VT Health Care Innovation Project
Payment Models Work Group Meeting Agenda
Monday February 3, 2014 2:00 PM – 4:30 PM.
DVHA Large Conference Room, 312 Hurricane Lane, Williston
Call in option: 1-877-273-4202
Conference Room: 2252454

Item #	Time Frame	Topic	Presenter	Relevant Attachments
1	2:00 – 2:05	Welcome and Introductions Approve meeting minutes	Don George and Steve Rauh	Attachment 2: Meeting Minutes
2	2:05 – 2:10	Update on ACO/SSP	Richard Slusky & Kara Suter	
3	2:10– 2:15	Update on Other Work Groups	Georgia Maheras	
4	2:15-2:45	Update on Analytics SOW	Kara Suter	Attachment 3: Scope of Work Overview
5	2:45 – 3:00	Update on EOC Work Stream Process: *Advisory Groups and Other WGs*	Kara Suter	Attachment 4: Work Stream Overview
6	3:00 – 3:30	Review Agendas for March and April Meetings	Kara Suter	Attachment 5: Proposed March Agenda Attachment 6: Proposed April Agenda
7	3:30 – 3:40	Public Comment	Don George and Steve Rauh	
8	3:40 – 4:00	Next Steps and Action Items	Don George and Steve Rauh	Process for Advisory Group Nominations Next Meeting: March 3rd, 2 – 4:30 pm. Montpelier

VT Health Care Innovation Project
Payment Models Work Group Meeting Minutes - Monday, January 6, 2014 2:00 to 4:30pm
EXE 4th Floor Conference Room, Pavilion Building, Montpelier

Attendees: Don George, Stephen Rauh Co—Chairs; Austin Carmone, MVP Health Care; Martita Giard, Todd Moore, Abe Berman, One Care Vermont; Paul Harrington, Vermont Medical Society; Sarah King, Rutland Area Visiting Nurse Assn and Hospice; Lila Richardson, Vermont Legal Aid; Michael Bailit and Kate Bazinsky Bailit-Health Purchasing; Sandra Maguire, Howard Center; Patrick Flood and Tom Pitts, Northern Counties Health Care; Ted Scirotta, Northwestern Medical Center; Andrew Principe; Richard Slusky, Pat Jones, and Spenser Weppler, GMCB; Kara Suter, Beth Tanzman, Alicia Cooper, Luann Poirier, Ann Reeves, and Erin Flynn DVHA; Melissa Bailey, Carrie Hathaway and Diane Cummings AHS; Georgia Maheras, AOA; Nelson LaMothe and George Sales UMass.

Agenda Item	Discussion	Next Steps
1 Welcome & Introductions; Approve meeting minutes; Conflict of Interest Policy.	Don George called the meeting to order. Motion made by Paul Harrington to approve the December 10, 2013 Minutes, second heard, Voted to approve, none opposed, no abstentions. Don brought the Work Groups' attention to the Conflict of Interest Policy requesting that Members sign the Acknowledgement and return to George Sales of the Project Management Team (George.Sales@partner.state.vt.us).	
2 Update on ACO/SSP; Update on Global Budget.	Kara Suter - The Medicaid ACO-SSP contract is being negotiated with anticipated signing by the end of January. Richard Slusky - The Commercial ACO-SSP contract is currently in negotiations with anticipated signing by the end of January. The start date for both programs is still Jan 1, 2014, with a 12 month performance year. A question arose about participation agreements and Richard advised that the program agreement needs to be executed before the provider participation agreements are finalized. Richard discussed a global budget presentation made by Bob Murray to the Green	Global Budget presentation to be sent to WG.

Agenda Item	Discussion	Next Steps
	Mountain Care Board. Two Vermont hospitals have shown interest in global budgets. Maryland is making strides in this area. A question was raised about Vermont's Unified Health Care Budget, which is under the purview of the Green Mountain Care Board. Georgia Maheras explained the work done by the Green Mountain Care Board in 2013 on the Unified Health Care Budget and the Hospital Budgets. She reminded the group of the GMCB's regularly scheduled Thursday 1pm meetings in the Department of Financial Regulation Large Conference Room. The Green Mountain Care Board will be working on its FY15 Hospital Budget process in the coming months. The global budget presentation will be provided to the Work Group after this meeting.	
3 Draft Work Group Charter	Don George noted that no feedback, comments, or edits have been received concerning the proposed draft Charter. Therefore, the Group will operate under the draft as-is, and shall revisit the deliverable and final charter, with approval of the Charter in the near term.	Revisit Charter in future meeting; Members to submit comments on the Charter or Workplan. Please forward to ann.reeves@state.vt.us
4 Overview on Payment Model Work Group Planned Activities	Kara Suter presented "Payment Models Work Group Overview" to the group, which discusses what is in the SIM grant and how Episodes of Care can align with the ACO Shared Savings Program and Pay-for-Performance models. The Work Group then discussed the objectives and program development process. Questions arose on financing and the intricacies of calculating payment incentives for the three payment models. Kara replied that challenges and opportunities will vary across payers. Penalties and incentives will be an opportunity for Work Group to develop the strategy, and the Work Group will need input from all stakeholders, supported by data analytics. There was a question about what would happen if the Work Group chose not to implement Episode of Care Program. Kara replied that it is speculative at this time, but should the Work Group arrive at that conclusion, then a dialogue with CMMI would be necessary and that we cannot predict their reaction. A question arose regarding the CMS – Bundled Payment Care Initiative model in Rutland currently underway. Kara stated this is a good opportunity to collaborate, and	

Agenda Item	Discussion	Next Steps
	suggested we request a speaker from Rutland. Richard discussed the calculations Medicare uses where there are two models occurring simultaneously, like in Rutland.	
5 Update on EOC presentation at Steering Committee.	Don George recapped the Episodes of Care Program presentation made to the Steering Committee noting a reaction on multiple levels: the Steering Committee Members saw the Episode of Care as an integral part of the SIM scope; recognized that the program was within the purview of the Payment Models Work Group to develop; and that the program is complimentary to the other two payment models. The Steering Committee confirmed that Payment Models Work Group should pursue designing the Episode of Care program.	
6 Overview on EOC Program Development process.	Kara Suter presented a Process for Design of the Episode of Care Program intended for the Work Group to develop and implement the EOC program: **Define Goals**. **Choose the Episodes of Care,** acknowledging concerns about: administratively over-burdening providers; the process for application of criteria, e.g., qualitative vs quantitative implications; quality and performance measurement of outcomes; and the need to hire expert analytical support. **Define Specifications**: requires guidance from clinicians and coding experts; **Design and Launch Learning Collaborative:** facilitating care delivery transformation is primary goal – purpose of launching Learn Collaborative is to evaluate results. **Evolve to Bundled Payment:** design financing, penalties, ensure EOC compliments other programs. A Question arose regarding the payers involved. Kara answer the Work Group should design a program for all payers. Further question if this was a pilot, trial, voluntary and/or mandatory. Kara stated this is a coalition of the willing, with the intent to garner wide participation. Further question on timelines, Kara noted this as a work item for the Work Group.	Need 6 – 7 volunteers to review SOW for Data Analytics, please email George Sales George.sales@partner.state.vt.us

Agenda Item	Discussion	Next Steps
	Clarification question on who the SIM funded staff are. Georgia reviewed the mix of fully-funded DVHA/GMCB/AHS SIM staff, consultants, and other staff willingly working with SIM but not funded by SIM. Question arose on terminology. Kara clarified with definitions on 'episode' vs 'bundled', episode referring to the patient care procedures and bundled referring to the payment. Questions arose on detailed aspects on EOC including prospective, retrospective, and bundled payments, and on provider risk. Kara stated these are all important to the design and will be the Work Group's decision. Question arose on when the Learning Collaborative will initiate. Kara suggested first defining the deliverables, it is difficult to solicit without the payment details. Paul Harrington replied the Learning Collaborative can test the financing. Kara asked the Work Group to continue making these types of suggestions. Question regarding the budget for the program. Kara replied to incent care delivery transformation there are resources for technical assistance and the learning collaborative. The next step is data analytics. Kara solicited volunteers to review a Scope of Work (SOW).	
7 Phase One: EOC Program Development	**EOC Program Development** – Kara Suter presented "Draft Objectives", "Draft Universe of EOCs", and "Draft Criteria" for further discussion and development at future meetings. Kara and Richard clarified the role of the SIM staff is not to make these decisions, but to support the work groups.	

Agenda Item	Discussion	Next Steps
8 Public Comment	Don George called for public comment – none offered.	
9 Next Steps and Action Items	Materials will be sent out on Global Budgets, Volunteers needed to review a scope of work for data analytics to support design of an Episode of Care Program. Finalize the charter and work plan. February meeting will discuss objectives, universe, criteria and process for selection. **Next Meeting: February 3rd, 2 – 4:30 pm, DVHA Large Conference Room 312 Hurricane Lane, Williston.**	

Approach

The project will start with a review of current episode payment initiatives, such as Arkansas' Health Care Payment Improvement Initiative, followed by selection and development of episodes of care.

1. Review of existing initiatives

Brandeis will extend and update the environmental scan already started in Vermont (see EOC presentation) to accomplish the following:

- Review and compare design, progress, and target populations addressed by existing EOC initiatives.
- This includes states and other entities that have made progress in this area, such as Arkansas health care payment improvement initiative; and the Medicare Bundled Payments for Care Improvement (BCPI) program.
- Information about these programs will include:
  - Technical information such as episode specifications
  - Information about field-testing; i.e., actual implementation experiences
  - Information about results, such as participation rates and outcomes
  - Assess public or commercial groupers for use in EOC payment model, such as CMS, Prometheus, or commercial products.
  - Cost and other terms and conditions pertaining to implementation in Vermont
  - Correspondence between supported EOCs and Vermont's target populations
  - Comparison to custom-building EOCs using available methods and data

  http://www.paymentinitiative.org/episodesOfCare/Pages/default.aspx

2. Develop criteria for selecting episodes

The next step will be to develop preliminary profiles of candidate specifications for an inclusive list of potential episodes, starting with Arkansas' 15 episodes, which may be expanded based on prevalence in Vermont and other considerations.

These include:

- Brief summaries of epidemiology (prevalence statewide and by payer) of final diseases under consideration
- Number of cases, in total and by hospital
- Mean and distribution of costs by payer for inpatient stay; and separately for a specified time window beginning upon discharge – e.g., using 30 days as a starting parameter.
- Services by category and payer
    - Hospital Admission and hospital readmission (by same or different reason)
    - Post-acute institution placement (SNF, IOP, structured living)
    - Physician or other clinical ambulatory services (e.g., follow-up counseling)
    - ED or other hospital OP
- "Within provider system" versus "leakage." A given hospital may own other assets such as SNF or sub-acute beds, making care coordination sometimes easier. Also, utilization patterns may show different tendencies across hospitals as to whether readmissions occur at the same (index) hospital, versus other hospitals, which may tend to be close-by or further away geographically.

3. Select episode definitions for further development

After analytic files are ready, we will explore inpatient data patterns, including reasons for admission (e.g., primary discharge diagnosis; DRG indicator; major procedures), and profile cost summaries for patients by reason for admission. This will provide summary information for definitions based on the prior considerations, as well as other possible definitions or combinations.

From the initial and subsequent candidates identified, and in consultation with Vermont staff, we will select a set of (approximately three) potential episode definitions for further development.

4. Further develop selected episodes

The selected episode definitions will be further developed and tested in order to understand and optimize their statistical performance and other criteria such as clinical coherence, and acceptability and improvability.

Episode length. An important dimension for bundled payment is the length of the time window for which services and costs are accumulated toward the bundle, ranging from the IP stay only (i.e., DRG) to perhaps several weeks or months following the date of discharge. Accordingly, we will select a number of options such as seven days, 14 days, 30 days, 90 days, and 180 days in order to examine immediate and long-term utilization patterns and cost profiles for each selected episode definition.

Excluded services. A base case for each episode definition will be inclusion of all covered services during the specified episode length. However, Vermont may choose to exclude some services from the bundle definition. Some services may be excluded that are clinically unrelated to the reason for the episode, such as chemotherapy for cancer within a bundle for psychosis. Other services may arguably be clinically related, but nevertheless contribute inordinately to statistical and financial risk, such as readmission for major trauma within a bundle for SUD.

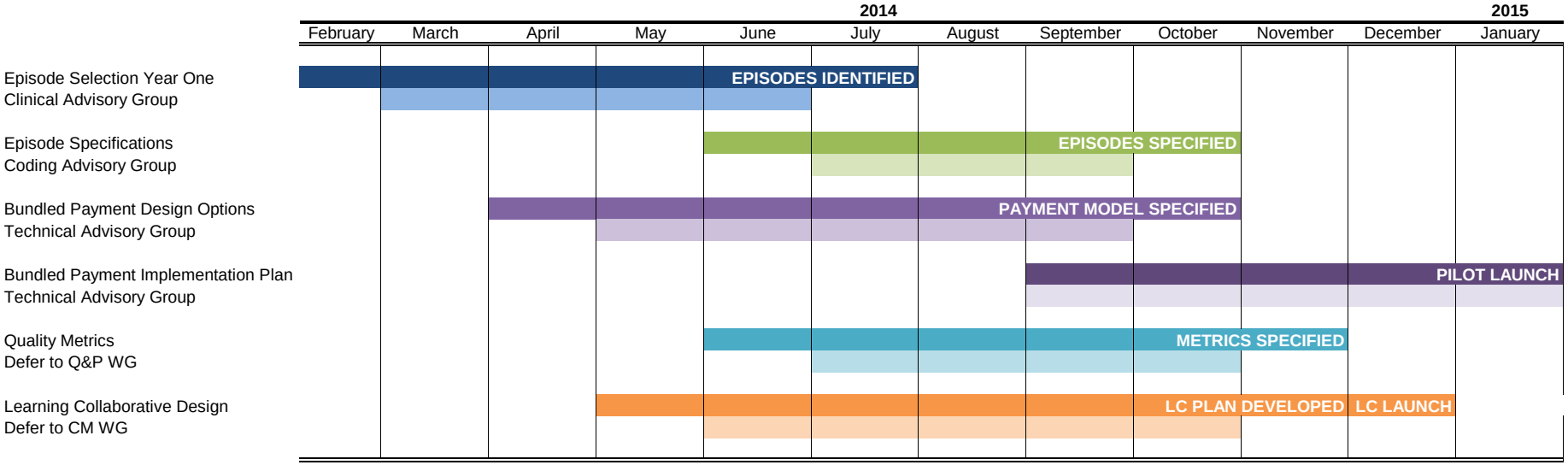
4. Further develop selected episodes

Comorbidities. Patients who qualify for bundled payment because of their reason for admission will likely in many cases have other psychiatric or medical conditions that can affect clinical and financial outcomes. We will examine available data elements and their potential contributions to setting risk-adjusted benchmarks or bundle prices.

Severity. Patients who qualify for a given episode definition may nevertheless vary with regard to the severity of their condition, e.g., depression or psychotic manifestations. As with comorbidities, we will examine available data elements (e.g., prior ECT or suicide attempts) and their potential contributions to setting risk-adjusted benchmarks or bundle prices.

Cost outliers. Generally, a small proportion of patients in most cohorts will experience hugely disproportionate cost outcomes, often resulting from catastrophic circumstances or multifactorial vulnerability. We will examine the effects of statistical "trimming" of observed cost outcomes, analogous to individual stop-loss insurance provisions.

5. **Deliverables and timeline**
    - Policy options for consideration of payment models work group
      Criteria for selecting episodes – 8 weeks post start
      Specification of episodes of care – 12 weeks post start
    - Analytical and technical reports to support decision making by payment models work group
        - Participate in work group meetings, including technical materials and discussions.
        - Prepare work group background materials –, associated with activities
        - Analyses
            - Extend and update the existing environmental scan; Review of EOC and BP currently in use – 8 weeks post start
            - Review of commercial or public groupers and specifications – 8 weeks post start
            - Summary (brief) of epidemiology of episodes under consideration – 8 weeks post start
            - Cost and quality variation across 15 episodes, among providers and payers – 12 weeks post start
            - Budget impacts / return on investment – 12 weeks post start
            - Provide specifications and final documentation around selected episodes (24 weeks)


2014
2015
February
March
April
May
June
July
August
September
October
November
December
January
Episode Selection Year One
Clinical Advisory Group
EPISODES IDENTIFIED
Episode Specifications
Coding Advisory Group
EPISODES SPECIFIED
Bundled Payment Design Options
Technical Advisory Group
PAYMENT MODEL SPECIFIED
Bundled Payment Implementation Plan
Technical Advisory Group
PILOT LAUNCH
Quality Metrics
Defer to Q&P WG
METRICS SPECIFIED
Learning Collaborative Design
Defer to CM WG
LC PLAN DEVELOPED
LC LAUNCH

VT Health Care Innovation Project
Payment Models Work Group Meeting Agenda
Monday March 3, 2014 2:00 PM – 4:30 PM.
EXE 4th Floor Conference Room, Pavilion Building, Montpelier
Call in option: 1-877-273-4202
Conference Room: 2252454

Item #	Time Frame	Topic	Presenter	Relevant Attachments
1	2:00 – 2:05	Welcome and Introductions Approve meeting minutes	Don George and Steve Rauh	Attachment X: Meeting Minutes
2	2:05 – 2:10	Update on ACO/SSP	Richard Slusky & Kara Suter	
3	2:10– 2:15	Update on Other Work Groups	Georgia Maheras	
4	2:15-2:35	Overview of EOC Approaches	Kara Suter	Attachment X: Overview Presentation
5	2:35 – 3:00	Case Study: Example EOC from Arkansas	Kara Suter	Attachment X: Case Study: Example Presentation
6	3:00-4:00	Case Study: Example EOC from Rutland BPCI Program	Darren	Attachment X: Rutland Presentation
7	4:00-4:15	Setting Stage for Next Work Group Meeting	Kara Suter	Attachment X: Draft April Meeting Agenda
7	4:15 – 4:20	Public Comment	Don George and Steve Rauh	
8	4:20 – 4:30	Next Steps and Action Items	Don George and Steve Rauh	Next Meeting: April 7, 1 – 3:30 pm. Montpelier

VT Health Care Innovation Project
Payment Models Work Group Meeting Agenda
Monday April 7, 2014 1:00 PM – 3:30 PM.
DVHA Large Conference Room, 312 Hurricane Lane, Williston
Call in option: 1-877-273-4202
Conference Room: 2252454

Item #	Time Frame	Topic	Presenter	Relevant Attachments
1	1:00 – 1:05	Welcome and Introductions Approve meeting minutes	Don George and Steve Rauh	Attachment X: Meeting Minutes
2	1:05 – 1:10	Update on ACO/SSP	Richard Slusky & Kara Suter	
3	1:10– 1:15	Update on Other Work Groups	Georgia Maheras	
4	1:15 – 1:25	Introduction of Contractors and Work Plan for Meeting	Don George and Steve Rauh	
5	1:25 – 1:55	EOC Objectives	Cindy Thomas, Brandies (TBD)	Attachment X: Draft EOC Objectives and/or Presentation
5	1:55-2:35	EOC Universe	Cindy Thomas, Brandies (TBD)	Attachment X: Draft EOC Universe and/or Presentation
6	2:35-3:15	EOC Criteria for Selection	Cindy Thomas, Brandies (TBD)	Attachment X: Draft EOC Criteria for Selection and/or Presentation
7	3:15 – 3:20	Public Comment	Don George and Steve Rauh	
8	3:20 – 3:30	Next Steps and Action Items	Don George and Steve Rauh	Advisory Group Meetings Scheduled Next Meeting: May 12th, 2 – 4:30 pm. Montpelier

Lessons Learned from the Prometheus Payment Model

Amita Rastogi, MD, MHA
Bridges To Excellence

The Healthcare Imperative: Lowering Costs, Improving Outcomes
Roundtable on Evidence-Based Medicine
Institute of Medicine
July 2009

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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

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What is an Episode/Bundled Payment?

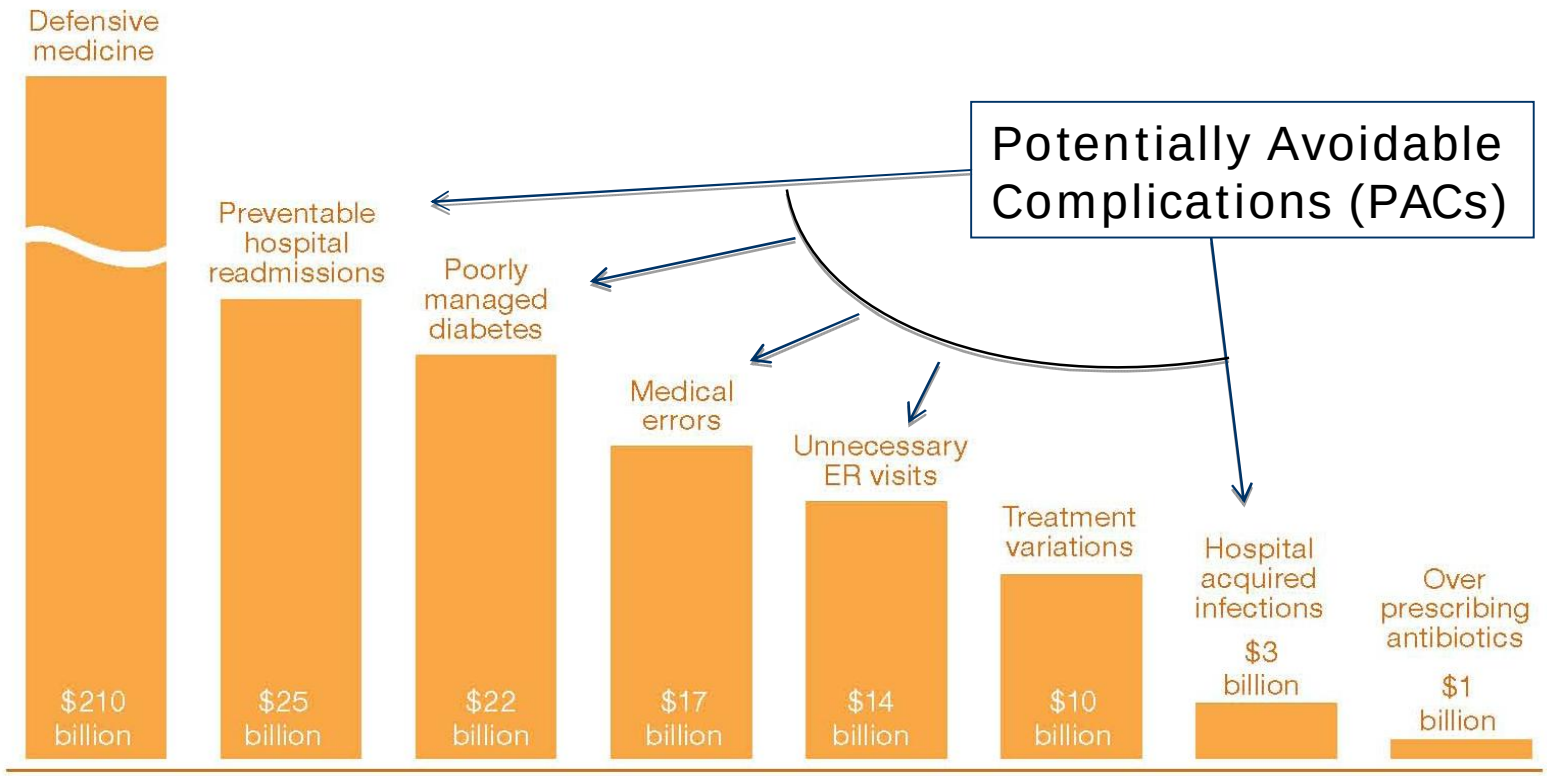
- A single price that covers all the care that is delivered for a specified condition for a specified period of time across the entire care continuum.

What is included in today ś Episodes/Bundled Payments?

- Lots of variations in costs of care due to:
  - Unit cost of service –contracting, fee schedules
  - Geographic variations –disease prevalence, risk of occurrence
  - Patient factors –demographics, socioeconomic
  - Physician practice patterns –type of service and number of services ordered (underuse, overuse)
  - Provider controlled factors –care defects (overuse and misuse)

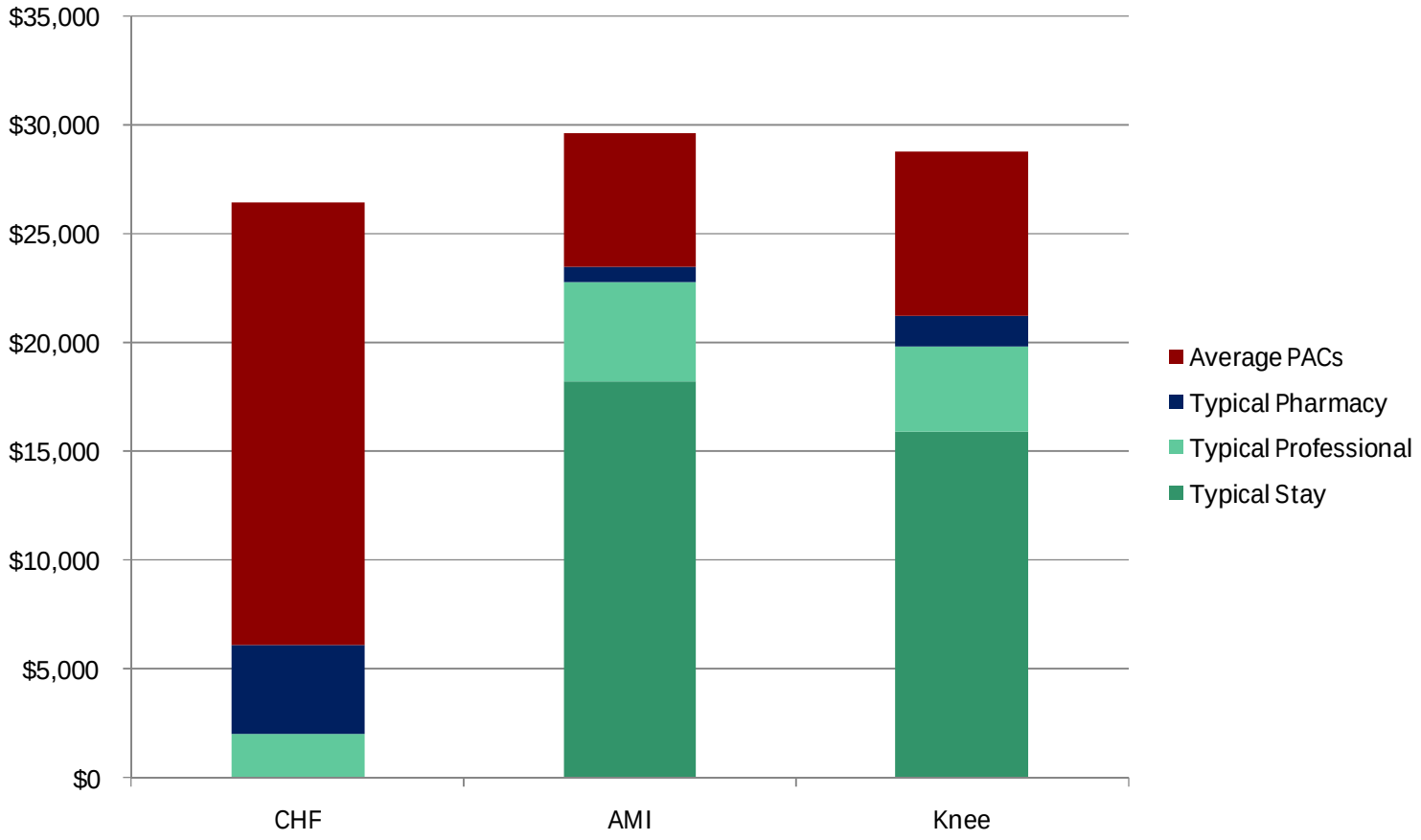
Clinical Waste in Healthcare

Exhibit 5: Annual excess costs in clinical services

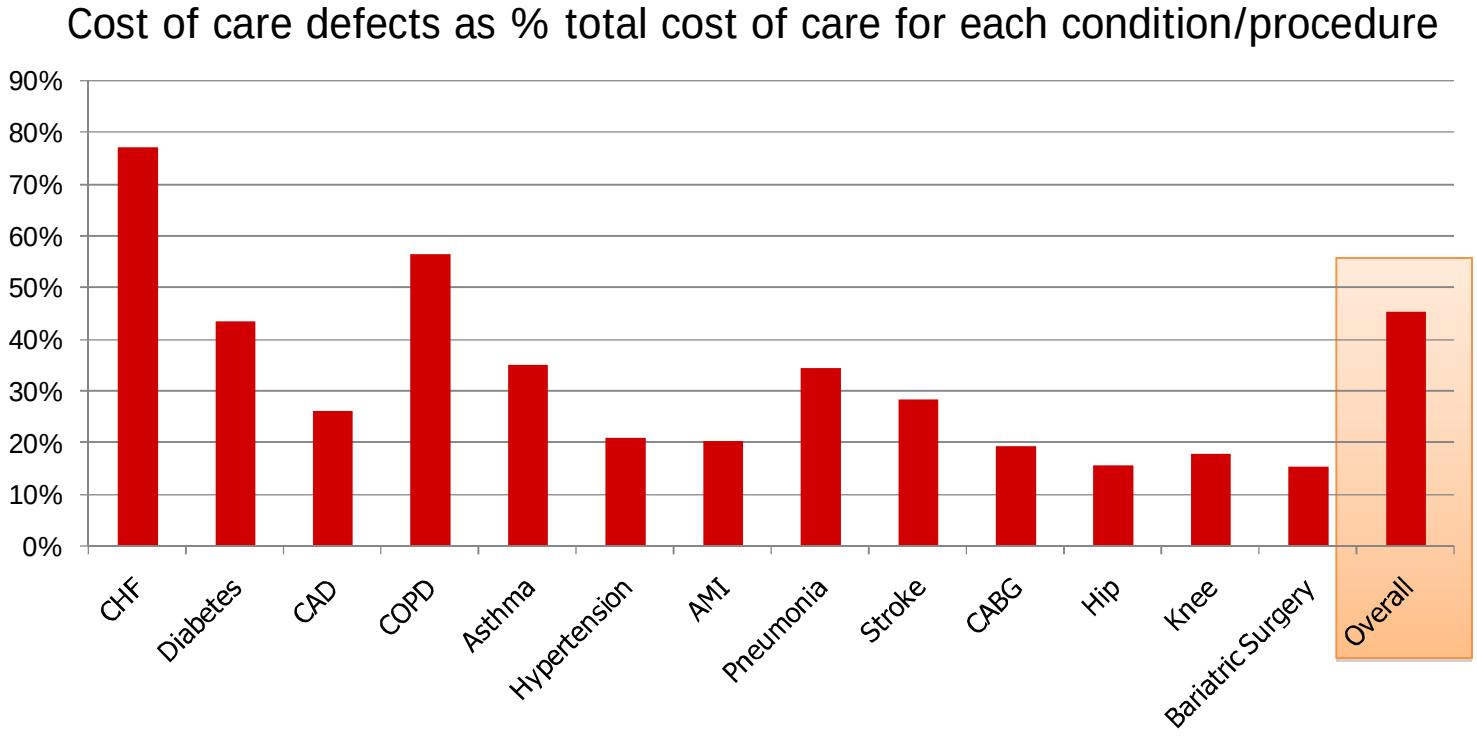


Source: Institute of Medicine (1999), "The Factors Fueling Rising Healthcare Costs 2006", PricewaterhouseCoopers (2006), Medpac (2007), American Association of Endocrinologists (2006), Center for Disease Control and Prevention (2005), Solucient (2007), U.S Outcomes Research Group of Pfizer Inc (2005), National Committee for Quality Assurance (2005), Analysis by PricewaterhouseCoopers' Health Research Institute

Average episode costs and relative volume of PACs

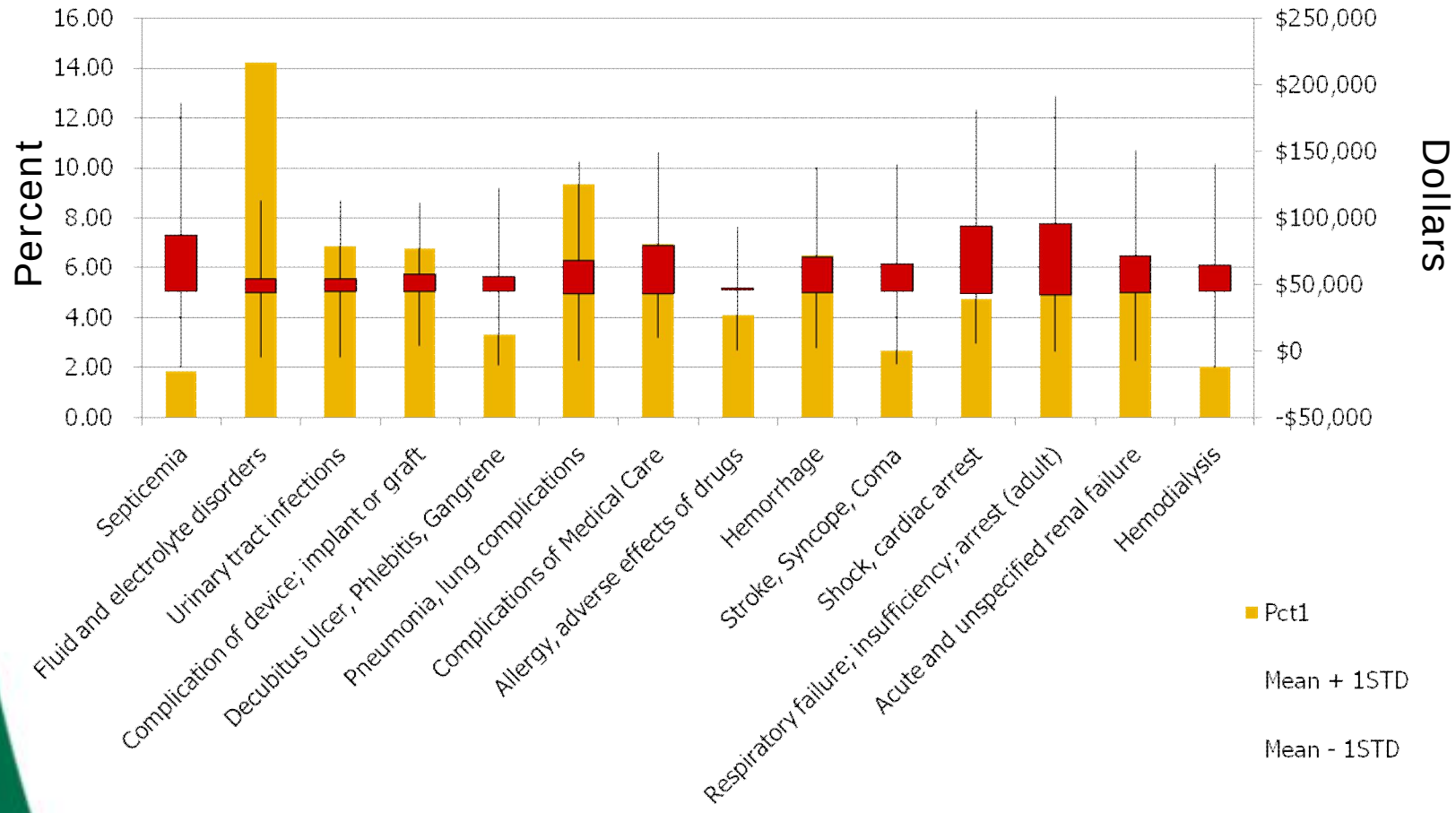


Care defects consume billions of dollars every year

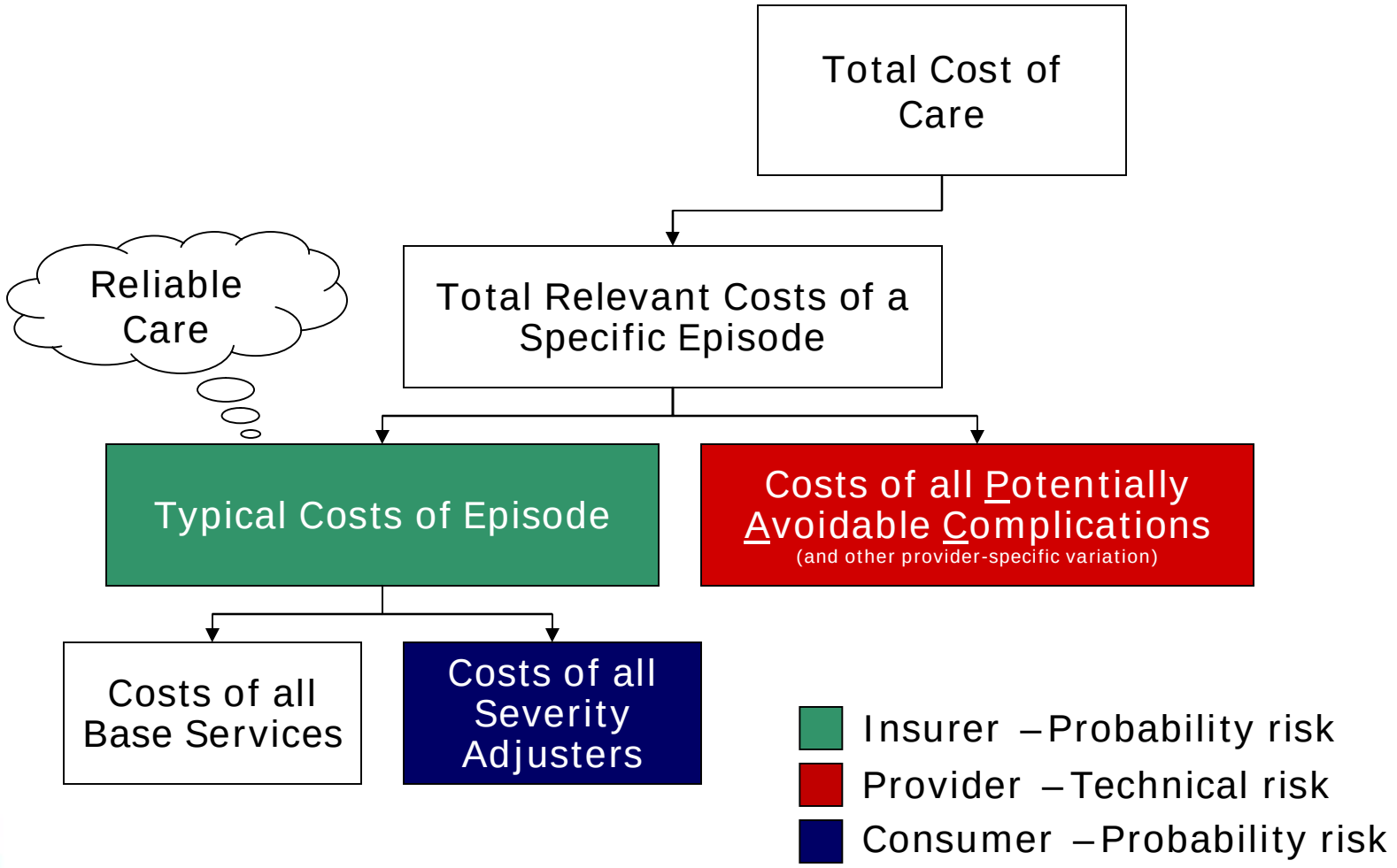


For these conditions and procedures, the total amount of PACs were $7 billion out of a $14 billion total bill for the 13 ECRs modeled. The PACs represented 15% of the $45 billion total annual cost of care for this large national employer.

Percentage of care defects and costs in AMI



Risk bifurcation in the PROMETHEUS model



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What our model is about

- The goals of the Prometheus Payment incentives are to (a) encourage physicians, hospitals and other providers to work as a team centered around each patient's needs, irrespective of their administrative integration; and (b) to improve margins as they reduce care defects.
- Our model cerates a patient-specific severity-adjusted total price for an episode
- The program has been specifically designed to be implemented in any provider setting — integrated or not.
- While we don't have quantifiable results yet (we just started the implementations in January) — we know that the program can be implemented

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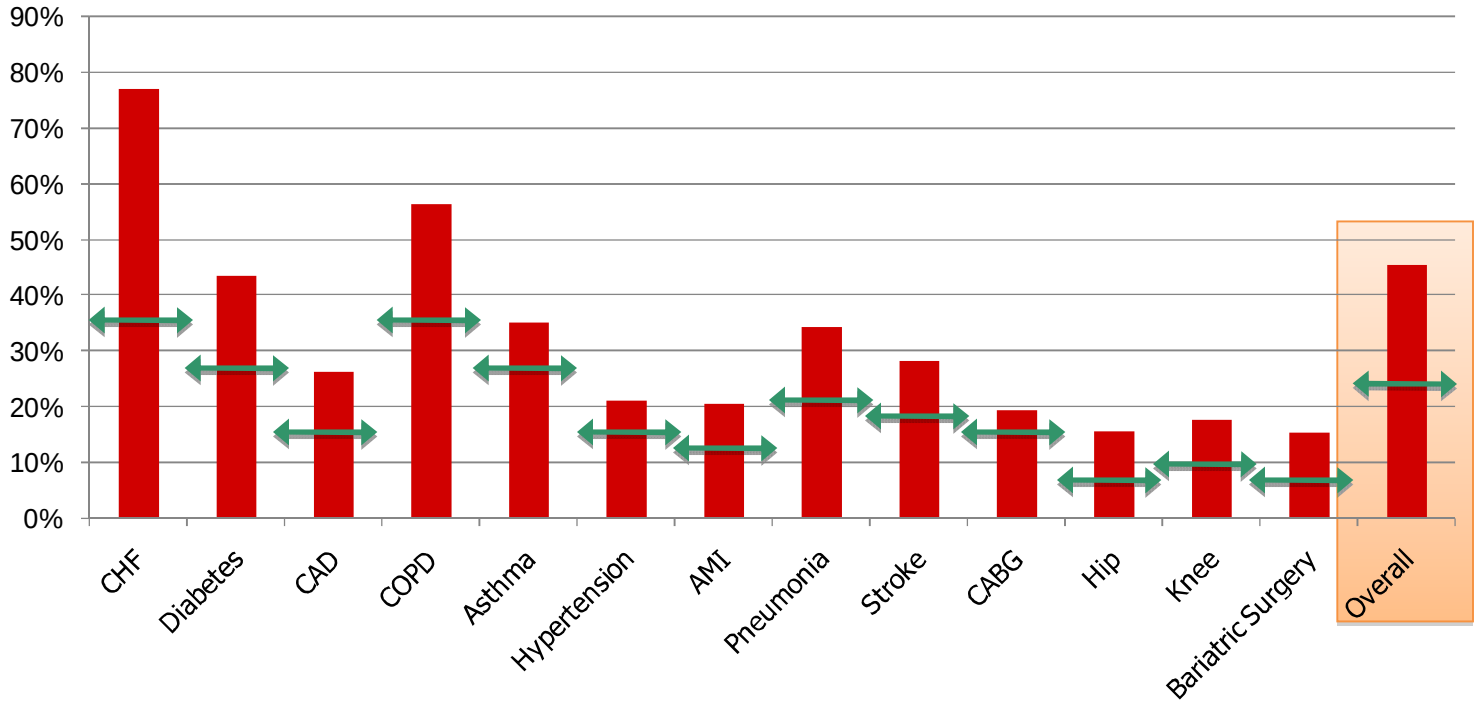
What have we found to-date:

- "Defects" – what we refer to as Potentially Avoidable Complications (PACs) " – consume an average of 15 - 34 cents on every dollar of an acute care medical or procedural ECR, and an average of over 21-77 cents on every dollar of a chronic care ECR.
- Preventable Hospitalizations constitute the bulk (67%) of all chronic medical PAC costs
- Never events, Hospital Acquired Conditions (9.5%) and re-admissions (44%) constitute the bulk of the inpatient acute medical and procedural PAC costs, others being PAC costs during the index stay and professional and pharmacy costs associated with all 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

The right incentives could focus on reducing care defects

Literature review shows PAC costs can be reduced by applying best practices



6% of yearly costs could be saved if PAC costs matched "best in country"

Savings Estimate – Commercially Insured

	Total for Six Chronic Conditions	Total for Seven Acute Medical/ Procedures	Total for 13 Conditions / Acute Medical / Procedures	Total for 13 Conditions / Acute Medical / Procedures
Base Cost of Care	$6,909,752,883	$736,537,303	$7,646,290,186	$7,646,290,186
Underuse Allowance	$687,559,658	$0	$687,559,658	$687,559,658
Evidence-informed Cost	$7,597,312,541	$736,537,303	$8,333,849,844	$8,333,849,844
PAC Target Rate	24%	10%	23.08%	0.00%
Allowance for PACs	$3,319,149,766	$95,329,613	$3,414,479,379	$0
Total Expected Cost	$10,916,462,307	$831,866,917	$11,748,329,224	$8,333,849,844
Net Savings Opportunity	$2,951,882,322	$95,329,613	$3,047,211,935	$6,461,691,315
Net Savings for All Commercial	$162,353,527,710	$5,243,128,730	$167,596,656,440	$355,393,022,299

- Reducing all defects to "best in country" would save this employer $3 billion out of an annual total spend of $45 billion.

- Given that there are 3.5 million covered lives under the age of 65 for this employer, the total potential savings for the 200 million commercially insured in the country is $167.5 billion for these 13 episodes.

- These 13 cover 33% of total spend. If the defect rate relationships stay the same for the other 2/3 of spend, then the total net potential savings are $500 billion.

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Collaboration

- Support for ECR construction, clinical and analytical review:
  - AHRQ / Premier / CMS / Johns Hopkins: Codesets & Definitions
  - Prometheus Clinical Working Group / Health Partners / Brookings workgroup: Clinical Guidelines
  - Crozer Keystone / Health Partners / Aetna / Medica: Clinical and Analytical feedback regarding the models
  - Elliott Fisher (Dartmouth): regional variation analysis
  - Geisinger: Proven care model using ECRs

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References

- Should Health Care come with a Warranty? Francois de Brantes et al. Health Affairs 28, no.4 (2009): w678-687. DOI:10.1377/hlthaff.28.4.w678
- Chronic care cost burden: approximately half the cost of care spent on six chronic conditions is potentially avoidable. Francois de Brantes et al. Health Affairs: under review
- Prometheus Payment Model: Application to Hip and Knee Replacement Surgery. Amita Rastogi et al. Clinical Orthopedics and Related Research 2009: 0009-921X (print) 1528-1132 (online) DOI: 10.1007/s11999-009-0942-3.
- Bridges to Excellence -- Recognizing High-Quality Care: Analysis of Physician Quality and Resource Use. Meredith Rosenthal et al. American Journal of Managed Care 2008; 14(10): 670-677
- Evidence-informed Case Rates: Paying for Safer, More Reliable Care. Francois de Brantes et al. Commonwealth Fund 2008; pub. 1146, vol. 39

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APPENDIX

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Bundled payments: an Episode

- *"..an episode of care is defined as: a series of temporally contiguous health care services related to the treatment of a given spell of illness or provided in response to a specific request by the patient or other relevant entity.*
  - *Source: 1985. Hornbrook et al. Health Care Episodes: Definition, Measurement and Use. Medical Care Review. Vol. 42; No.2: pp.163-218.*

- *"..An episode perspective is required in order to determine if the delivery system is indeed achieving its intended purpose –as this approach allows for care to be analyzed over time and offers a better assessment of the patient's resulting health status."*
  - National Quality Forum Priority Setting Pilot Project: Evaluating Efficiency Across Episodes of Care, December 2007. Steering Committee Report.

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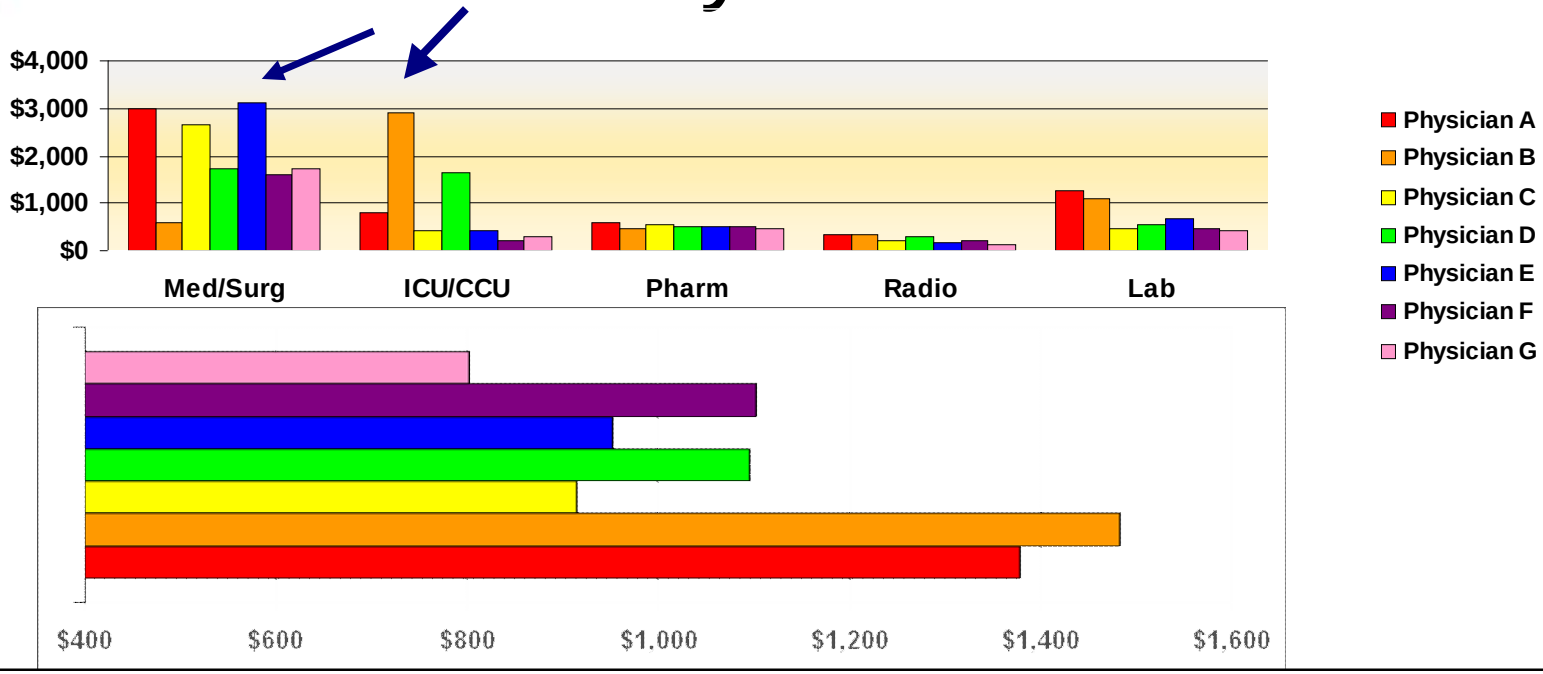
Some definitions....

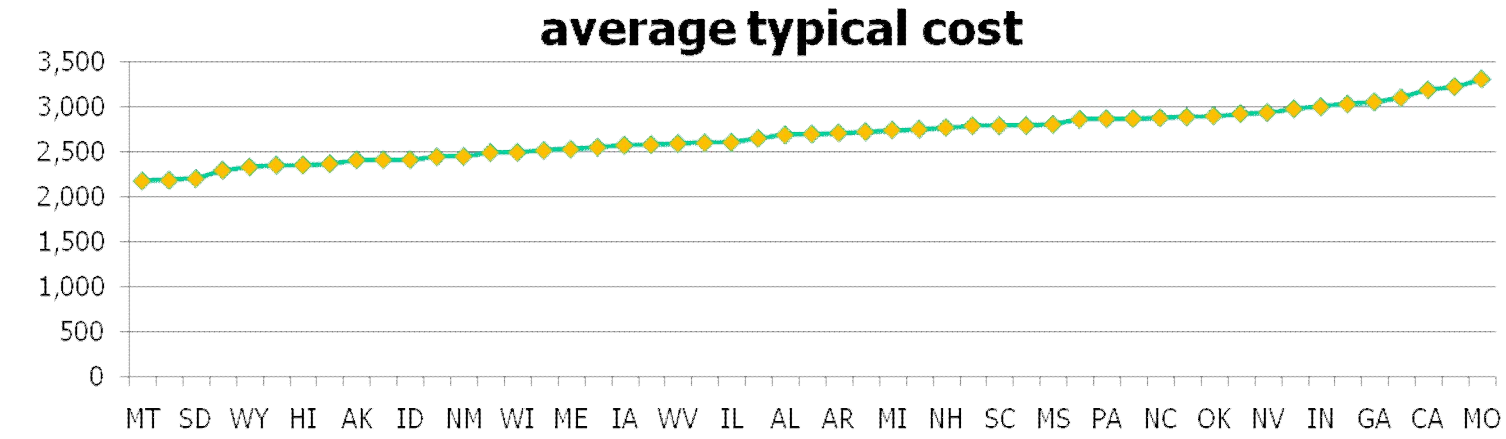
- ECR: Evidence-informed case rate
- PACs –Potentially Avoidable Complications
- HACs –CMS-defined Hospital Acquired Conditions….HACs are a subset of PACs
- PAC Allowance –the portion of total PACs that gets redistributed into each ECR, and severity-adjusted so that ECRs for more severe patients get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

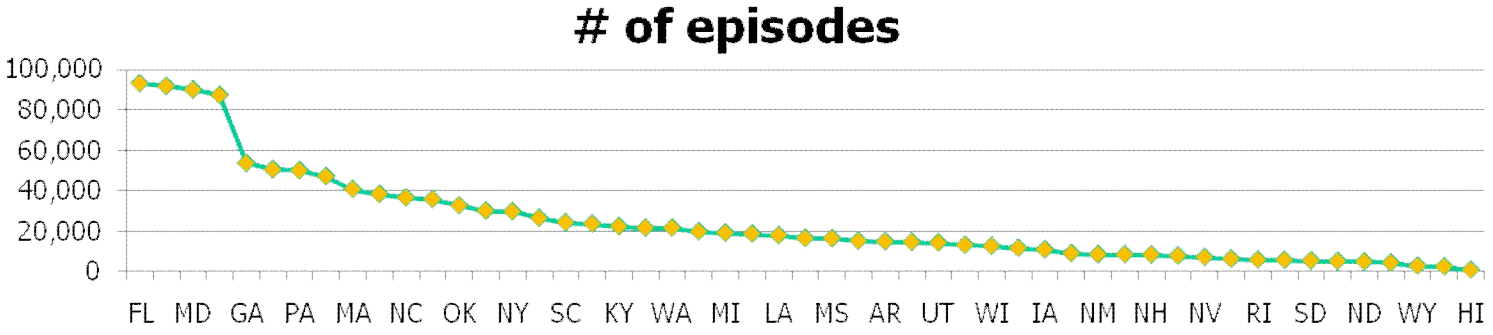
Cost Variation exists across Physicians



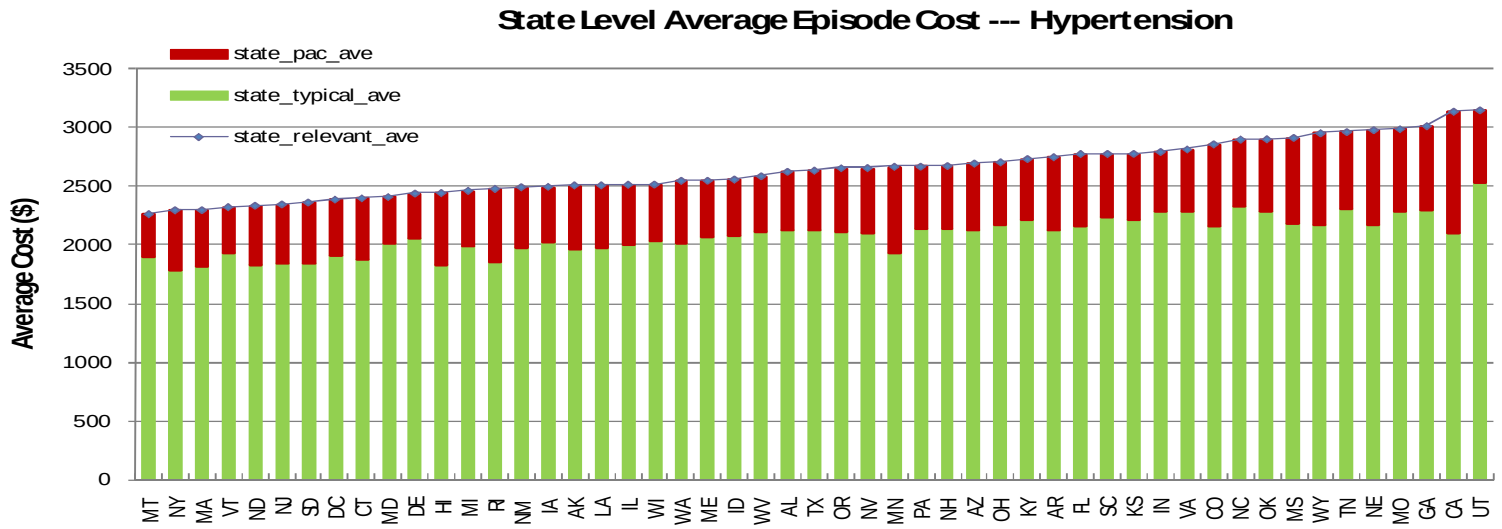
	Average Episode Cost							
	Med/ Surg	ICU/CCU	Pharmacy	Radiology	Laboratory	Other	Total	Avg Cost/ Yr
Physician A	$2,972	$819	$581	$330	$1,245	$1,699	$7,647	$1,378
Physician B	$588	$2,886	$479	$318	$1,093	$1,667	$7,031	$1,483
Physician C	$2,649	$412	$556	$205	$461	$1,070	$5,353	$915
Physician D	$1,745	$1,635	$520	$298	$552	$964	$5,714	$1,095
Physician E	$3,106	$416	$513	$176	$657	$842	$5,710	$952
Physician F	$1,615	$219	$495	$197	$450	$1,171	$4,147	$1,103
Physician G	$1,746	$309	$475	$126	$408	$1,105	$4,169	$802

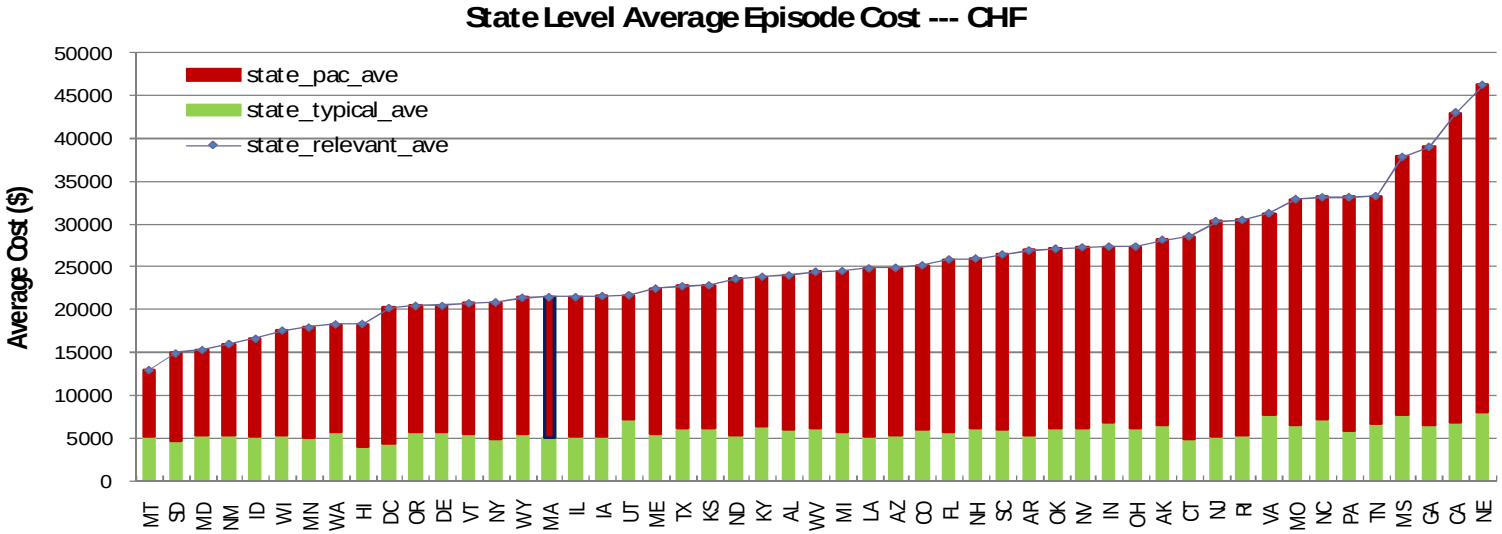
Regional Variation – Hypertension



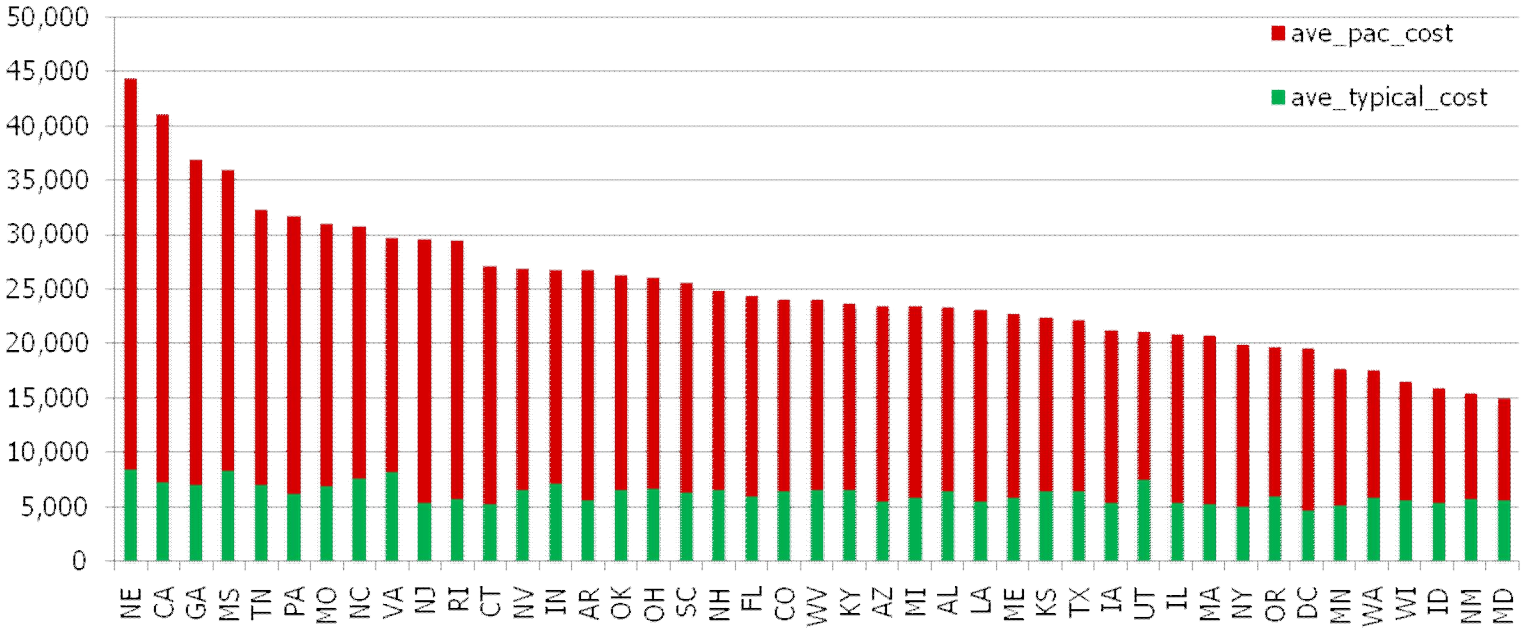


Regional Variation: Typical and PAC costs





CHF Results by State



We're working on a secondary level of analysis that will apply a price neutralizing factor, although that won't change the relative rates of PACs, just the altitude of the ECR

The ECR Development Process

Datasets

Code Sets & Rules

Statistical Models

ECR Working Group Definitions

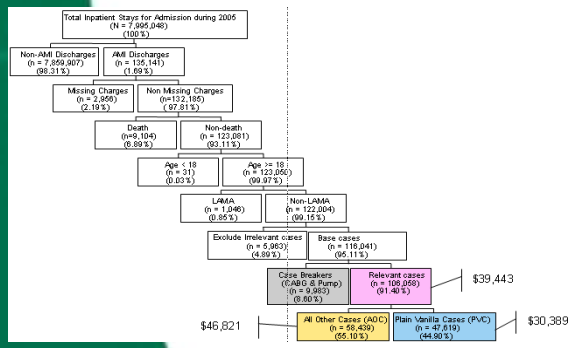
Underuse & Care Coordin

PAC Allowance

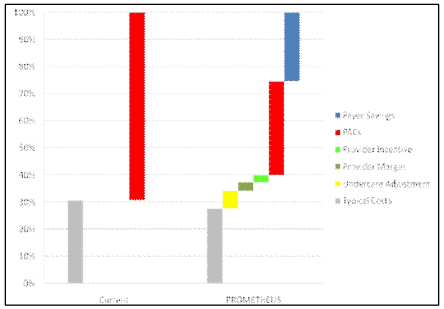
Step 1: Defining boundaries and slicing data

Step 2: Risk Adjustment for Typical Popul

Step 3: PAC Allowance & Pricing the ECR



Variables	N	Ln Coefficient	Patient 1	Patient 2	Patient 3
Intercept	47,619	9.09215	1	1	1
PTCA, thrombolysis	29,200	0.75062	1	1	
Diagnostic cardiac catheterization, coronary arteriography	38,982	0.44984	1	1	1
Insertion of Balloon Pump	566	0.21249	1		
Blood transfusion	1,008	0.13689	1		
Diagnostic ultrasound of heart	2,696	0.04997			1
Congestive heart failure; nonhypertensive	11,542	0.09316	1		
Cardiac dysrhythmias	12,111	0.06205	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	
Bed size of hosp: Large vs. Medium/Small	36,394	0.07421	1	1	
Disp of patient (uniform): Other facility vs. routine/Short-term hosp	3,357	0.11833	1		
Race (Uniform). Black vs. White/NAm/Unk	2,768	0.06705			1
Admission day is a weekend	39,672	0.03334	1		1
Med House $ quartile for patient zip: $1 to <37k vs $37k to <61k	14,398	-0.00362			1
Evidence-informed Amount (No Technical Risk)			$71,180	$36,927	$16,670



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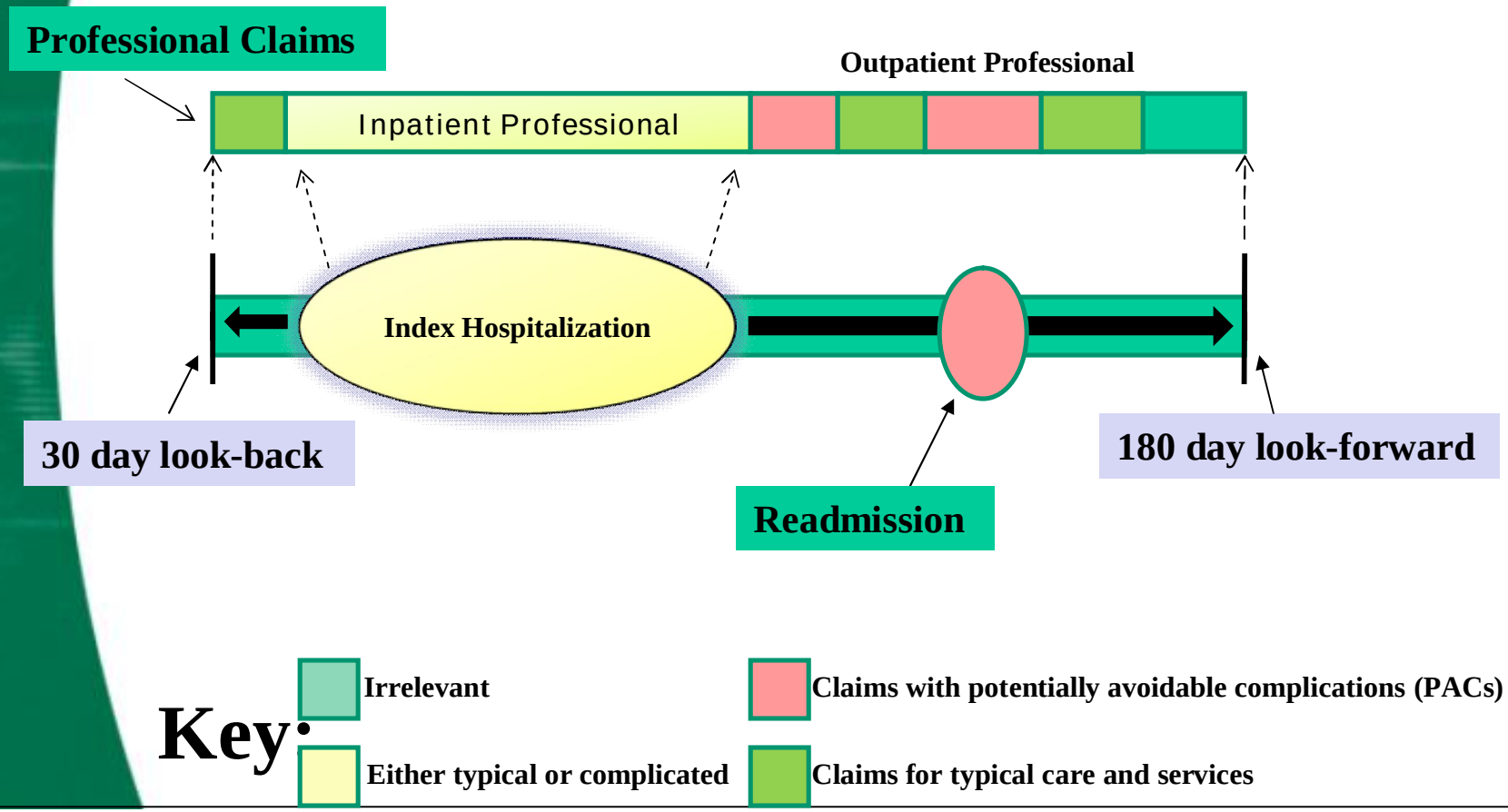
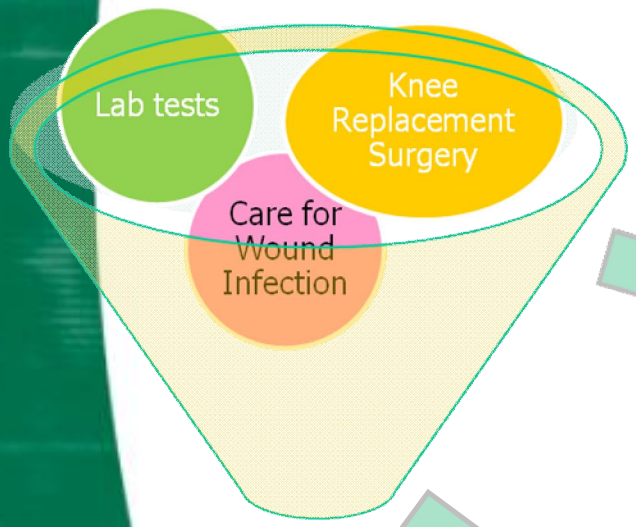
Creating an inpatient ECR:



Relevant claims get navigated as typical or PACs



Typical: Risk Adjustment
- Diabetes
- Hypertension

Knee Replacement Surgery

Typical:

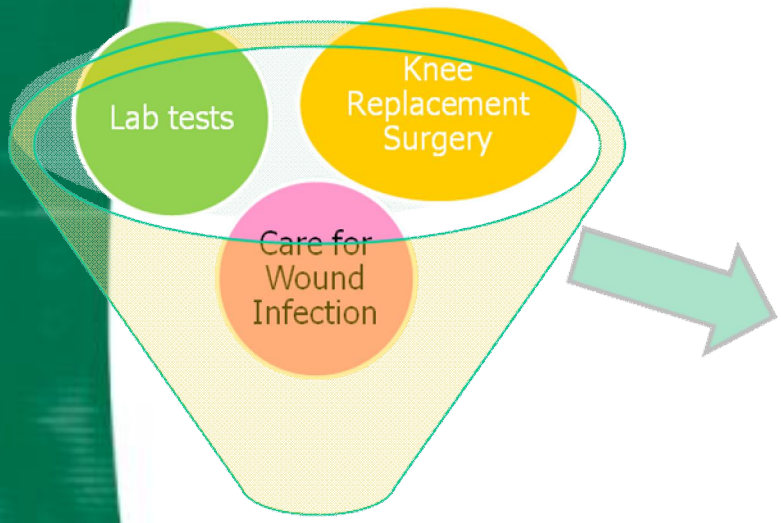
Knee procedure
Lab tests

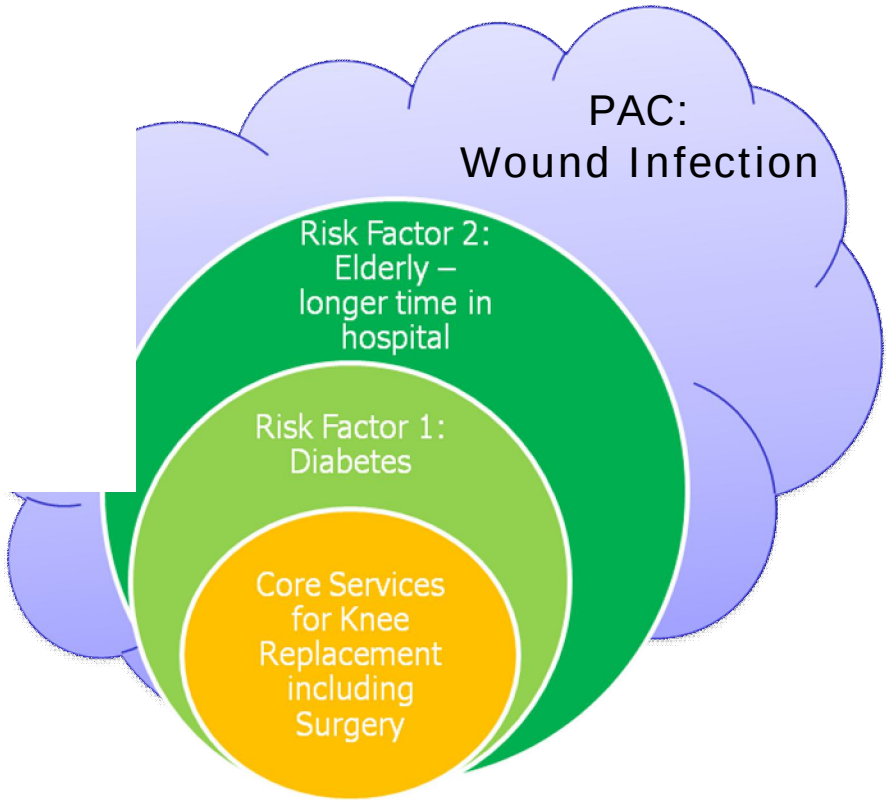
PAC:
- Care for Wound Infection
- Pneumonia

Exclude:
- CABG
- Breast Surgery

Irrelevant claims get filtered out

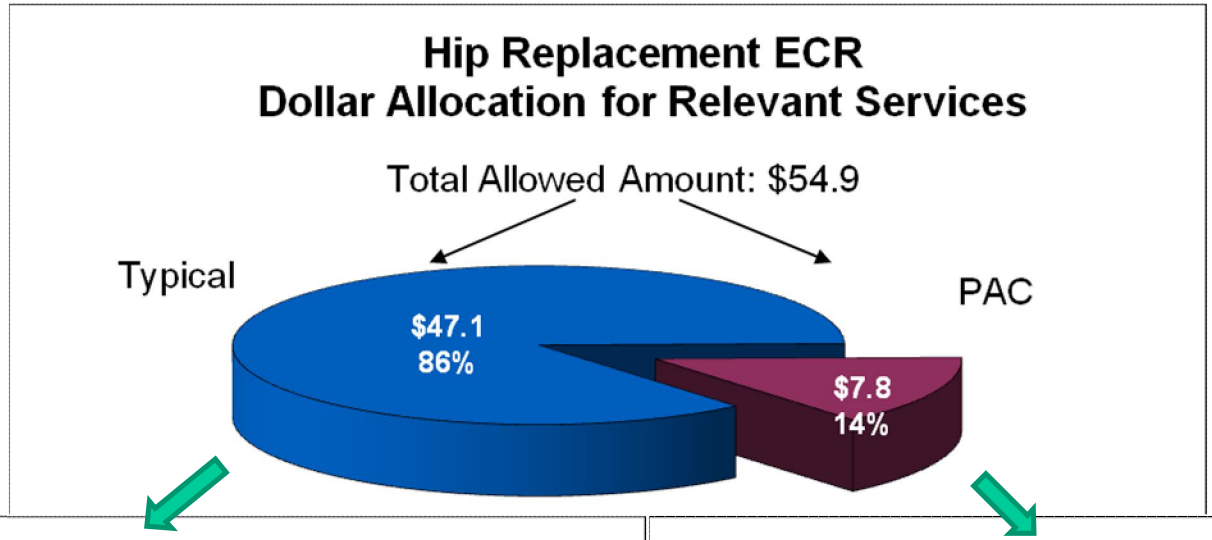
Dollars get accumulated as typical or PAC Allowances

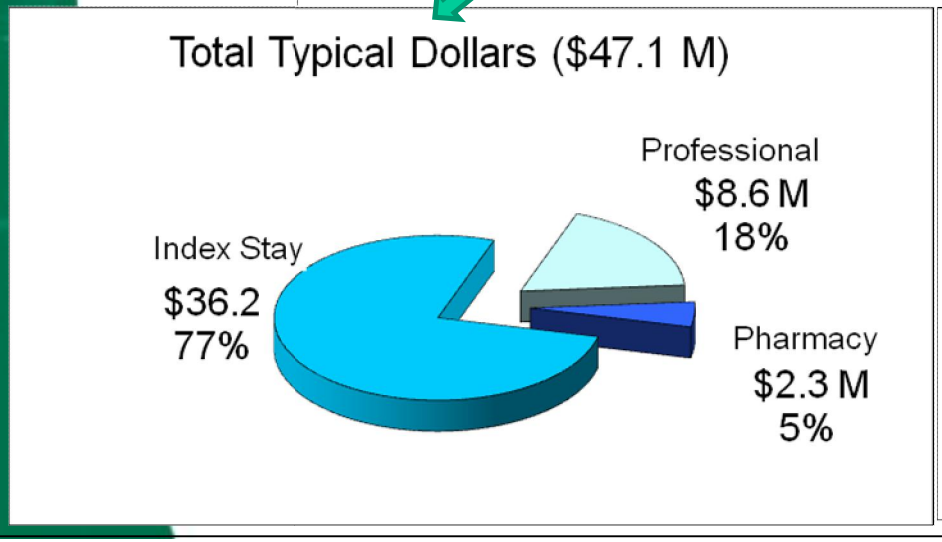


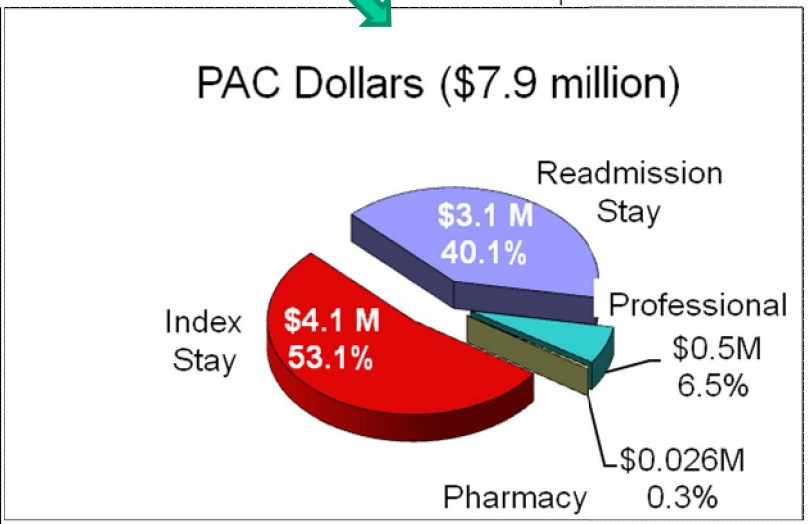


- Risk Factors increase intensity of services: give additional allowance
- PACs (potentially avoidable complications): services related to PACs get placed into a PAC pool

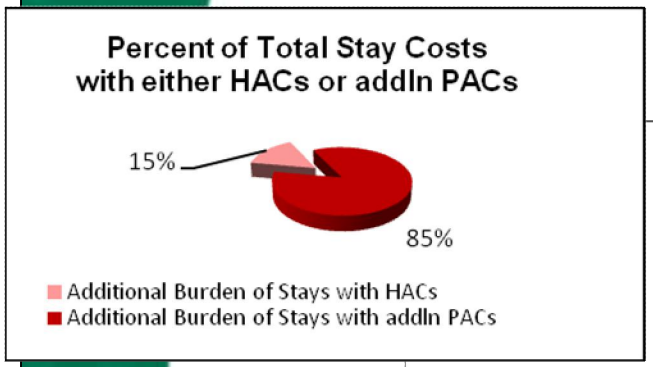
Hip Replacement Summary

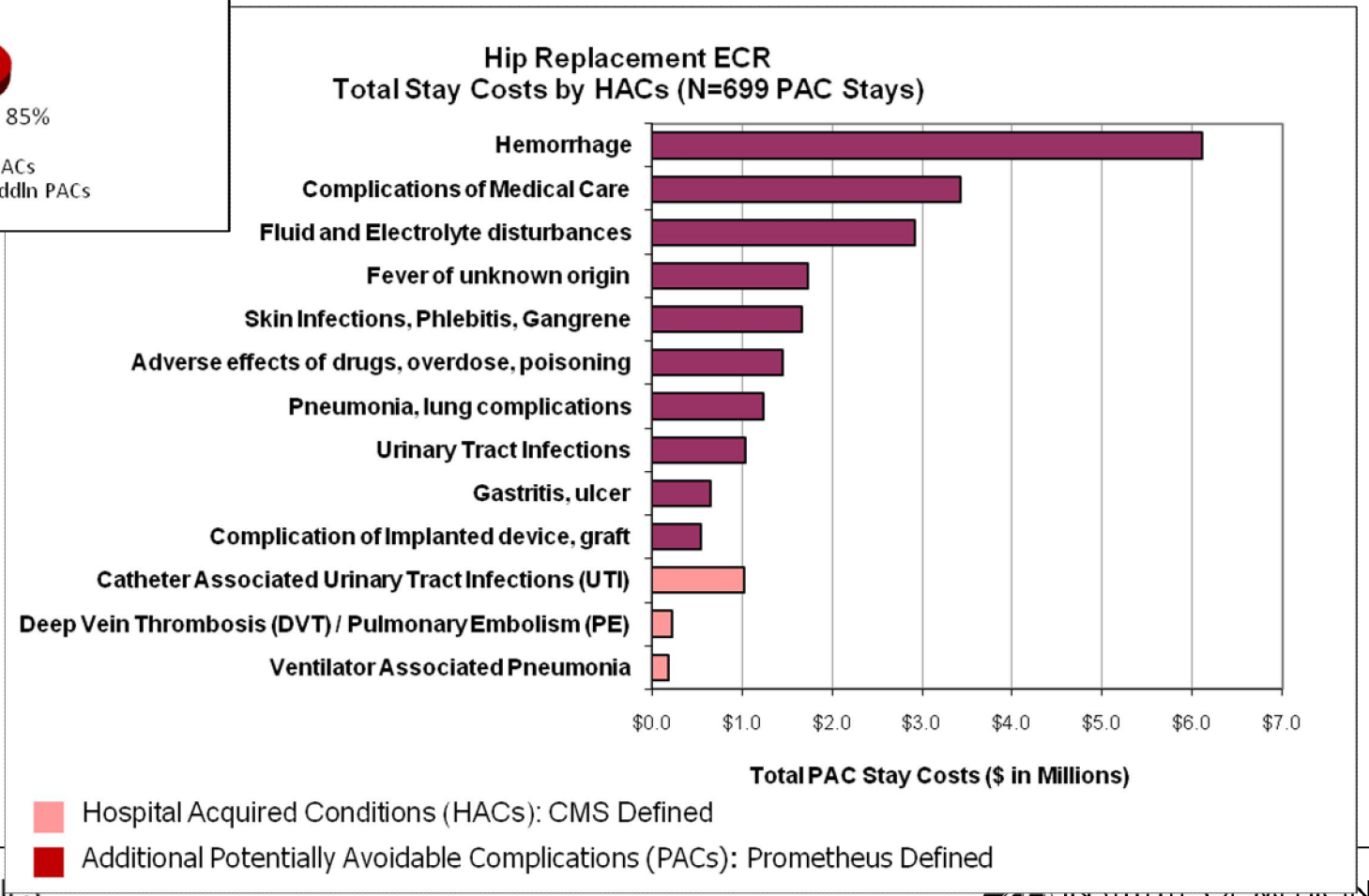






HACs vs. PACs (Hip Replacement)





Severity-adjusted Costs for Typical Care

Hip Replacement Professional & Pharmacy Model (Adjusted R^2=0.23)	Percent (N=925)	Ln Coeff	Patient 1	Patient 2	Patient 3
Intercept		8.0588	1	1	1
Respiratory diagnostic and minor therapeutic procedures	12%	0.1738	0	0	1
Other diagnostic procedures (interview, evaluation, consultation)	70%	0.0928	0	1	1
Other services, immunizations, anesthesia, pathology	93%	0.2336	0	1	1
Physical therapy and rehabilitation	26%	0.1772	0	1	1
PHARM: Antiplatelet agents, thrombin inhibitors	5%	0.1432	0	1	1
PHARM: Steroids	10%	0.1217	0	0	1
PHARM: Iron and other nutritional supplements	15%	0.1338	0	0	1
PHARM: Sedatives and hypnotics	30%	0.0881	0	0	1
PHARM: Antacids and antispasmodics	22%	0.2446	0	1	1
PHARM: Oncology drugs	3%	0.3272	0	0	1
PHARM: antirheumatic and antigout agents	8%	0.1264	0	1	1
Severity-adjusted typical professional and pharmacy portion of ECR			$3,161	$8,747	$20,359
Adding Typical facility portion of ECR price			$17,452	$17,452	$17,452
Total Typical Portion of ECR price			$20,613	$26,199	$37,811

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

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

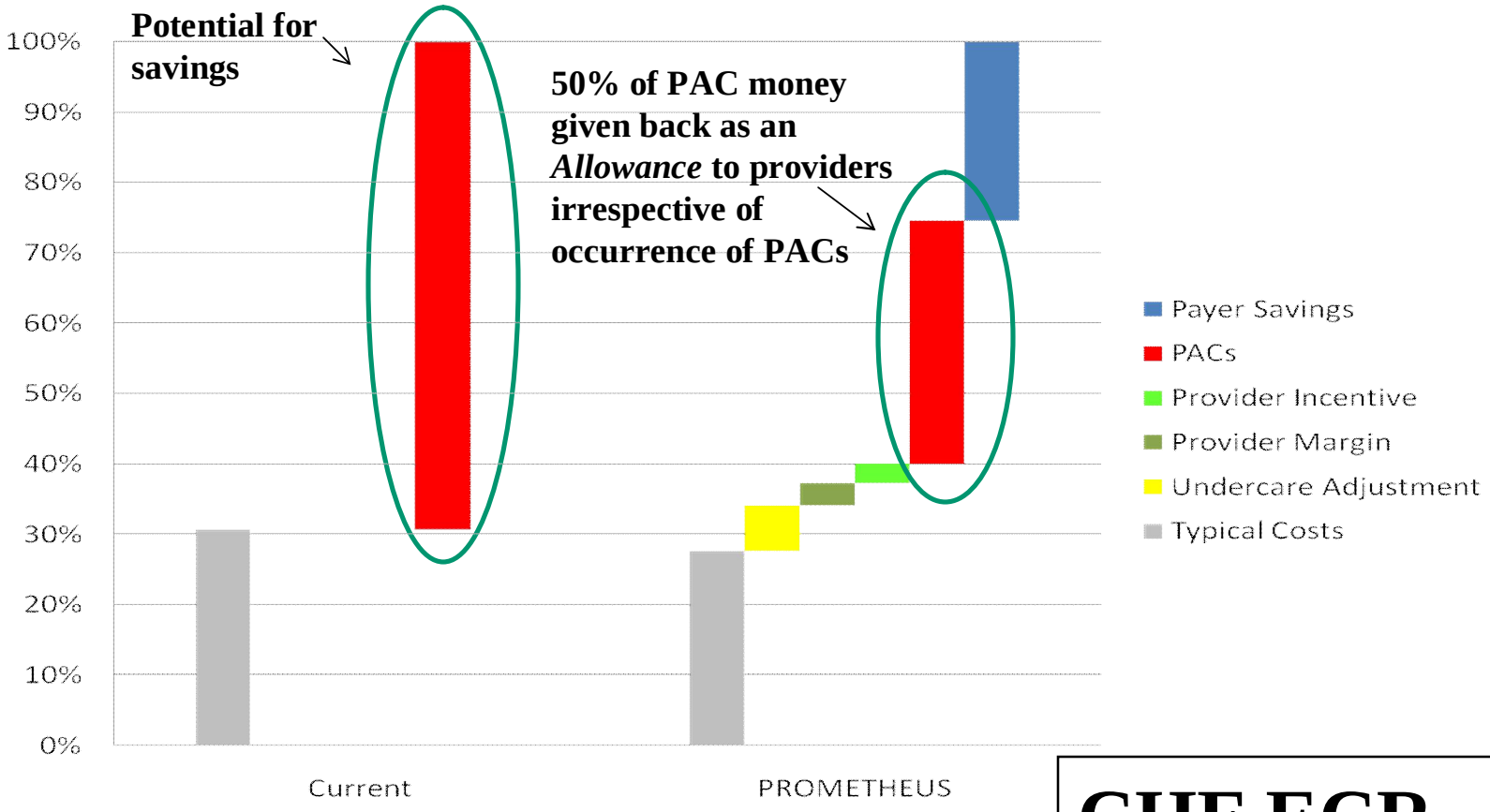
	Hip Replacement	Knee Replacement
Based on 50% of current "defect rate"	$2,000 -- $3,300	$1,800 -- $4,500
Currently based at 10% of typical	$2,100 -- $3,800	$2,000 -- $6,000
Arrived at through step-wise multi-variable regression model	$3,200 -- $20,500 (professional) $17,500 (facility)	$2,800 -- $42,600 (professional) $16,800 (facility)
Adjusts ECR for local patterns	TBD during implementation	TBD during implementation
Informed by guidelines and empirical data analysis	$20,700 (minimum payment)	$19,600 (minimum payment)
Total	$24,500 -- $45,000	$23,500 -- $70,000

ECR price will depend on patient severity, negotiated rates, and actual PAC rates

PROMETHEUS Payment Illustration for Acute Myocardial Infarction (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

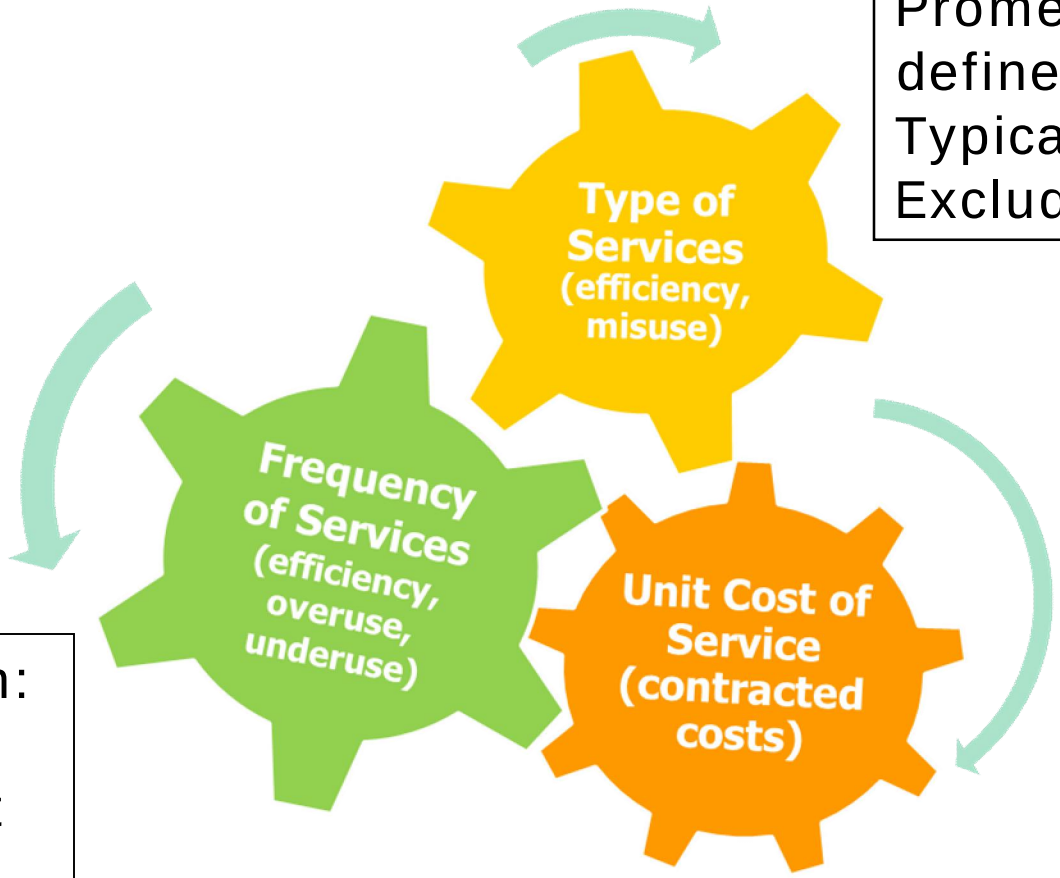
Redistributing 50% of PAC money



CHF ECR

Pricing of ECRs

Prometheus defined code sets: Typical, PACs, Excluded



Data Driven: Risk-Adjustment models

Specific to each provider-health plan dyad
Models are normalized based on plan ŝ own data

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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)
  - Uses evidence-informed guidelines to define typical care that forms the "core services" – used to price underuse
  - Adjusts payments for risk factors - patient demographics, severity of illness, comorbidities
  - Provides allowance for potentially avoidable complications irrespective of their occurrence sending a strong signal to providers to decrease them
  - Sets aside funds into a bonus pool to be released when physicians demonstrate compliance to quality standards

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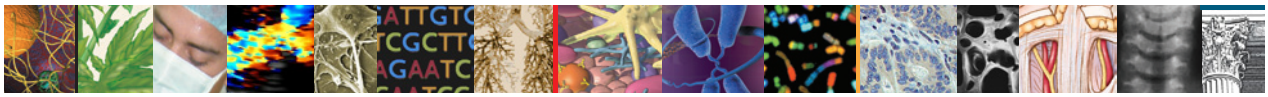
Limitations

- Definitions / methodology need to be vetted and standardized by larger physician community / specialty societies
- Codesets need to be maintained and updated –best done under the auspices of an agency like AHRQ
- We are still working in silos –building one ECR at a time
  - Integrate chronic care ECRs together into a Medical Home model
  - Integrate care across several conditions
- Need better data
  - Clinical / EMR data for cancer staging, height, weight, blood pressure, BMI
  - Patient survey data for low back pain, compliance, satisfaction
- Need to identify overuse, practice of defensive medicine
- Need to develop methods to measure
  - appropriateness of care (propensity models)
  - propensity to perform surgery



The NEW ENGLAND JOURNAL of MEDICINE

Perspective

SEPTEMBER 1, 2011

Opportunities and Challenges for Episode-Based Payment

Robert E. Mechanic, M.B.A.

Episode-based payment — in which reimbursement for medical services delivered during defined episodes of care is bundled together — is one of several payment reforms contained in the Affordable Care Act (ACA). Episodes cover a specified period that ranges from a few days to a year, during which patients may receive care from multiple providers. Medicare's diagnosis-related–group (DRG) system is a form of episode-based payment in which all inpatient hospital care associated with an admission for a designated diagnosis is bundled together. But the ACA's episode-based payment goes far beyond DRGs, defining episodes over a broader time horizon and more care settings — for example, a knee-replacement episode would begin 3 days before hospital admission, end 30 days after discharge, and include care delivered by multiple providers. Such systems may bundle reimbursement for hospital, physician, post-acute, and home care into a single payment. The objective is to create incentives for efficiency and better care coordination. But episode-based payment is much more complex to administer than fee for service or capitation and thus faces substantial implementation challenges.

In 1991, the Centers for Medicare and Medicaid Services (CMS) began an episode-based–payment experiment for coronary bypass surgery that bundled payments for Medicare Part A and Part B services during admissions, plus readmissions within 72 hours. Although this approach reduced Medicare spending and improved quality in the seven participating hospitals, the demonstration wasn't expanded because of hospital-industry opposition. Nearly a decade later, CMS began its acute care episode (ACE) demonstration, bundling Part A and Part B payments for 29 cardiac and orthopedic DRGs — but only five hospital systems currently participate. Medicare's episode-based–payment initiatives will soon expand significantly, thanks to the ACA's national pilot program that begins in 2013.

Paying providers for episodes of care is one of several leading payment-reform options.[1] Whereas private payers have experience with such approaches as pay for performance and capitation, very few have implemented episode-based payment because of its complexity. They must assign responsibility for performance for

episodes in which patients are treated by multiple caregivers in multiple settings. For example, in Medicare, 57% of episodes related to hip fractures involve four or more distinct care settings, requiring a level of joint accountability for results that's very difficult to establish.[2] Episode payment systems must also designate which services count toward particular episodes for patients with multiple health conditions. Among Medicare beneficiaries with acute myocardial infarction, for example, 63% also have hypertension and 54% have congestive heart failure.[2] In addition, payers and providers must divide bundled payments among multiple caregivers, which is particularly difficult to do outside integrated delivery systems.

Although episode-based payment creates strong incentives for discouraging unneeded services within episodes of care, it does not discourage unnecessary episodes. In fact, by aligning the financial interests of physicians and hospitals, such payment methods could boost the number of episodes of care delivered, unless payers also establish mechanisms to ensure that care is appropriate. Similarly, such systems should include financial incentives for quality to ensure that providers do not skimp on necessary services within episodes.

Nevertheless, there's ample reason to push forward. First, an episode-based approach allows provider organizations to ease into payment reform. Whereas systems such as global capitation require an organization-wide mobilization that many are unprepared for, episode-based payment lets providers test the waters with a few services and expand into new types of episodes if initial efforts are successful. Second, episode-based payments can be developed around clinical guidelines and used to engage clinicians in quality improvement.[3] Geisinger Health System's experience creating evidence-based care processes in conjunction with episode-based payment for cardiac surgery is a notable prototype.[4] Finally, episode-based payment creates incentives to improve clinical integration for specialty service lines, in contrast with the emphasis on primary care typical of capitation or shared-savings programs. Therefore, this approach is especially relevant for institutions such as academic medical centers that treat many referral patients with whom they lack a primary care relationship.

But if the use of episode-based payment is to be expanded, critical barriers must be addressed. These include the lack of standard methods for constructing "episodes," the need for reliable software to automate bundled payment, and the limited number of provider groups prepared to accept risk and manage clinical care. Immediate investments are needed to develop administratively feasible, economically sustainable, scalable programs.

The most notable episode-based–payment models are the Prometheus payment system, which has published specifications for the construction of about 20 types of episodes, and Geisinger's Provencare program, which has defined about a dozen types. But since these programs and other commercial episode-grouping software products have been designed primarily for commercially insured patients rather than Medicare beneficiaries with more complex health problems, CMS recently signed contracts with four organizations to develop public-domain episode groupers. Each organization is to deliver a prototype for six types of episodes this year. Although the contract's stated purpose is the creation of an episode-based performance-measurement system, the end product could become the foundation for the CMS national pilot program.

Another barrier to episode-based payment is the complexity of implementation. Health insurers have been reluctant to invest in the necessary software and systems because of uncertainty about whether such payment systems will ever be deployed widely. Furthermore, many payers lack the market share necessary to interest provider groups in participating. But several software firms are developing "engines" to automatically convert fee-for-service claims into episode-based payments — an extremely complex endeavor but one that could greatly reduce insurers' administrative barriers. Furthermore, payers will be able to configure the software to make prospective payments to provider groups or to calculate episode budgets but continue paying individual providers on a fee-for-service basis, an approach that is more feasible for loosely organized physicians and hospitals. Under that approach, insurers could pay periodic bonuses to clinicians whose episode costs are below budgeted amounts and assess penalties on those whose costs exceed their budgets.

A final barrier is that many provider organizations are not ready to accept episode-based payments. Success under these arrangements requires that hospitals and physicians work collab-

oratively and have data systems for tracking cost and outcomes. But the opportunity for hospitals and physicians to share in gains from increased efficiencies can bring disparate parties to the table. In the ACE demonstration, physicians can earn extra payments amounting to up to 25% of regular Medicare fees. One participant, San Antonio's Baptist Health System, reported that the gainsharing incentives helped them work more closely with surgeons to increase use of standard order sets, improve quality, and reduce costs by more than $2,000 per case for designated episodes.

Although private insurers have been slow to embrace episode-based payment, CMS can accelerate the trend. It has sufficient market share to encourage provider systems to prepare for episode payments, and it can set standards that guide private adoption of new payment models, as it did with hospital DRGs. Several factors limit the speed of progress, most notably the wide variation in delivery-system readiness, the capacity of Medicare Administrative Contractors (MACs) to administer large-scale episode-based programs, and the lack of research identifying ideal approaches.

The new Center for Medicare and Medicaid Innovation could address these issues by developing and testing models that would be feasible for providers at different stages of readiness, including programs (for loosely integrated provider groups) that offer bonuses for performance on episode-based efficiency benchmarks. The innovation center should also provide technical support to spread best practices and invest in technologies that the MACs will need to administer episode-based programs efficiently. Finally, it could take immediate steps to expand the ACE program and to join private-sector pilots. Given the urgent need for financial incentives to improve the quality and efficiency of care, such support for advancing episode-based payment would be a worthwhile investment.

Disclosure forms provided by the author are available with the full text of this article at NEJM.org.

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GLOBAL HEALTH

Health Technologies and Innovation in the Global Health Arena

Sidhartha R. Sinha, M.D., and Michele Barry, M.D.

In recent years, interest in both global health and health care innovation has grown tremendously, and there has been increasing recognition of the importance of medical devices and other nonpharmaceutical health-related technologies to all aspects of health care. In 2007, for example, the World Health Organization (WHO) issued the first global directive on medical devices, recognizing that, like medicines, many health technologies are indispensible. Many appropriate technologies, however, are inaccessible to the majority of people who need them, particularly in low- and middle-income countries — largely because of capacity constraints, a perception that medical devices are out of the reach of or superfluous to developing countries, and the lack of assiduous, multidisciplinary needs assessment and innovation promotion in such countries.

The recognition that the "right to health" should include access to certain devices comes more than 30 years after similar recognition for essential medicines. One reason for this delay is the common conception of medical devices as expensive, highly engineered products that are often nonessential. But this description is generally not applicable to the health-related technologies needed in low- and middle-income countries. The WHO defines medical devices as "health technologies that are not medicines, vaccines, or clinical procedures" but are used in diagnosis, prevention, or treatment,[1] and the types of technologies seen as potentially appropriate for low-resource settings are