient) - Other facility vs. intermediate-term hosp	3,267	0.10031	1	1	1	1
Race (dichotom): Black vs. White/Asian/Hispanic	2,758	0.00705	1	1	1	1
Admission day is a weekend	39,672	0.03334	1	1	1	1
Med House & quarter for patient exp. \$1 to <\$15 vs \$15 to >\$15	14,886	-0.00363	1	1	1	1
1-reference-informed Amount (No Technical Risk)				\$71,160	\$36,927	\$16,670



Options for ECR Normalization

- Health plans can do it themselves using our user-friendly SAS codes and standard file formats that we will make publically available on our website
- Health plans can send their data to Masspro / others for analysis



Summary:

PROMETHEUS Payment Reform assigns responsibility for care back in the hands of physicians

- Uses episodes to develop global fees (evidence-informed case rate: ECR)
- Builds in process measures into base case rates
- Evaluates routine patients cared by high quality physicians
- Adjusts payments for risk factors - patient demographics, severity of illness, comorbidities
- Increases base fees by expected cost of complications
- Sets aside funds into a withhold to be released when physicians demonstrate compliance to quality standards
- Need to develop methods to measure appropriateness of care (propensity models) – propensity to perform surgery

Pilot Site Structure

Francois de Brantes

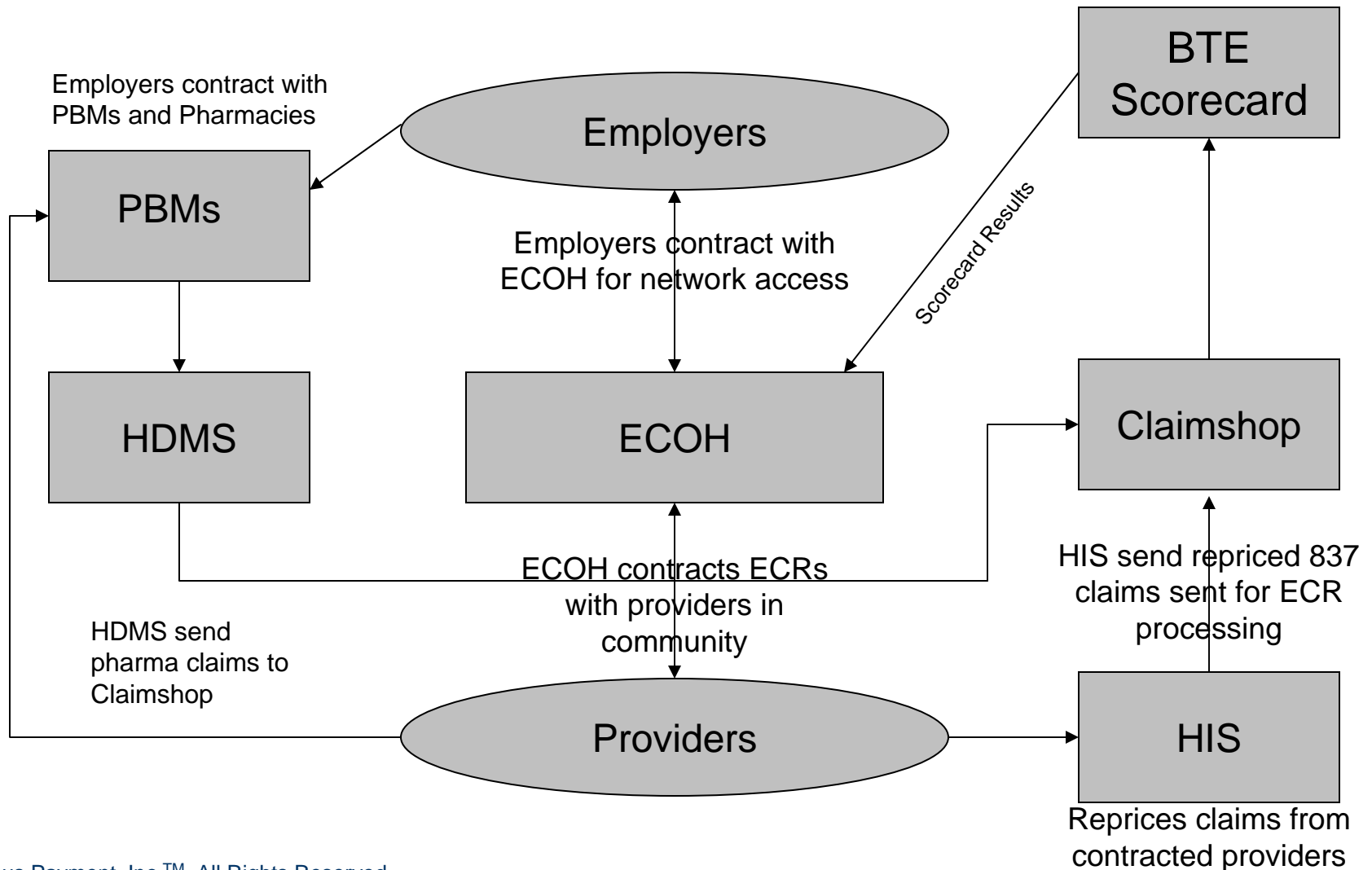


Pilot Sites

- Each is unique
- Each will select its focus
- There are some important steps each must take:
 - Normalize ECRs for each payer – create baselines and site-specific calibration of ECR PAC rates and severity factors
 - Engage providers in understanding market dynamics and opportunities
 - Take it one step at a time

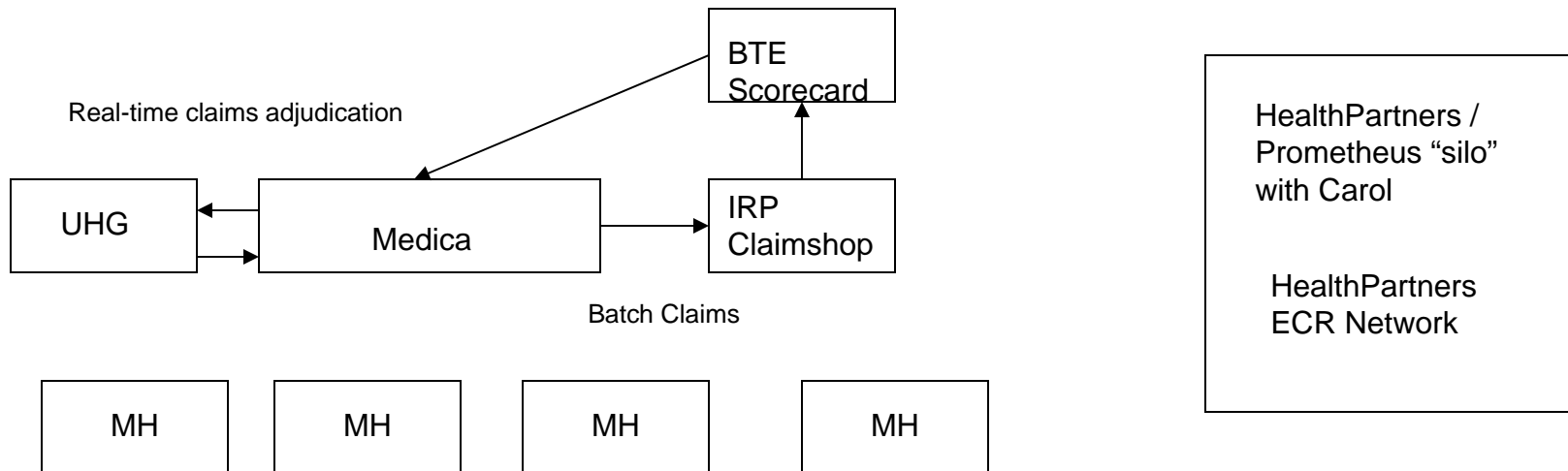
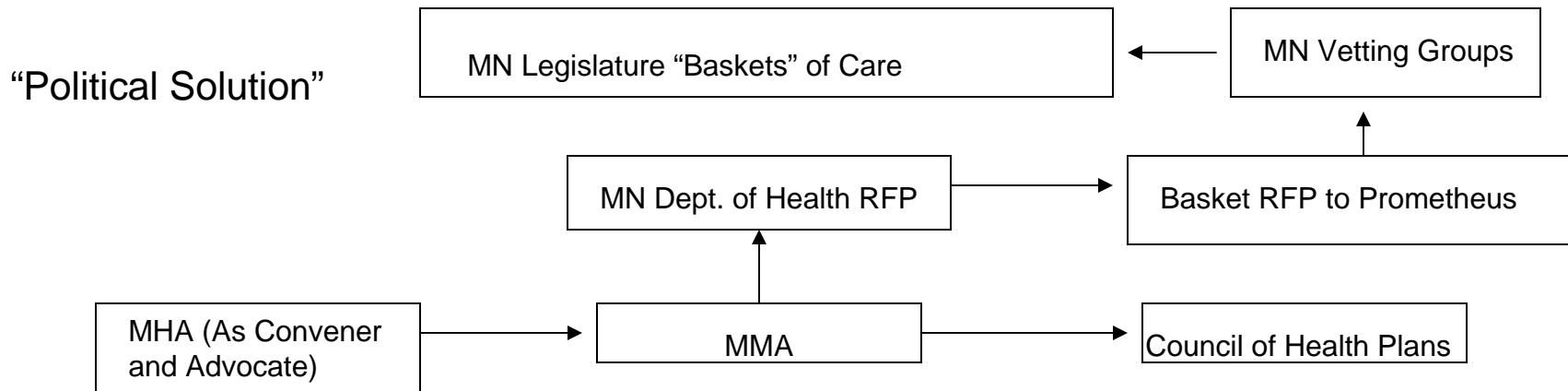


ECOH Pilot Structure





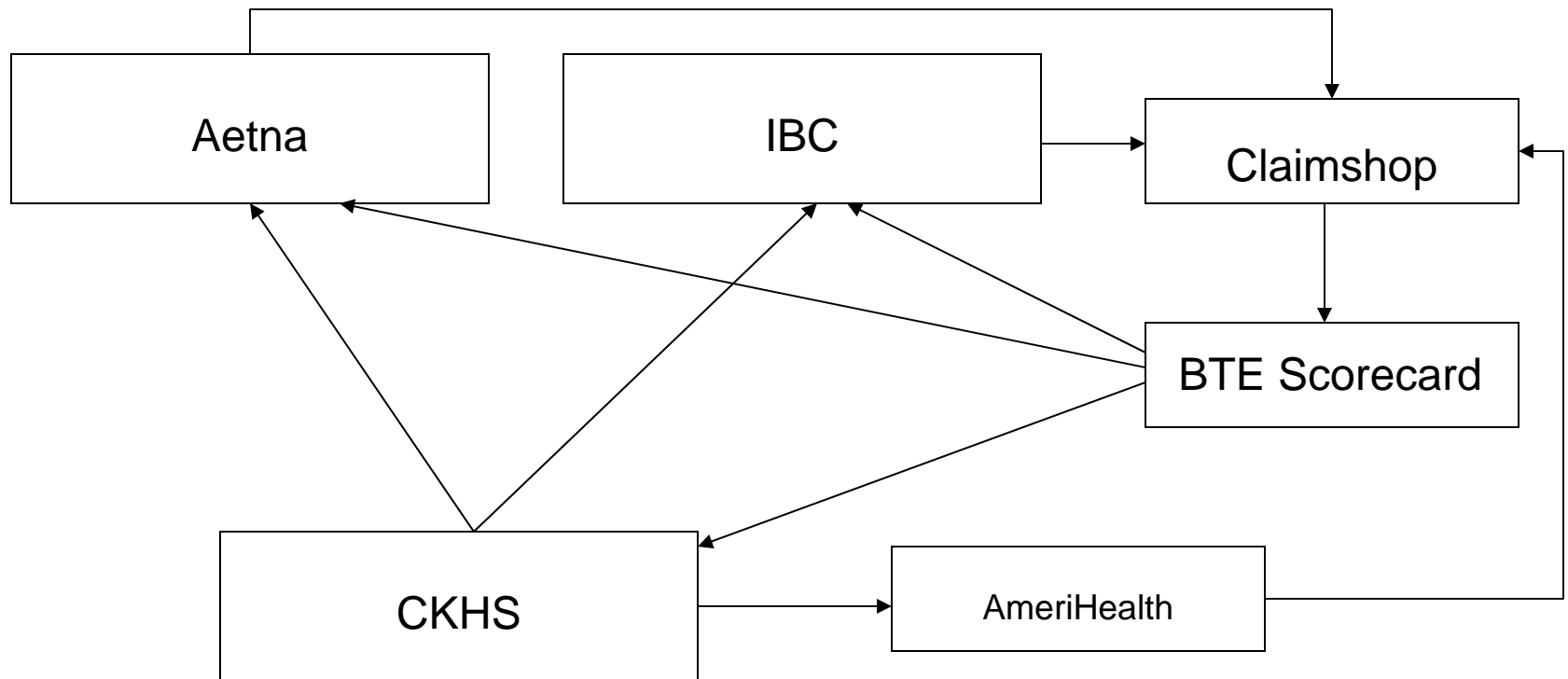
MN Emerging Pilot Structure



MN “Market Solution”



Crozer Keystone Pilot Site Structure





Implementing Prometheus in Rockford

Jim Knutson
Aircraft Gear Corporation
October 19, 2008



Introduction

■ Aircraft Gear

- Family owned business headquartered in Rockford, IL since 1947
- Manufacture and distribute driveline products for auto and off road applications.
- 100 employees at two locations.



Intro Continued

- **Employers Coalition on Health**
Formed by 11 Rockford based employers in the early 90's to address escalating health costs.
- Currently 160 member companies with 26,000 employees.
- Typical reimbursement contracts based on DRGs, RBRVS and some discount of billed charges.



Failed Efforts – Supply Side

- Inability to evaluate new technology.
- Contracts misallocated risk.
- High transaction costs led to dysfunction and frustration.



Failed Efforts – Demand Side

- Poor quality decision making regarding care choices.
- Inability to sustain programs (Individual responsibility vs. general reciprocity).
- Health promotion and wellness can't fix everything.



Prometheus

- Ration based on evidence rather than eligibility.
- Revolutionary as opposed to incremental.
- Not intended to address new technology risk.
- Not intended to address comparative effectiveness.
- Reduce transaction costs. (Healthcare is credence good for payor and patient)



Getting Started

- Take inventory.
 - Review existing data.
 - ECOHhas coalition data from January 1, 2008.
 - Contact providers.
 - Identify contracting parties.
- Create realistic expectations.
 - Cost moderation vs. immediate reduction.
 - Expand time horizon beyond traditional periods.
 - Build short feed back loops to deal with surprises.
 - Create positive momentum.



Issues

- Start up expenses.
- PAC allocations.
 - Identify elements of PAC that are concerns.
 - Acute vs. chronic care.
 - Switching providers in mid term.
- Triggers, Filters, Accumulators and Navigators.
- Align coverage policy.
- Support service suppliers.
- Quality scorecard.
 - Cost of compliance.
 - Validity of measures.



Next Steps

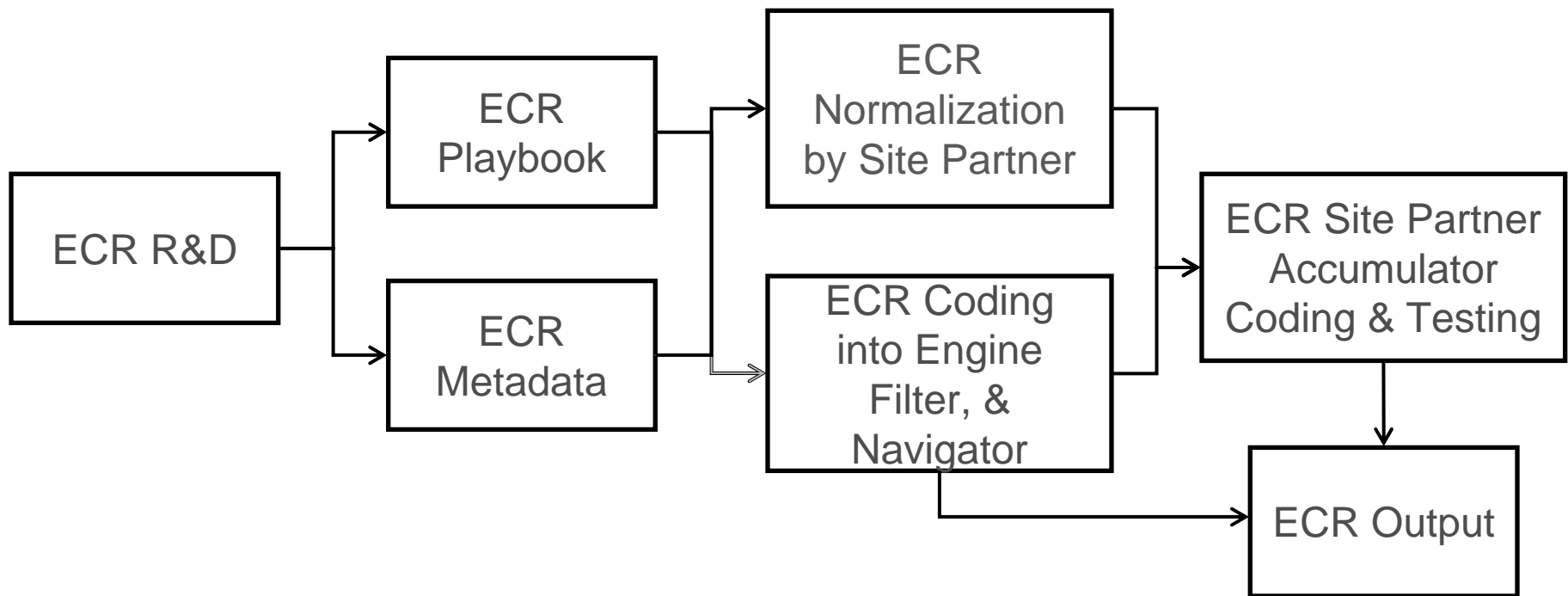
- Start small and simple.
 - Pick conditions where there is consensus.
 - Postpone prospective payment and withhold.
- Coordinate activities between TPA, Re-pricer and Prometheus.
- Consider Prometheus' role in healthcare (still need to address non Prometheus care).

Operational Implementation

Chad Brown, MBA
Operations Leader



High-level Process Map for ECR Development & Implementation





ECR Business Rules Document and Operations Guide

■ Business Rules

— THE WHAT:

- Converts ECR development rules into definitions and rules that can be programmed into the Prometheus Engine
- Serves as a historical document allowing a transparent view of decisions and changes made by the Prometheus executive management team as it converts theory into practice

■ Operations Guide

— THE HOW:

- Describes in specific technical detail how to connect to the Prometheus Engine
- Details and lists operational requirements and serves as a guide and assistor to pilot sites during the implementation process



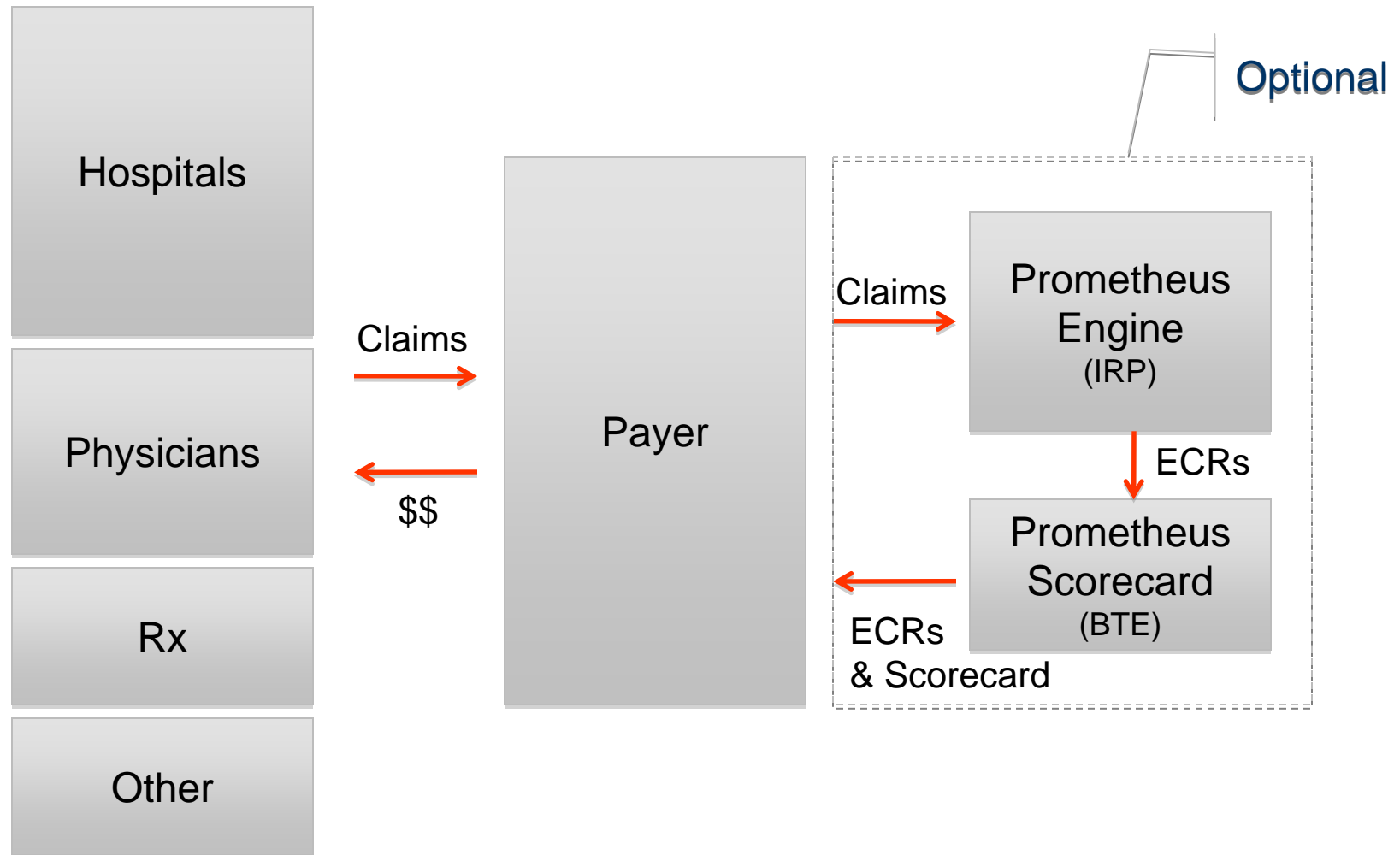
Principles of implementation¹

- “virtual” ECRs fed through normal FFS claims streams – no need for prospective payment or complex contracting
- Upside only – no provider financial risk in first 18 to 24 months so that we can fully beta test all ECRs, severity algorithms, and provide information on upside and downside to providers – but no upside paid unless the provider meets scorecard requirements
- Anyone can play – no need for IDNs, PHOs or other integrated organizations.
- It's only complicated in the back rooms, not the physician office or the plan's core processes

1. See “Making it Real” at www.prometheuspayment.org



Implementation process





Data flows

- Hospitals, physicians, pharmacies, etc...submit claims as they do now – no additional requirements are needed
- Plans pay those claims as contractually negotiated
- Plans pass claims to Prometheus' subcontractor – IRP Claimshop – for conversion into ECRs
- IRP passes ECRs to Bridges To Excellence for scorecard processing, and BTE passes information back to plans



Engine components definitions

- **Filter** – a process that determines and evaluates code content (on a claim) for ECR eligibility
- **Navigator** – codes when present on the claims help determine if a particular claim belongs to exclude, PAC or typical
- **Accumulator** – there are two types:
 - PAC accumulator and
 - Typical accumulator
- The accumulator helps create the ECR account and not only holds the claims into the two accumulators but also has the dollars associated with each bucket for a given ECR to help with the dollar reconciliation



Hip Replacement ECR Accumulator budget

	Hip Repl Facility				Hip Repl Professional			
	Factors	Patient 1	Patient 2	Patient 3	Factors	Patient 1	Patient 2	Patient 3
Cost of Care of Typical Hip Repl Case		\$17,452	\$17,452	\$17,452		\$3,161	\$8,747	\$20,359
Allowance for PACs		\$1,689	\$1,689	\$1,689		\$92	\$192	\$402
Flat Fee Allowance (25% of compl costs spread over all)	\$441	\$441	\$441	\$441	\$34	\$34	\$34	\$34
Proportional Allowance	7%	\$1,248	\$1,248	\$1,248	2%	\$57	\$158	\$368
Net Percent Allowance for PACs		10%	10%	10%		3%	2%	2%
Margin	10%	\$1,745	\$1,745	\$1,745	10%	\$316	\$875	\$2,036
Total ECR per Patient by Facility / Professional		\$20,886	\$20,886	\$20,886		\$3,569	\$9,814	\$22,797
Total ECR per Patient (severity + PAC allowance + margin)		\$24,455	\$30,700	\$43,683				

- Every newly triggered ECR gets assigned a budget
- Budgets are based on available information about the severity of the patient and historical claims data from the payer
- Budgets are split between inpatient stay, professional services, and other
- PAC Allowances are based on the plan's most recent plan-wide PAC rate per procedure or condition (which includes readmission rates)
- Claims flow from the plan into the Engine and into an ECR where the actual is continuously compared to budget



ECR Engine Generations

- Generation 1: Operates ECRs on a retrospective, no-downside batch process (Complete by January 1st, 2009)
- Generation 2: Beta Version of Gen 1 for operations, rules refinement and preparation for real-time downside ECRs (Complete by January 1st, 2010)
- Generation 3: Operates ECRs on both retrospective and real-time basis (Complete by January 1st, 2010 or 2011)



Baking It In HealthPartners Approach

Carrie Tichey
October 19, 2008

Outline

- Payment Reform Principles
- Package Payment Design Assumptions
- Care Package Development
 - Normalizing the data-the heavy lifting
 - Provider Engagement
 - Reimbursement Model
- Negotiating the Deal
- Tracking and Measuring the Outcomes

Payment Reform Principles

- Necessary to remove barriers to transforming the health care system
- Should support high quality affordable patient-centered care and outcomes.
- Align incentives for innovation and standard use of best practices so as to offer high quality, evidence-based care.
- Reduce unnecessary costs and waste in both administration and care delivery
- Support the best science and improved efficiency
- Allocate risk to the entities best able to manage that risk
- Be transparent for patients on quality and cost and the services they should expect to receive
- Be easy to understand and shared openly, building an open source, public domain, community wide capability

Package Price Design Assumptions

- For engaged providers-built in payment approach
- Not every provider will participate
- No employer opt in/out capabilities
- Available for all commercial market segments, insured and self-insured

Package Price Design Assumptions

- Year one of pilot will be fee for service with a reconciliation to a provider specific case rate
- Initial pilot will not have member benefit impact
- Focus on ability to operationalize vs. major trend management outcome
- Keeping pilot mindset
- Perfection is the enemy of good enough

Key Components of Package Price Model

- Care Package Specification Workgroup
- Network Management
- Provider Engagement
- Performance & Reporting

Care Specification Workgroup

ECR Selection

➤ Selection Criteria:

- Ease of implementation
- Event driven condition
- Clearly defined start/end date
- Community accepted care guidelines
- Provider interest
- Playbook availability

➤ Selected AMI for pilot

Care Specification Workgroup

Normalizing the Data

➤ Review the Playbook:

- Playbook/code sets and instruction manual are comprehensive
 - Time saver
- Cross functional team to review and understand the playbooks
 - Required a team effort

➤ Data Set Preparation:

- Compiled HPI data into the playbook format

Care Specification Workgroup

Normalizing the Data

Model Data Set Analysis:

- Benchmarked HPI data to Prometheus data
- Compared key HPI demographics to Prometheus
 - Included number of cases, dollars, age, gender, products, LOS, ER admission ratios, discharge status, etc.

Result: *HPI demographic data varied from Prometheus due to product mix – Commercial vs. Medicare*

Care Specification Workgroup

Normalizing the Data

Analysis of Major ECR Components:

- 3 day prior
- Inpatient Index
- 30 day post discharge follow-up

➤ Compared key HPI demographics to Prometheus

- Included number of cases, dollars, age, gender, products, LOS, ER admission ratios, discharge status, etc.

Result: *Playbook updates required to reflect recent code changes and regional variation.*

Care Specification Workgroup

Normalizing the Data

➤ Case comparison: Typical vs. PAC

- Broke typical and PAC for Inpt. Index, 30 day post discharge follow-up and 3 day prior
- Benchmarked using ratio of HPI cases to Prometheus cases

Result:

- *3 day prior: removed from model due to inconsistency and inability of providers to control*
- *Inpt. Index: HPI had a lower percentage of PAC*

Care Specification Workgroup

Normalizing the Data

➤ Analysis of cases within Typical and PAC

- Benchmarked to Prometheus defined categories (comorbidities, procedures, complications, risk factors and pharmacy)
- HPI internal cross functional team completed actual line by line detail testing on a random sample of cases

Result:

- *Inpt. Index: “white noise” due to exclusionary model*
- *30 day post discharge follow-up:*
 - ✓ *Use of AMI diagnosis (410.XX) for up to 8 weeks*
 - ✓ *PAC generation limited to certain specialties (i.e. Radiology)*

Provider Engagement

- Introduced concept to medical directors and administrators

Result:

- *Varied levels of provider engagement. MN legislative direction has supported provider engagement.*
 - *Open source model provided credibility and uniform approach amongst payers*
- Shared model results with providers and sought clinical feedback

Result:

- *New drugs were added to the playbook*
- *Moved complications to comorbidities*
 - *left bundle block branch*
 - *conduction disorders*
- *Ability to understand what was present on admission vs. complication during inpatient stay*



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Reimbursement Model

➤ Inpatient Index

- *Use of regression model to determine provider specific payment level*

Result: *Inpatient DRG Case Rate drives regression model/payment*

➤ 30 Day Post Discharge Follow-up

- *Still working on this*

➤ Overall regression

- *Analyst with strong statistical skills*
- *Regression work can NOT get to far ahead of the definitional work or you have a lot of re-work.*
- *Developed approaches to work with small N's*

Negotiating the Deal

➤ Proposed pilot approach

- Pay Fee For Service (FFS) upfront with a reconciliation to case rate
- Shared savings for high performing/efficient providers
- Use first year for all parties to gain confidence in the model

Tracking and Measuring Outcomes

- Performance to the case rate will be reported
- Quality scorecard will be developed

Package Price

Other:

Frequent Check-ins with Amita, especially when benchmarking is essential!!

Questions?

Carrie Tichey

Carrie.Tichey@HealthPartners.com

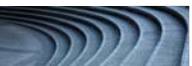
(952) 883-5114

National Healthcare Incentives Institute Prometheus ECR Tracker

Gregory S Everett
VP, Operations
IRP Claimshop

Med Assets and IRP Claimshop

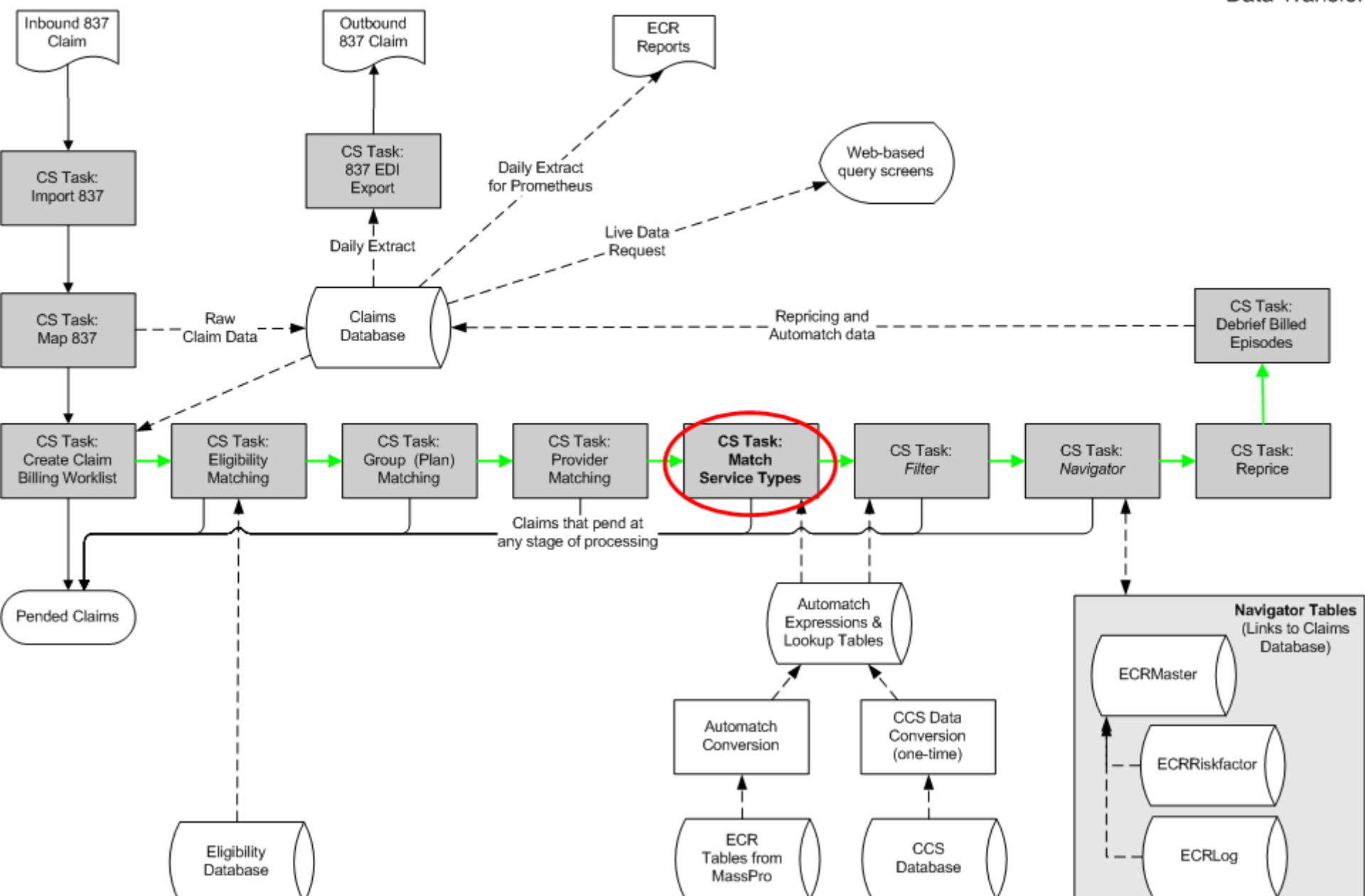
- Healthcare Technology Company
 - Proven Experience w/ Automating Episodes of Care
 - Experience w/ Pay For Performance
 - Objective Third Party Between Payors and Providers
 - Modeling Program Tied to Production Claims' Database
- IRP Claimshop Architecture
 - Web based external user interface
 - Proprietary Back Office Application for Batch Processing
 - SQL Server 2005



Claimshop Tracker Implementation

MC 9/26/2008

This diagram shows how the Claimshop CBO Repricer Engine will be configured to perform Prometheus ECR Filtering and Navigating.



Sample Extract of MassPro ECR Data Feed (XML)

ECR Master Table (fragment)

ecr_name	ecr_desc	start episode	end episode	ecr_formula
AMI	Acute Myocardial I	admission date - 3 days	discharge date + 30 days	((2.71828182845904) raised to the POWER ECR_FACTOR
HIP	Hip Replacement	admission date - 30 days	discharge date + 180 days	
DIAB	Diabetes Mellitus	trigger	365 days	((ECR_FACTOR*25)+1) raised to the 4th power

RISK_FACTOR Table (fragment)

ecr	rf_code	rf_desc	factor_p	factor_i
DIAB	P13	home health, transport	0.6605	-4.0000

ECR_CODE_SET Table (fragment)

ecr_name	code type	CODEFROM	CODETO	claim_type	field	ecr_action	rf_code	Priority	Filter	EBM
DIAB	CCS PX	236	236	P	ANY	TYPICAL	P13	2	no	no
DIAB	CCS PX	237	237	P	ANY	TYPICAL	P13	2	no	no
DIAB	CCS PX	238	238	P	ANY	TYPICAL	P13	2	no	no
DIAB	CCS PX	239	239	P	ANY	TYPICAL	P13	2	no	no
DIAB	CCS CPT	236	236	P	ANY	TYPICAL	P13	2	no	no
DIAB	CCS CPT	237	237	P	ANY	TYPICAL	P13	2	no	no
DIAB	CCS CPT	238	238	P	ANY	TYPICAL	P13	2	no	no
DIAB	CCS CPT	239	239	P	ANY	TYPICAL	P13	2	no	no
DIAB	hcpcs	A0302	A0302	I	ANY	TYPICAL	P13	1	no	yes
DIAB	hcpcs	A0322	A0322	I	ANY	TYPICAL	P13	1	no	yes
DIAB	cpt	99078	99078	I	ANY	TYPICAL	P13	1	no	yes

ECR_CODE_SET Table (fragment of data employing AND logic)

ecr	CType	From	To	Type	field	CType	From	To	field	ecr_action	rf_code	Rank	Filter	EBM
HIP	ICD DX	714.0	714.0	I	PRIMARY	ICD PX	81.51	81.52	ANY	TRIGGER	TRG	1	yes	no
HIP	ICD DX	715.05	715.05	I	PRIMARY	ICD PX	81.51	81.52	ANY	TRIGGER	TRG	1	yes	no
[rows removed for clarity]														
HIP	ICD DX	730.15	730.15	I	PRIMARY	ICD PX	81.51	81.52	ANY	TRIGGER	TRG	1	yes	no
HIP	ICD DX	730.25	730.25	I	PRIMARY	ICD PX	81.51	81.52	ANY	TRIGGER	TRG	1	yes	no

ECR-to-Automatch Conversion
Process

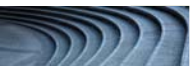
Sample Converted CBO Automatch Data

ST Name	AutoMatch Expression
DIA_P13_I_1_0_1	CLMTYPE = UB AND PROCHAS([DIA_P13_I_1_0_1 PROC LIST])
DIA_P13_P_2_0_0	CLMTYPE = HCFA AND (CCSCPTHAS([DIA_P13_P_2_0_0 CCSCPT LIST]) OR CCSPXHAS([DIA_P13_P_2_0_0 CCSPX LIST]))
HIP_TRG_I_1_1_0	CLMTYPE = UB AND (PRIMDIAGHAS([HIP_TRG_I_1_1_0 LIST1]) AND PROCHAS([HIP_TRG_I_1_1_0 LIST2]))

Table Name	CodeFrom	CodeTo
HIP_TRG_I_1_1_0 LIST1	714	714
HIP_TRG_I_1_1_0 LIST1	715.05	715.05
HIP_TRG_I_1_1_0 LIST1	730.15	730.15
HIP_TRG_I_1_1_0 LIST1	730.25	730.25
HIP_TRG_I_1_1_0 LIST2	81.51	81.52
DIA_P13_P_2_0_0 CCSCPT LIST	236	239
DIA_P13_P_2_0_0 CCSPX LIST	236	239
DIA_P13_I_1_0_1 PROC LIST	A0302	A0302
DIA_P13_I_1_0_1 PROC LIST	A0322	A0322
DIA_P13_I_1_0_1 PROC LIST	99078	99078

Sample Reports

- Pilot Site Partner Summary Report
- Patient / ECR Summary Report
- ECR Detail Report



Pilot Site Partner Summary Report

Overall

Type of Episode	Number of Episodes	Total Budget for Typical	Total Budget for PAC	Total Actual for Typical	Total Actual for PAC	Reconciliation / Savings / Loss
Diabetes	xxx					
AMI	x					
CHF	xx					
CAD	xxx					
...						

By Provider For all episodes the provider was involved in

Type of Episode	Number of Episodes	Total Budget for Typical	Total Budget for PAC	Total Actual for Typical	Total Actual for PAC
Diabetes	xxx				
AMI	x				
CHF	xx				
CAD	xxx				
....					

By Patient All episodes the patient has

Type of Episode	Number of Episodes	Total Budget for Typical	Total Budget for PAC	Total Actual for Typical	Total Actual for PAC
Diabetes	xxx				
AMI	x				
CHF	xx				
CAD	xxx				
....					



ECR Summary Report

Pilot Site Identifier

ECR Name

Date triggered

Date concluded

Date Terminated

Patient ID

Provider Name

type

Full Address, Street, City, State, Zip

NPI

DEA

For each Patient Episode

	ECR Budget	ECR Actual	Revised Budget	Variance to Budget	Variance to Revised Budget
Typical					
<i>RX</i>				0	0
<i>Outpatient prof</i>				0	0
<i>Outpatient stay</i>				0	0
<i>Inpatient stay</i>				0	0
<i>Inpatient prof</i>				0	0
<i>other</i>				0	0
Sub total	0	0	0	0	0
PACs					
<i>RX</i>					
<i>Outpatient prof</i>					
<i>Outpatient stay</i>					
<i>Inpatient stay</i>					
<i>Inpatient prof</i>					
<i>Readmissions</i>					
<i>other</i>					
sub total	0	0	0	0	0
total	0	0	0	0	0

Notes:

All providers touching the ECR get listed

A revised budget is only built after the ECR is concluded and if sufficient data and follow-up analysis warrant an adjustment of the original budget

ECR Detail Report

Pilot Site Identifier

ECR Name

ECR ID

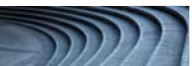
Date triggered

Date concluded

Date Terminated

Patient ID

Claim #	Claim Type (inpatient facility, professional etc.)	Typical or PAC	Risk Factor it got assigned to	Date of Service	Principle Diag	Site of Service	Provider Type	Provider Specialty	Provider ID	Contract Type (DRG, % Off, Per Diems, Case Rates)
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PROMETHEUS Payment Pilot Evaluation

Meredith B. Rosenthal, Ph.D.

October 19, 2008



Acknowledgements

- Financial support from the Robert Wood Johnson Foundation; Center for Health Improvement is providing oversight for the pilots and evaluation
- M. Susan Ridgely, RAND Corporation is Principal Investigator for the evaluation



RWJF Evaluation

- Four pilot sites that will test the implementation of PROMETHEUS with multiple payers, providers
 - Implementation evaluation
- Simulation of impact of PROMETHEUS payment relative to status quo user participant administrative data



Implementation Analysis

- Document structural changes in care delivery, organization, data capture that occur with implementation
- Compare views and experiences of different groups of stakeholders
- Examine barriers and factors that facilitate transition to PROMETHEUS Payment
- Identify aspects of the design or implementation that require further development for rollout



Pilot Sites

- Rockford IL: Employer Coalition on Health
- Minneapolis, MN: HealthPartners, Medica, Carol
- Others TBD



Methods for Implementation Evaluation

- Gather baseline data from participants and public sources: patients, enrollees, payment approaches, information systems, organization, integration, QI programs, etc.
- Conduct initial site visit calls to characterize scope, scale, and planned timing of pilot
- Site visits using semi-structured protocols; meetings with key participants and other stakeholders



Simulation Analysis

- PROMETHEUS ECRs have been developed using large national data sets
- Calibration is needed for each pilot site
- Prevalence of episodes associated with ECRs, risk factors, and complications within each site is unknown
- Extent to which payment model would create winners and losers among practices is unknown



Key Questions for the Simulation

- Based on the payer's fee schedule, patient mix, and the treatment patterns of providers that care for its patients, will PROMETHEUS result in an increase or reduction in the total amount of money spent on eligible patients?
- Which providers would win/lose in terms of gross revenues with PROMETHEUS, assuming no behavioral changes (i.e., practice patterns remain as they were in the baseline data)?
- How will funds be distributed – base ECRs? PAC allowances? Performance incentives? Payments triggered by stop-loss?



Simulation Methods

- De-identified claims history from ECOH
- Examine distribution of episode types for which ECRs have been completed – how many? How many are broken by other events? How many have provider switches?
- Add PROMETHEUS Payment logic/algorithms to simulate adjudication under PROMETHEUS
- Compute payment variances
- Model payment variances (plus/minus) as a function of provider characteristics, patient characteristics



Goals of the Early Evaluation

- Both the implementation evaluation and simulation are intended to help refine PROMETHEUS for broader use
- Researchers will look for leading indicators of impact –reports of practice changes such as specialized teams for managing chronically ill patients; re-design of processes for acute episodes
- Evaluation of impacts – on costs, quality – will be in second phase



Conclusions

- Insights from implementing PROMETHEUS Payment in pilot sites will contribute to the evolution and refinement of the payment model
- Generalizable lessons for other payment reforms, however:
 - Issues of reform in multi-payer context
 - Perceptions/reality of risk selection problems
 - Chicken/egg issues of practice redesign and payment reform