



Demystifying DRGs

New Approaches for Improving DRG-Based Reimbursement for Medicaid Populations

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Presentation Outline

- Medicare's Severity-Based MS-DRGs
 - Concerns for Medicaid Populations
- APS-DRGs
 - An All-Payer Severity-DRG Alternative
- Case-Specific Severity
 - More Comprehensive Measurement of Clinical Attributes
- Hospital Acquired Conditions (HACs)
 - Reducing Payments for HACs Through DRG Grouping

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Medicare's Severity-Based MS-DRGs

DRGs for Medicare and Medicaid

- DRGs implemented for Medicare Inpatient PPS in 1983
- Medicaid Programs have adopted inpatient PPS reimbursement using DRGs over the past 25 years
 - 68% using some form of DRG or other per-case methodology
 - 32% using percent of charges and/or per-diems (non-DRG)
- DRG Alternatives for Medicaid Populations
 - CMS DRGs (easier for many reasons)
 - All-Payer Systems more appropriate for non-Medicare
 - Moms/babies, neonates, etc.
 - Incorporated severity adjustment

CMS Introduces MS-DRGs for Medicare

- Medicare Severity DRGs (MS-DRGs) implemented by CMS for its FY 2008 Inpatient PPS
- MS-DRGs apply severity of illness to Medicare patients using complications and comorbidities
- Based on existing CMS DRGs (V24):
 - Revise and expand the current CC list to categorize diagnoses as Major CCs (MCCs), CCs or non-CCs
 - Consolidate the current CMS DRGs to 334 “base” categories (referred to as Consolidated DRGs)
 - Create MCC, CC, No CC subdivisions

Consistent CMS Position on Design

- “The MS-DRGs were specifically designed for purposes of Medicare hospital inpatient services payment.”
- Among other populations “... pediatric patients are not well-represented in the MedPAR data used in the design of the MS-DRGs.”
- “For this reason, we encourage those who want to use MS-DRGs for patient populations other than Medicare to make the relevant refinements to our system so it better serves the needs of those patients.”

CMS Response to Commenter
CMS IPPS Final Rule FY 2008, pp. 115-6

MS-DRG Concerns for Medicaid Populations

- Roughly 45% of State Medicaid programs are currently using some version of CMS DRGs
- 9 State Medicaid programs (18%) adopted MS-DRGs
- Design Concerns for Applicability
 - Elimination of all age (0-17) splits
 - Other DRG consolidations
 - Non-uniform application of CC/MCC subclasses
- CMS will provide no future updates to V24 DRGs

Many State Medicaid Programs now evaluating their DRG Grouper options.

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All-Payer Severity-Adjusted DRGs (APS-DRGs)

All-Payer Severity-Adjusted DRGs (APS-DRGs)

- Alternative “All-Payer” DRG model for Medicaid
 - Severity-adjusted DRGs
 - Designed to apply to a broader (non-Medicare) population

- **APS-DRGs are consistent with the CMS severity-adjusted DRG structure (MS-DRGs)**

BUT ...

- **APS-DRGs incorporate design deviations to maintain applicability to all-payer populations:**
 - Pediatric (0-17) age splits retained for selected MS-DRGs
 - Uniform three-level severity applied to all base MS-DRGs
 - APS-DRG Neonatal Model applied to MDC 15 cases
 - MS-DRG consolidations reversed where appropriate
 - For example, sickle cell anemia and cystic fibrosis

APS-DRG Definitions for Obstetrics (MDC 14)

- MDC 14 – Pregnancy, Childbirth & The Puerperium
- APS-DRGs add CC and MCC severity levels for all consolidated (base) MS-DRGs in MDC 14

	MS-DRGs	APS-DRGs
Number of DRG Groups	15	42
Percent of Cases in:		
Non-CC/MCC DRGs	92%	79%
CC/MCC DRGs	8%	0%
CC DRGs	0	13%
MCC DRGs	0	8%

APS-DRG Neonatal Model (MDC 15)

- MDC 15 – Newborns & Other Neonates with Conditions (Perinatal)
- APS-DRG Neonatal Model
 - Replaces MS-DRG logic for all MDC 15 cases
 - **Groups** newborn and neonates based on:
 - Died or transfer status (2 groups)
 - Presence of Respiratory Assistance or Distress Syndrome (2 groups)
 - Birthweight (3 groups)
 - Assigns 3-4 **severity levels** based on:
 - LOS for died/transferred groups (3 levels)
 - Birthweight for respiratory assist/distress groups (3 levels)
 - Neonatal severity class (4 levels) for birthweight groups
- Total number of MDC 15 DRGs:
 - MS-DRGs = 7
 - APS-DRGs = 21

Medicaid R-Squares - Top MDCs

MDC	Description	Percent Distribution	CMS V24 DRGs	MS-DRGs	APS-DRGs
All MDCs			37.9%	40.4%	45.8%
14	Pregnancy, Childbirth And Puerperium	27%	60.1%	60.4%	61.9%
15	Newborn And Other Neonates (Perinatal)	25%	31.5%	31.6%	52.4%
5	Circulatory System	7%	42.1%	46.5%	46.9%
4	Respiratory System	7%	31.7%	34.2%	35.2%
6	Digestive System	5%	21.6%	29.3%	29.8%
19	Mental Diseases and Disorders	4%	9.1%	9.1%	10.0%
8	Musculoskeletal System & Connective Tissue	3%	28.7%	34.5%	35.0%
1	Nervous System	3%	28.6%	38.4%	39.0%
10	Endocrine, Nutritional And Metabolic System	2%	17.7%	24.6%	25.9%
7	Diseases and Disorders of the Hepatobiliary System and Pancreatitis	2%	20.0%	27.2%	27.2%

86%

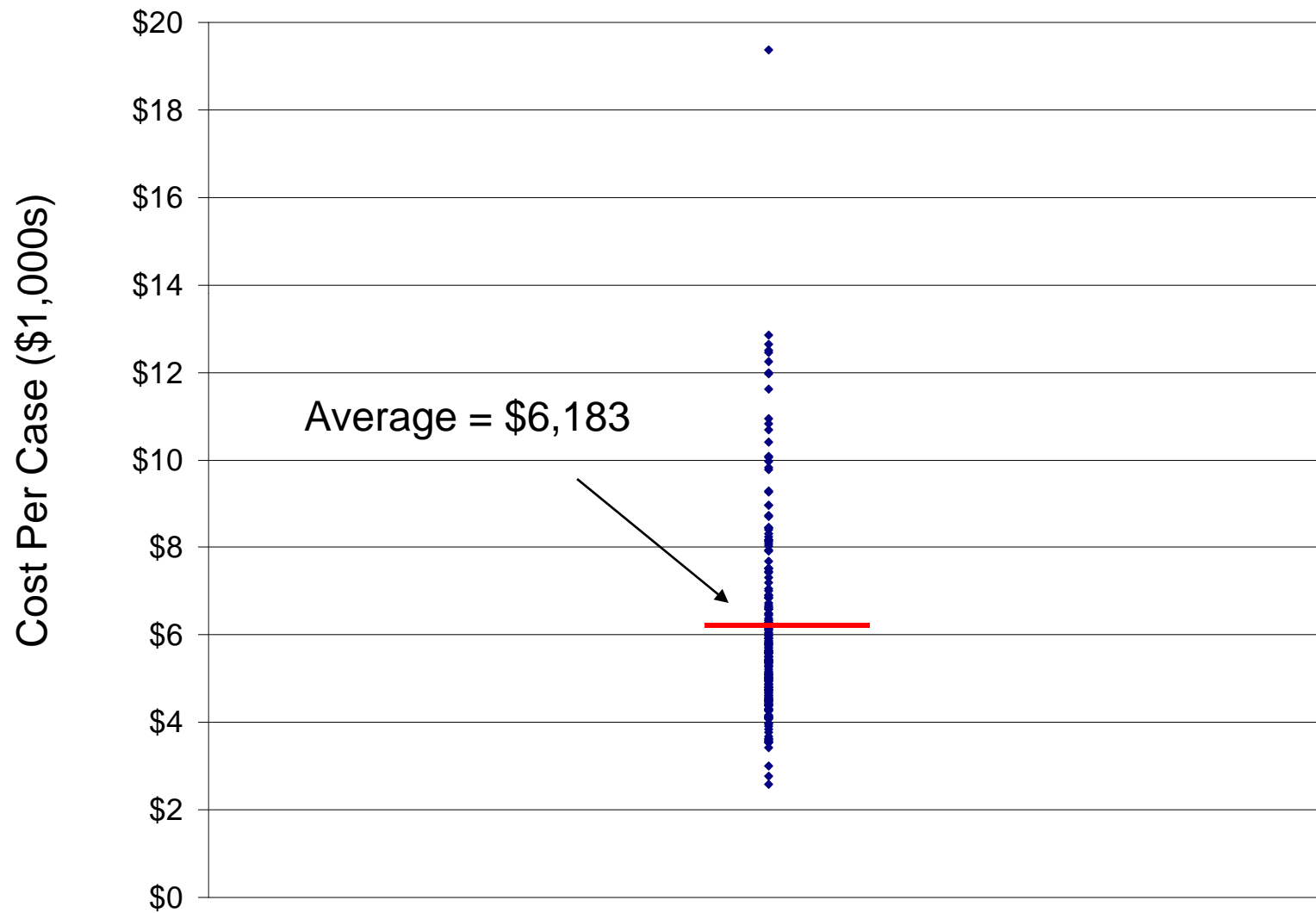
APS-DRG Impact on Hospital CMIs - Medicaid

	MS-DRG CMI Medicare Wts	APS-DRG CMI All-Payer Wts	CMI Difference	Percent Difference
Major Teaching	1.2037	1.2652	0.0615	5.1%
Minor Teaching	0.9798	0.9750	-0.0048	-0.5%
Urban Non-Teaching	0.8739	0.8374	-0.0365	-4.2%
Rural Non-Teaching	0.8122	0.7329	-0.0793	-9.8%

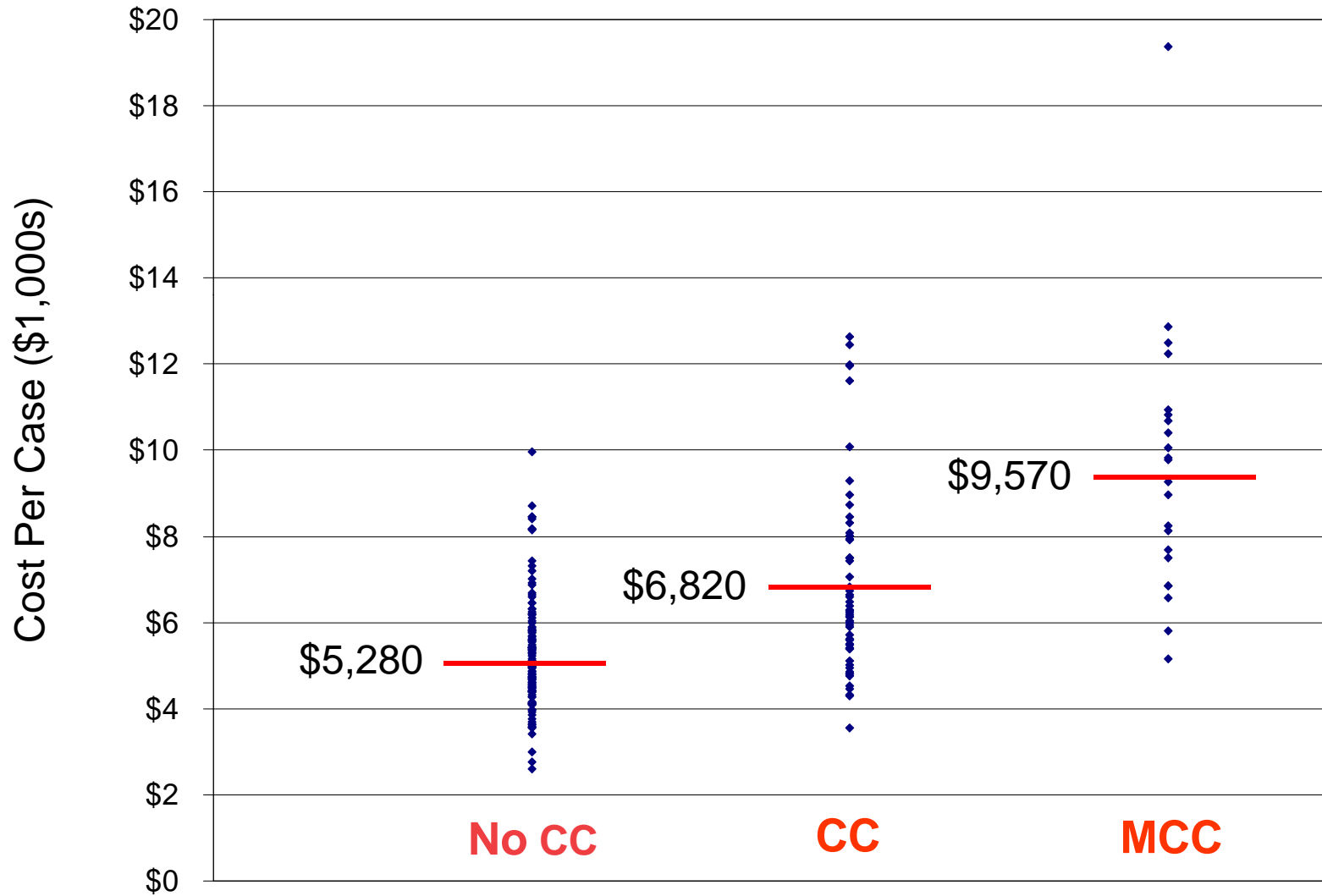
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Case-Specific Severity

Typical Cost-Per-Case Data Within a Base DRG



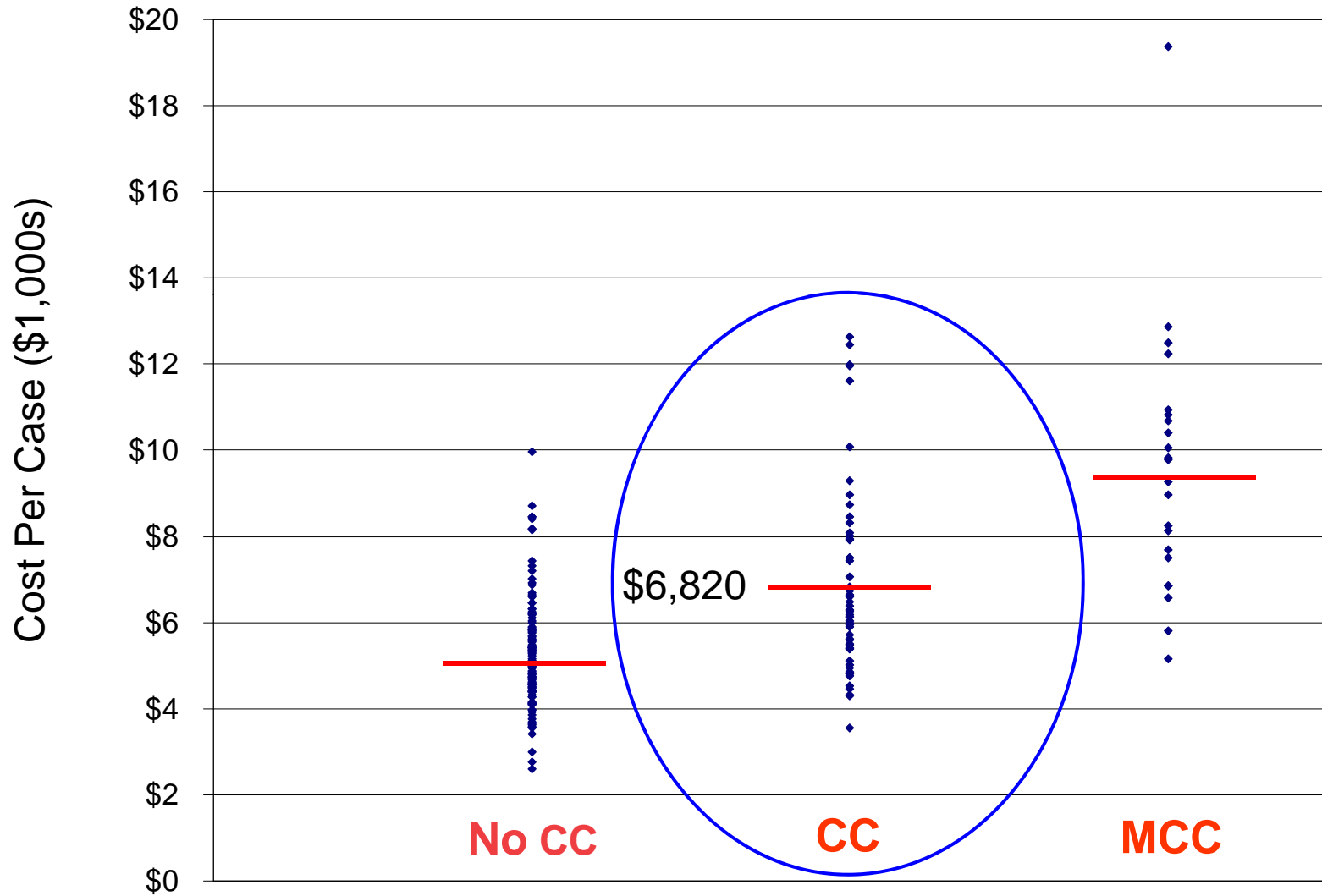
Effect of Severity-Adjustment



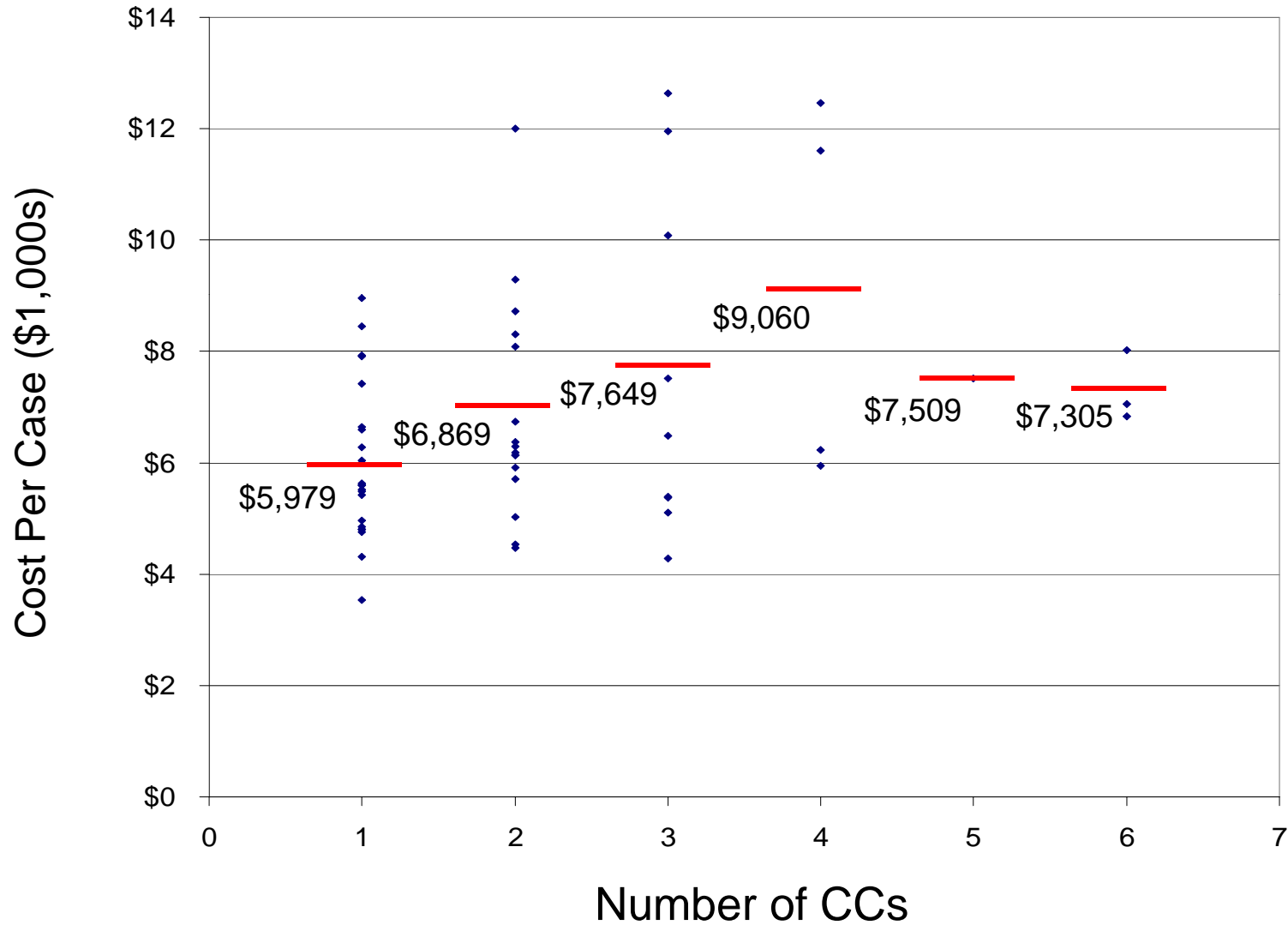
Comments on Severity-Adjustment

- Severity-adjustment improves the capacity of the classification system to explain variations in cost
- Variation remains within a severity-adjusted category that is explainable by
 - Patient characteristics
 - Clinical attributes
 - Treatment decisions
- “Clinical attributes” includes CCs and Major CCs that are not used by the severity-adjustment system
- It is possible to improve on the severity-adjustment system by subdividing individual categories

Subdividing the CC Category



Results in Six New “CC” Categories



Subdividing Categories

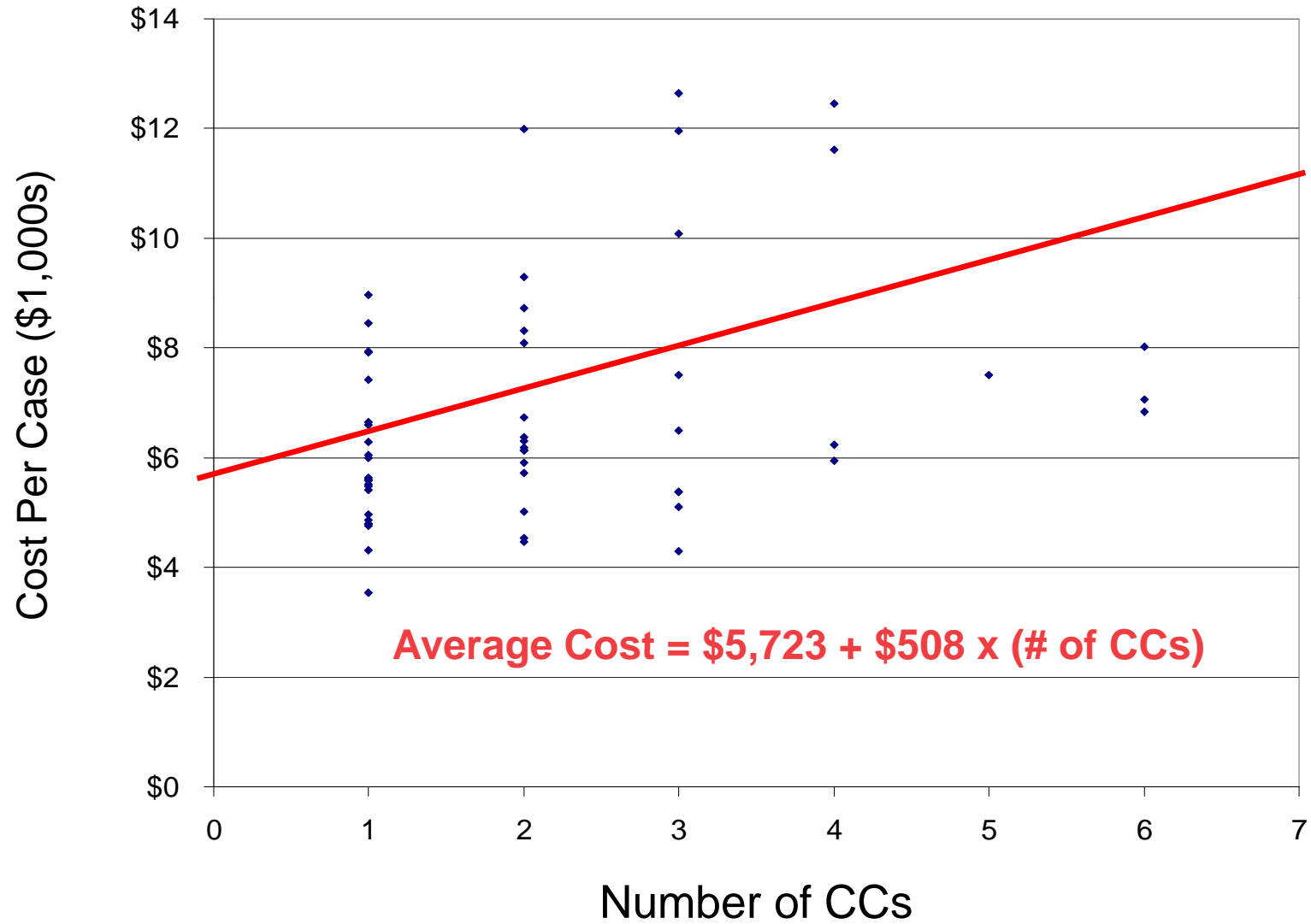
Two Problems:

- The number of categories in the casemix classification system increases exponentially
- The number of discharges per category falls
 - More empty or sparse categories
 - Less reliable estimation of expected costs and weights
 - Larger data requirements

The Solution:

- Case-Specific Weights
 - Retaining the existing number of categories
 - Asking “What is the average effect of additional CCs?”

Case-Specific Weights



Advantages of Case-Specific Weights

- Incorporates otherwise unused but valuable information about a case into the expected cost calculation
 - Number of CCs and Major CCs
 - Patient age
 - Route of admission
 - Provider characteristics
- Use statistical modeling to minimize data requirements for estimating weights
- Establish reasonable reimbursement rates for cases that are not observed in historical data

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Hospital Acquired Conditions

Hospital Acquired Conditions (HACs)

- The Deficit Reduction Act of 2005 mandated that Medicare set up incentives to reduce HACs
- Medicare established the HAC program and selected conditions using the following criteria
 - Specific ICD-9-CM codes exist
 - Condition is a CC or Major CC
 - Condition is frequent and/or high cost
 - Clear published guidelines for prevention of condition
- Medicare has selected 12 HACs for FY 2009
- Beginning October 1, 2008, hospitals will no longer receive additional reimbursement from Medicare for these HACs if they were not present on admission.

HAC Payment Reductions FY 2009

- Air embolism
- Catheter-associated urinary tract infection
- Deep vein thrombosis/Pulmonary embolism (hip/knee replacements)
- Delivery of incompatible blood products
- Falls and Trauma: Fractures, dislocations, intracranial injury, crushing injury, burn
- Mediastinitis after CABG surgery
- Object left in surgery
- Poor glycemic control
- Pressure ulcers
- Surgical site infections following bariatric surgery (for obesity only)
- Surgical site infections following certain orthopedic procedures
- Vascular catheter-associated infection

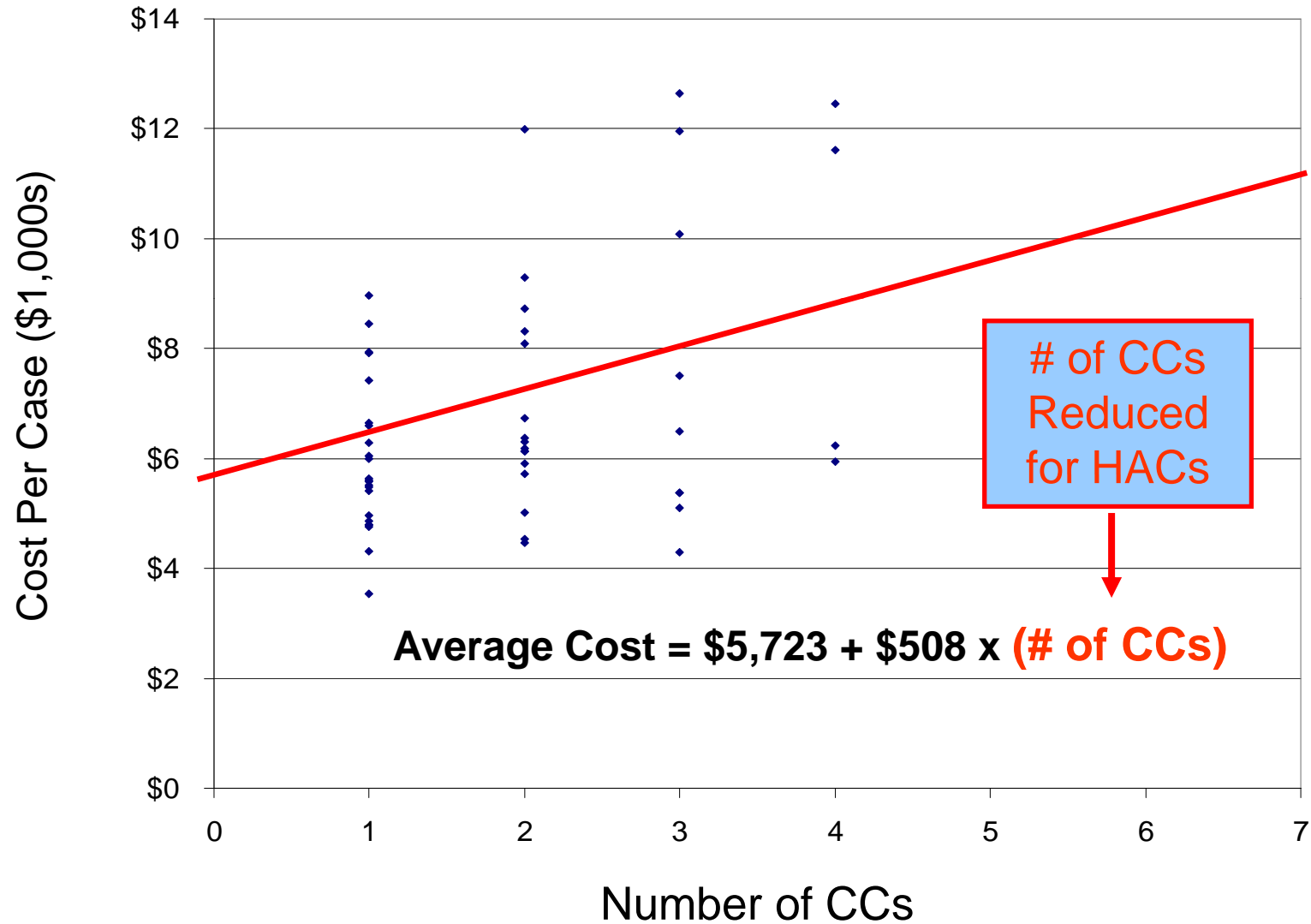
Present on Admission (POA) Indicators

- POA indicators report whether or not principal and secondary diagnoses were present at the time of inpatient admission
- POA reporting options are:
 - Y = Yes (present at the time of inpatient admission)
 - N = No (not present at the time of inpatient admission)
 - U – Unknown (documentation is insufficient to determine if condition was present on admission)
 - W = Clinically undetermined (provider is unable to clinically determine whether condition was present on admission or not)
- On October 1, 2007, Medicare began requiring hospitals to code POA indicators for all diagnosis codes

HAC Payment Reduction – MS-DRG example

Principal Diagnosis	Secondary Diagnosis	Secondary Diagnosis POA = Y		Secondary Diagnosis POA = N or U	
		MS-DRG Assigned	MS-DRG Payment	MS-DRG Assigned	MS-DRG Payment
Subarachnoid hemorrhage (ICD-9-CM = 430)	Dislocation of patella - open due to a fall (ICD-9-CM = 836.4)	Intracranial Hemorrhage or Cerebral Infarction w/ CC	\$6,177	Intracranial Hemorrhage or Cerebral Infarction w/o CC/MCC	\$5,348
	Stage III pressure ulcer (ICD-9-CM = 707.23)	Intracranial Hemorrhage or Cerebral Infarction w/ MCC	\$8,030		

HAC Payment Reduction – Case-Specific Wts



HAC/POA Issues

- Key Requirements for HAC Payment Reduction:
 - DRG groupers incorporate POA flagging logic for CCs/MCCs
 - DRG “pricer” logic for applying HAC rules
- State Medicaid programs are considering adopting similar HAC programs
 - Focus conditions – based on Medicare, but with variations
 - Used with DRG groupers other than Medicare MS-DRGs
- DRG approaches, like case-specific severity, that make more extensive use of secondary diagnoses will be more impacted by the implementation of HAC payment rules
- DRG *weights* reflecting HAC payment rules require historical data with reliable POA information

The Path Ahead

- For the past 25 years, DRGs and PPS have become the foundation of many hospital payment systems.
- Looking ahead, the importance of effective case-mix classification methodologies will only grow as we move into an era that combines prospective payment with an increasing emphasis on quality of care.
- Pay-for-performance and value-based purchasing require clinically meaningful and statistically appropriate methods to control for case-mix differences.
- While MS-DRGs may be sufficient for Medicare, it is clear that better alternatives will be needed to implement such programs with other populations.

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