ideas. answers. action.

Episode of Care : The New Math

National Bundled Payment Summit
Integrated Healthcare Association
George Washington University, Washington, DC

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Agenda

Understanding the Risk and Reward

Case Study and Discussion

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CMS Historical Medicare Claims Data

The Basics

- Applicants must have submitted a Research Request Packet and Data Use Agreement along with the LOI.
- Applicants received geographic data by HRC
- Data included beneficiary-level claims with masked beneficiary identifiers, Part A and Part B payment amount, MS-DRG, services rendered, dates of services, diagnosis and procedure codes, and institutional provider
- Beneficiary age and sex also included for applicants that choose to propose a risk adjustment methodology
- If data provided by CMS was not used to construct proposed bundled payment, applicant must describe the data used and must be presented in a way that allows for CMS analysis

Model Design – Episode Definition

Four Major Components of the Episode Definition

1. Define the MS-DRGs you propose to use to define the episode of care
   a. Provide calendar year 2008 and 2009 volume
2. Identify the MS-DRGs you propose to use to exclude beneficiary readmission to an acute care hospital from your episode of care
   a. Describe rationale why these readmissions should be excluded in the application
3. Identify the principal ICD-9 diagnosis codes or MS-DRG codes depending on your model you propose to use to exclude unrelated Part B services during the post-discharge period
   a. Describe rationale why these services should be excluded in the application
4. Define the end of the episode of care
   a. Minimum 30 days after discharge from the anchor acute care inpatient hospital stay (Model 4 - 30 days required)
   b. CMS encourages applicants to propose a longer period post-hospital discharge because CMS is interested in understanding how care redesign extends to a beneficiary’s transition back into the community

Sample Analysis – Model 2

CMS Sample Data
Select MS-DRGs with Highest Episode Payments
Model 2

MS-DRG	Total Number of Episodes	Model 2 Per Episode Payments: 30 Days			60 Days			90 Days		
		Part A	Part B	Post-Acute	Part A	Part B	Post-Acute	Part A	Part B	Post-Acute
470: Major joint replacement or reattachment of lower extremity w/o MCC	54,544	$10,478	$4,019	$7,590	$10,861	$4,373	$8,118	$11,170	$4,675	$8,352
247: Perc cardiovasc proc w drug-eluting stent w/o MCC	16,401	$12,775	$3,122	$573	$13,595	$3,481	$813	$14,173	$3,805	$1,019
227: Cardiac defibrillator implant w/o cardiac cath w/o MCC	3,378	$33,342	$3,476	$471	$34,447	$3,885	$645	$35,137	$4,253	$819
234: Coronary bypass w cardiac cath w/o MCC	3,061	$27,596	$9,148	$3,094	$28,334	$9,486	$3,379	$28,778	$9,759	$3,587
244: Permanent cardiac pacemaker implant w/o CC/MCC	6,174	$12,708	$2,522	$1,025	$13,287	$2,852	$1,228	$13,716	$3,161	$1,386
219: Cardiac valve & oth maj cardiothoracic proc w/o card cath w MCC	1,251	$49,987	$12,867	$4,824	$51,215	$13,328	$5,192	$52,142	$13,714	$5,495
261: Cardiac pacemaker revision except device replacement w CC	294	$11,474	$2,996	$514	$13,153	$3,393	$813	$13,975	$3,773	$958

Note 1: Dataset provided by CMS is for the three-year period 2007 to 2009.

Sample Analysis – Model 3

CMS Sample Data
Select MS-DRGs with Highest Episode Payments
Model 3

MS-DRG	Total Number of Episodes	Model 3 Per Episode Payments: 30 Days			60 Days			90 Days		
		Part A	Part B	Post-Acute	Part A	Part B	Post-Acute	Part A	Part B	Post-Acute
470: Major joint replacement or reattachment of lower extremity w/o MCC	54,544	$726	$2,225	$7,590	$1,110	$2,579	$8,118	$1,418	$2,880	$8,352
247: Perc cardiovasc proc w drug-eluting stent w/o MCC	16,401	$1,325	$1,774	$573	$2,145	$2,133	$813	$2,723	$2,457	$1,019
227: Cardiac defibrillator implant w/o cardiac cath w/o MCC	3,378	$1,074	$1,931	$471	$2,178	$2,341	$645	$2,869	$2,708	$819
234: Coronary bypass w cardiac cath w/o MCC	3,061	$1,433	$4,778	$3,094	$2,170	$5,116	$3,379	$2,614	$5,388	$3,587
244: Permanent cardiac pacemaker implant w/o CC/MCC	6,174	$901	$1,455	$1,025	$1,480	$1,786	$1,228	$1,908	$2,094	$1,386
219: Cardiac valve & oth maj cardiothoracic proc w/o card cath w MCC	1,251	$3,057	$6,885	$4,824	$4,285	$7,345	$5,192	$5,212	$7,732	$5,495
261: Cardiac pacemaker revision except device replacement w CC	294	$2,495	$1,648	$514	$4,174	$2,045	$813	$4,996	$2,425	$958

Note 1: Dataset provided by CMS is for the three-year period 2007 to 2009.

CMS Historical Medicare Claims Data

Sample Analysis – Model 4

CMS Sample Data
Select MS-DRGs with Highest Episode Payments
Model 4

		Model 4 Per Episode Payments								
	Total	30 Days			60 Days			90 Days		
MS-DRG	Number of Episodes	Part A	Part B	Post-Acute	Part A	Part B	Post-Acute	Part A	Part B	Post-Acute
470: Major joint replacement or reattachment of lower extremity w/o MCC	54,544	$10,478	$4,019	--	$10,861	$4,373	--	$11,170	$4,675	--
247: Perc cardiovasc proc w drug-eluting stent w/o MCC	16,401	$12,775	$3,122	--	$13,595	$3,481	--	$14,173	$3,805	--
227: Cardiac defibrillator implant w/o cardiac cath w/o MCC	3,378	$33,342	$3,476	--	$34,447	$3,885	--	$35,137	$4,253	--
234: Coronary bypass w cardiac cath w/o MCC	3,061	$27,596	$9,148	--	$28,334	$9,486	--	$28,778	$9,759	--
244: Permanent cardiac pacemaker implant w/o CC/MCC	6,174	$12,708	$2,522	--	$13,287	$2,852	--	$13,716	$3,161	--
219: Cardiac valve & oth maj cardiothoracic proc w/o card cath w MCC	1,251	$49,987	$12,867	--	$51,215	$13,328	--	$52,142	$13,714	--
261: Cardiac pacemaker revision except device replacement w CC	294	$11,474	$2,996	--	$13,153	$3,393	--	$13,975	$3,773	--

Note 1: Dataset provided by CMS is for the three-year period 2007 to 2009.

Financial Projection – Year 1

CMMI Bundled Payments - Model 4
Cardiac Service Line (ACE Demonstration MS-DRGs)
Financial Projection - Year 1
CY 2010

	Without Market Share Growth	With Market Share Growth
CMMI Payment Discount (Must be Greater than 3%)	**3.25%**	**3.25%**
Target Average Length-of-Stay (Premier 90th %tile)	**3.4**	**3.4**
Supply Cost Reduction (Implantable Devices)	**20%**	**20%**
Percent Increase in Volume (Market Share Growth)	**0%**	**5%**
Incremental Cases	**0**	**25**
Current Medicare FFS Cases	500	500
Current Contribution Margin	**$5,137,284**	**$5,137,284**
Current Contribution Margin per Case	*$10,275*	*$10,275*
Financial Impact		
Incremental Program Costs of CMMI Program	($350,000)	($350,000)
CMMI Payment Discount	(452,236)	(452,236)
Average Length-of-Stay Reduction	576,077	576,077
Supply Cost Reduction	979,993	979,993
Market Share Growth	0	312,056
Total Financial Impact	***$753,834***	***$1,065,890***
New Total Number of Medicare FFS Cases	500	525
New Contribution Margin before Gainsharing	**$5,891,118**	**$6,203,174**
New Contribution Margin per Case	*$11,782*	*$11,816*
Dollars Available for Gainsharing	$753,834	$809,026
Gainsharing Payments (50% of Dollars Available NTE 50% of Part B)	($376,917)	($404,513)
New Contribution Margin after Gainsharing	**$5,514,201**	**$5,798,661**
Percent Change in Contribution Margin	***7.3%***	***12.9%***

Note: This analysis does not calculate additional opportunities to reduce costs such as reducing readmissions, reducing ancillary and consult utilization, and the spillover effects of these initiatives to other areas of the Hospital.

Discount and Market Share Growth Scenarios – Year 1

CMMI Bundled Payments - Model 4
Cardiac Service Line (ACE Demonstration MS-DRGs)
CMMI Payment Discount and Market Share Growth Scenarios Assuming Cost Reduction Initiatives are Achieved
New Contribution Margin - Year 1
CY 2010

Financial Risk and Competitive Pricing

Market Share Growth / Percent Increase in Volume and Incremental Cases		CMMI Payment Discount in Percent and Dollars							
		3.25%	**3.50%**	**3.75%**	**4.00%**	**4.25%**	**4.50%**	**4.75%**	**5.00%**
		($452,236)	($487,023)	($521,811)	($556,598)	($591,386)	($626,173)	($660,960)	($695,748)
0.0%	0	**$5,514,201** *	$5,496,807	$5,479,414	$5,462,020	$5,444,626	$5,427,233	$5,409,839	$5,392,445
5.0%	25	**$5,798,661** *	$5,781,267	$5,763,874	$5,746,480	$5,729,086	$5,711,693	$5,694,299	$5,676,905
7.5%	38	$6,069,323	$6,051,929	$6,034,536	$6,017,142	$5,999,748	$5,982,355	$5,964,961	$5,947,567
10.0%	50	$6,404,201	$6,386,808	$6,369,414	$6,352,020	$6,334,627	$6,317,233	$6,299,839	$6,282,446
12.5%	63	$6,803,296	$6,785,902	$6,768,508	$6,751,114	$6,733,721	$6,716,327	$6,698,933	$6,681,540
15.0%	75	$7,266,606	$7,249,212	$7,231,818	$7,214,425	$7,197,031	$7,179,637	$7,162,244	$7,144,850

Current Contribution Margin **$5,137,284**

* Denotes the assumptions used for Financial Projection table

Risk Analysis – Year 1

CMMI Bundled Payments - Model 4
Cardiac Service Line (ACE Demonstration MS-DRGs)
Risk Analysis if Cost Reduction Initiatives are Not Achieved - Year 1
CY 2010

	CMMI Program NOT Awarded	CMMI Program Awarded
Current Contribution Margin	**$5,137,284**	**$5,137,284**
Financial Impact		
Incremental Program Costs	$0	($350,000)
CMMI Payment Discount (3.25%)	0	(452,236)
Loss of Market Share (5% decrease in cases)	(256,864)	0
Readmissions Penalty (1% starting FFY 2013)	(120,000)	0
Value-Based Purchasing Risk (1% starting FFY 2013)	(120,000)	0
Hospital-Acquired Conditions Penalty (1% starting FFY 2015)	(120,000)	0
Total Financial Impact	**($616,864)**	**($802,236)**
New Contribution Margin	**$4,520,420**	**$4,335,048**
Percent Change in Contribution Margin	***-12.0%***	***-15.6%***

Note: The Health Reform risks calculated here are based on the service line Medicare payments only and not the impact hospital-wide.

Gainsharing Payments – Year 1 and Maximum

CMMI Bundled Payments - Model 4
Cardiac Service Line (ACE Demonstration MS-DRGs)
Gainsharing Payments - Year 1
CY 2010

	Without Market Share Growth	With Market Share Growth
CMMI Payment Discount (Must be Greater than 3%)	**3.25%**	**3.25%**
Target Average Length-of-Stay (Premier 90th %tile)	**3.4**	**3.4**
Supply Cost Reduction (Implantable Devices)	**20%**	**20%**
Percent Increase in Volume (Market Share Growth)	**0%**	**5%**
Incremental Cases	**0**	**25**
Projected Medicare FFS Cases	500	525
Projected Gainsharing Payments from Financial Projection	$376,917	$404,513
Maximum Gainsharing Payments (50% of Part B)	$734,035	$770,737
Projected Gainsharing Payment per Case	**$754**	**$771**
Maximum Gainsharing Payment per Case	**$1,468**	**$1,468**
Projected Gainsharing Payment as % of Part B	26%	26%

Gainsharing by Physician Example

Maximum Gainsharing Payment per Case
$1,468

Cardiac Surgeon

60%
$881
per case

Cardiologist

17%
$250
per case

Anesthesiologist

16%
$235
per case

Hospitalist/ Intensivist

5%
$73
per case

Radiologist

2%
$29
per case

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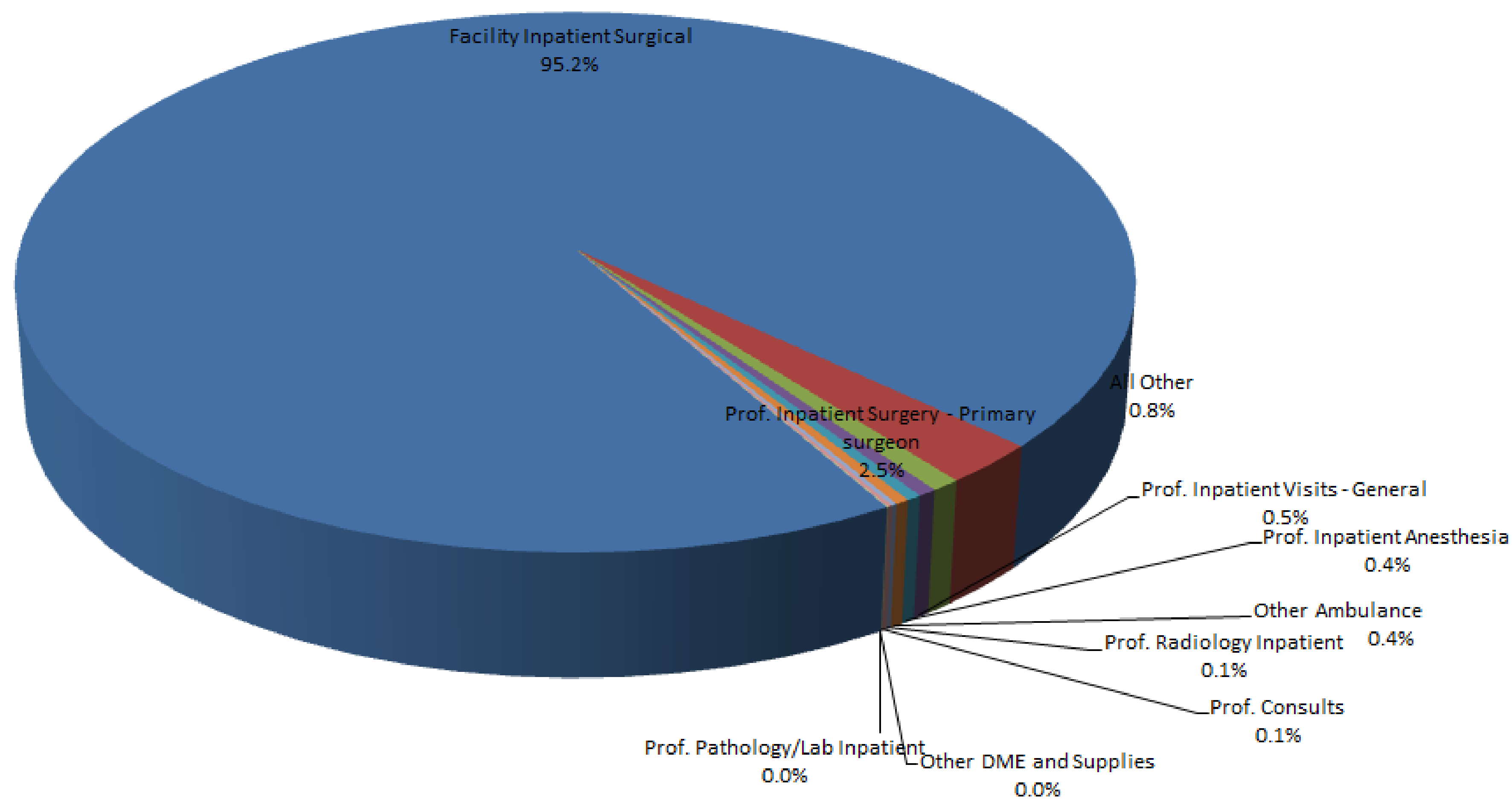
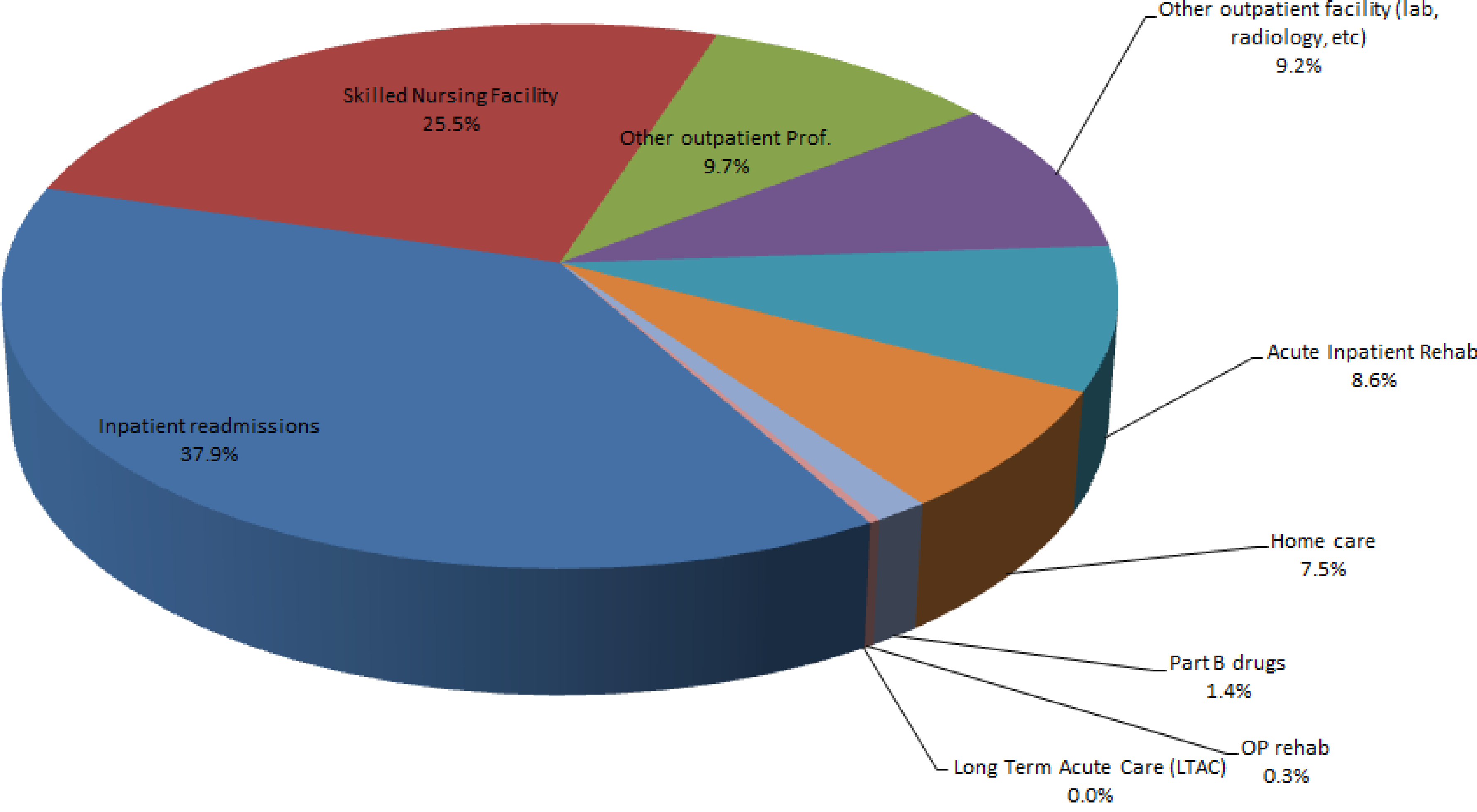
Episodic Cost: DRG 227

SUMMARY COST MODEL (figures rounded)	Average Allowed Cost/Patient Having MS-DRG 227		
Inpatient Cost Categories	**Avg. Cost**	**Post-acute Care Cost Categories (30 Days)**	**Avg. Cost**
Facility Inpatient Surgical	40,673	Inpatient Readmissions	890
Prof. Inpatient Surgery - Primary surgeon	1,075	Skilled Nursing Facility	599
All Other	324	Other Outpatient Prof.	227
Prof. Inpatient Visits - General	206	Other Outpatient Facility (lab, radiology, etc.)	215
Prof. Inpatient Anesthesia	162	Acute Inpatient Rehab	200
Other Ambulance	152	Home Care	175
Prof. Radiology Inpatient	60	Part B Drugs	32
Prof. Consults	56	OP Rehab	6
Other DME and Supplies	11	Long-term Acute Care (LTAC)	-
Prof. Pathology/Lab Inpatient	1	Other Including DME	
Prof. Inpatient Surgery - Assistant Surgeon			
Total Inpatient Claims Per Patient	42,722	Total post-acute care claims per patient	2,982
Total bundle claim costs per patient (IP and 30 days after dc)	$45,704		
* Average cost per patient reflects some patients not receiving some services; total costs for each service are average across the hip/knee surgery population			

Episodic Cost: DRG 227



Episodic Cost: DRG 227

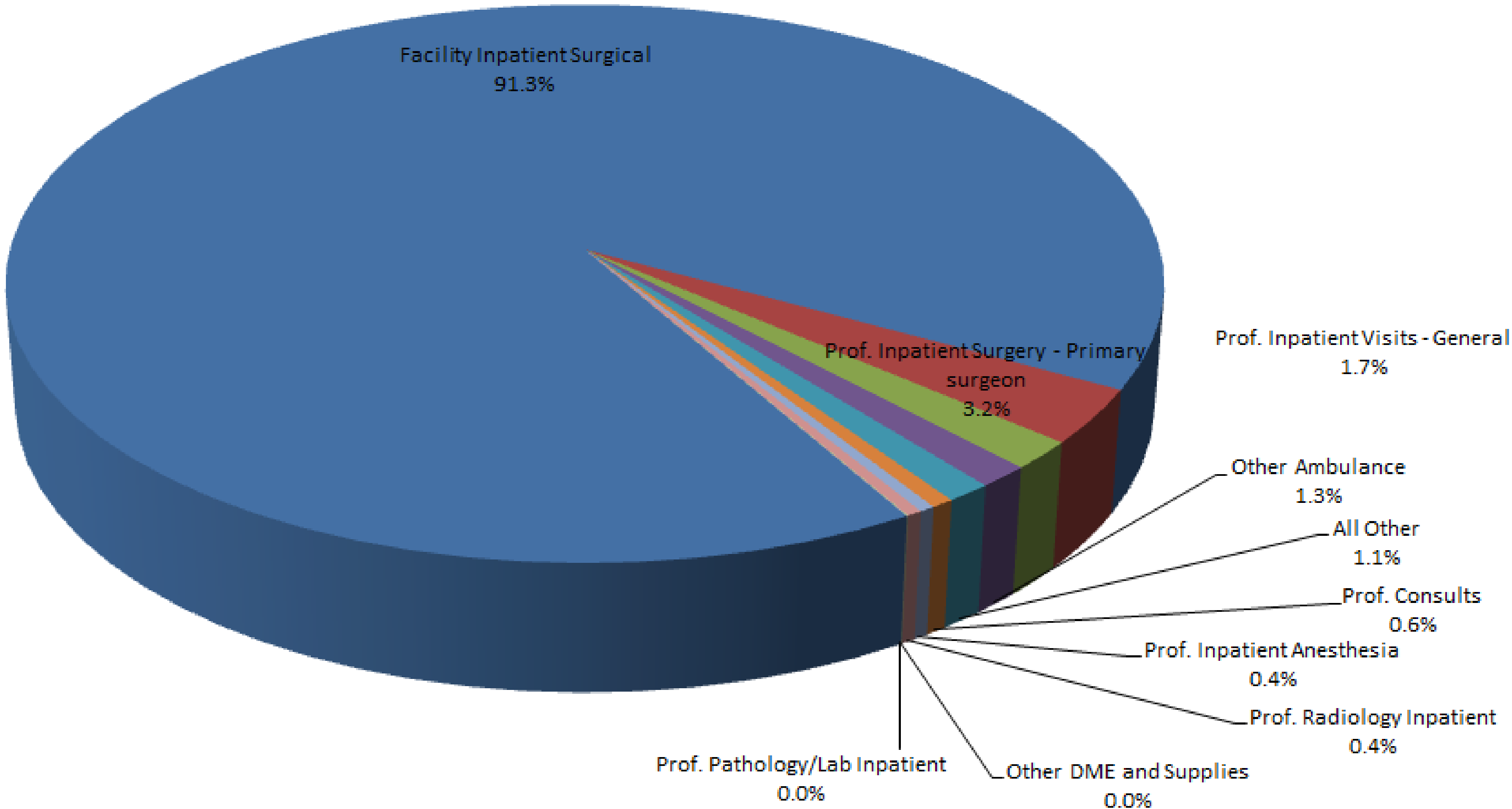


Episodic Cost: DRG 244

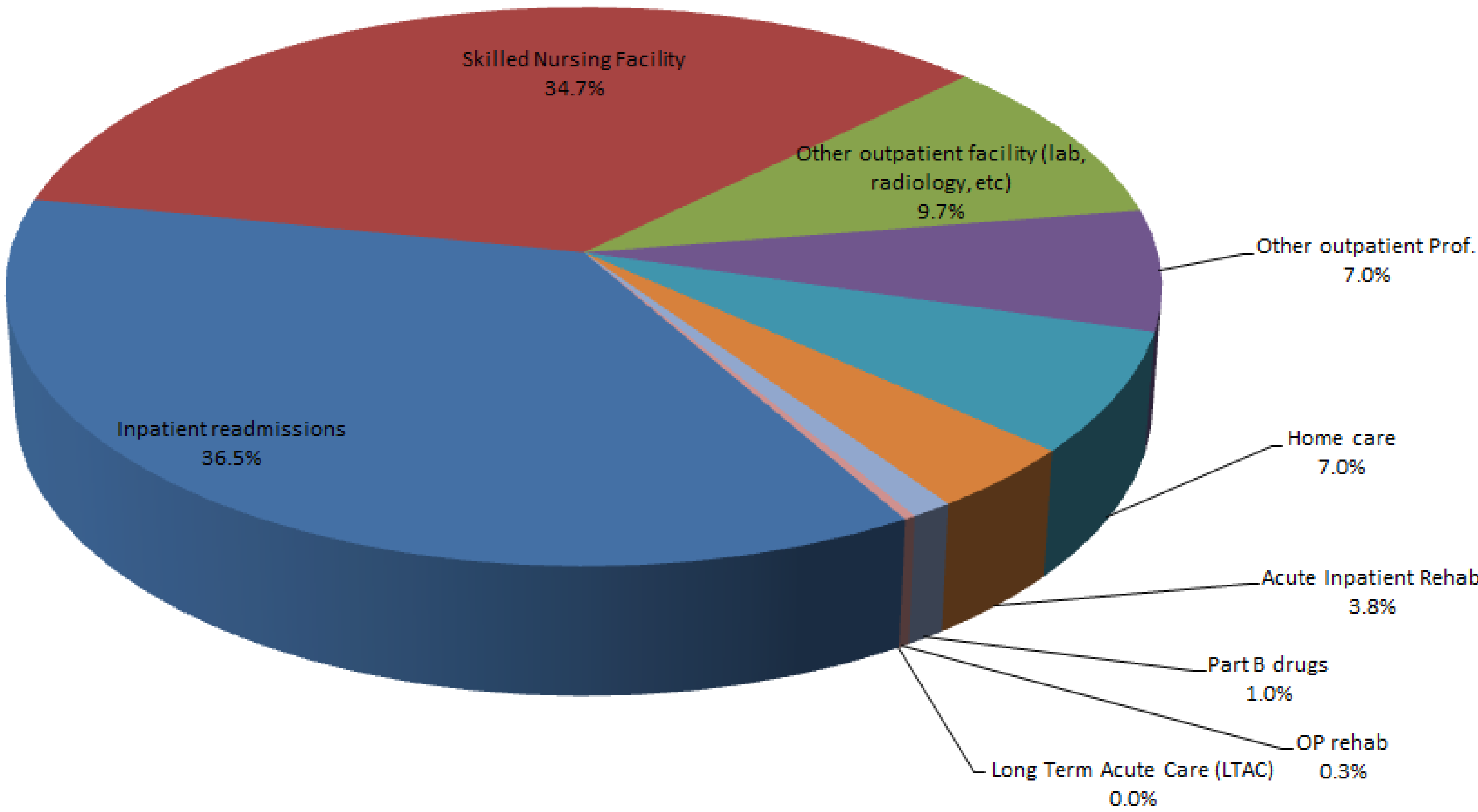
SUMMARY COST MODEL (figures rounded)	Average Allowed Cost/Patient Having MS-DRG 244		
Inpatient Cost Categories	**Avg. Cost**	**Post-acute Care Cost Categories (30 Days)**	**Avg. Cost**
Facility Inpatient Surgical	14,782	Inpatient Readmissions	1,085
Prof. Inpatient Surgery - Primary Surgeon	518	Skilled Nursing Facility	1,030
Prof. Inpatient Visits - General	271	Other Outpatient Facility (lab, radiology, etc.)	288
Other Ambulance	209	Other Outpatient Prof.	208
All Other	184	Home Care	208
Prof. Consults	91	Acute Inpatient Rehab	113
Prof. Inpatient Anesthesia	64	Part B Drugs	31
Prof. Radiology Inpatient	62	OP Rehab	8
Other DME and Supplies	5	Long-term Acute Care (LTAC)	0
Prof. Pathology/Lab Inpatient	2	Other Including DME	0
Prof. Inpatient Surgery - Assistant Surgeon			0
Total Inpatient Claims Per Patient	16,188	Total post-acute care claims per patient	2,971
Total bundle claim costs per patient (IP and 30 days after dc)	$19,159		

* Average cost per patient reflects some patients not receiving some services; total costs for each service are average across the hip/knee surgery population

Episodic Cost: DRG 244



Episodic Cost: DRG 244

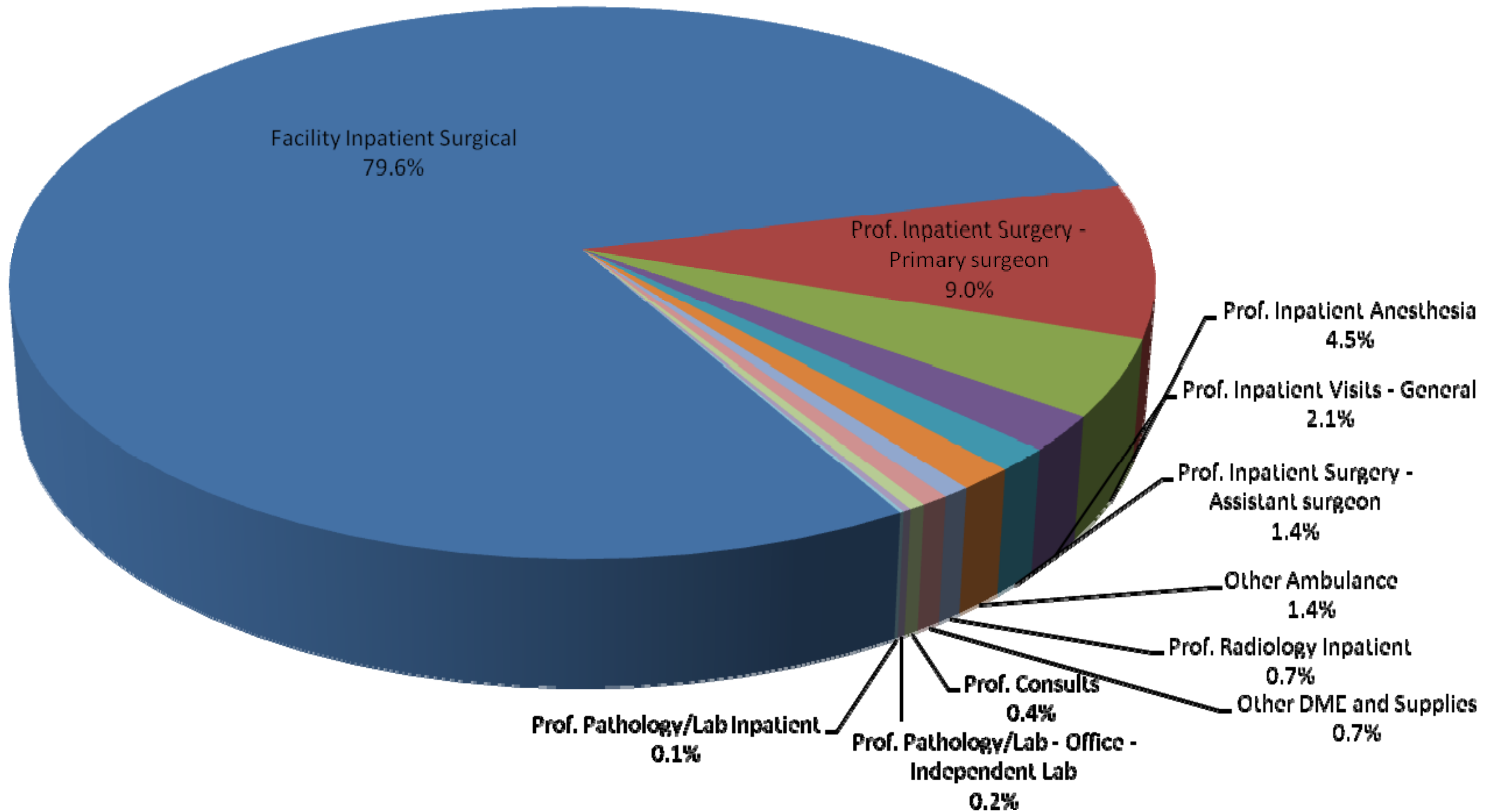


Episodic Cost: DRG 470 Major Joint (Hip or Knee)

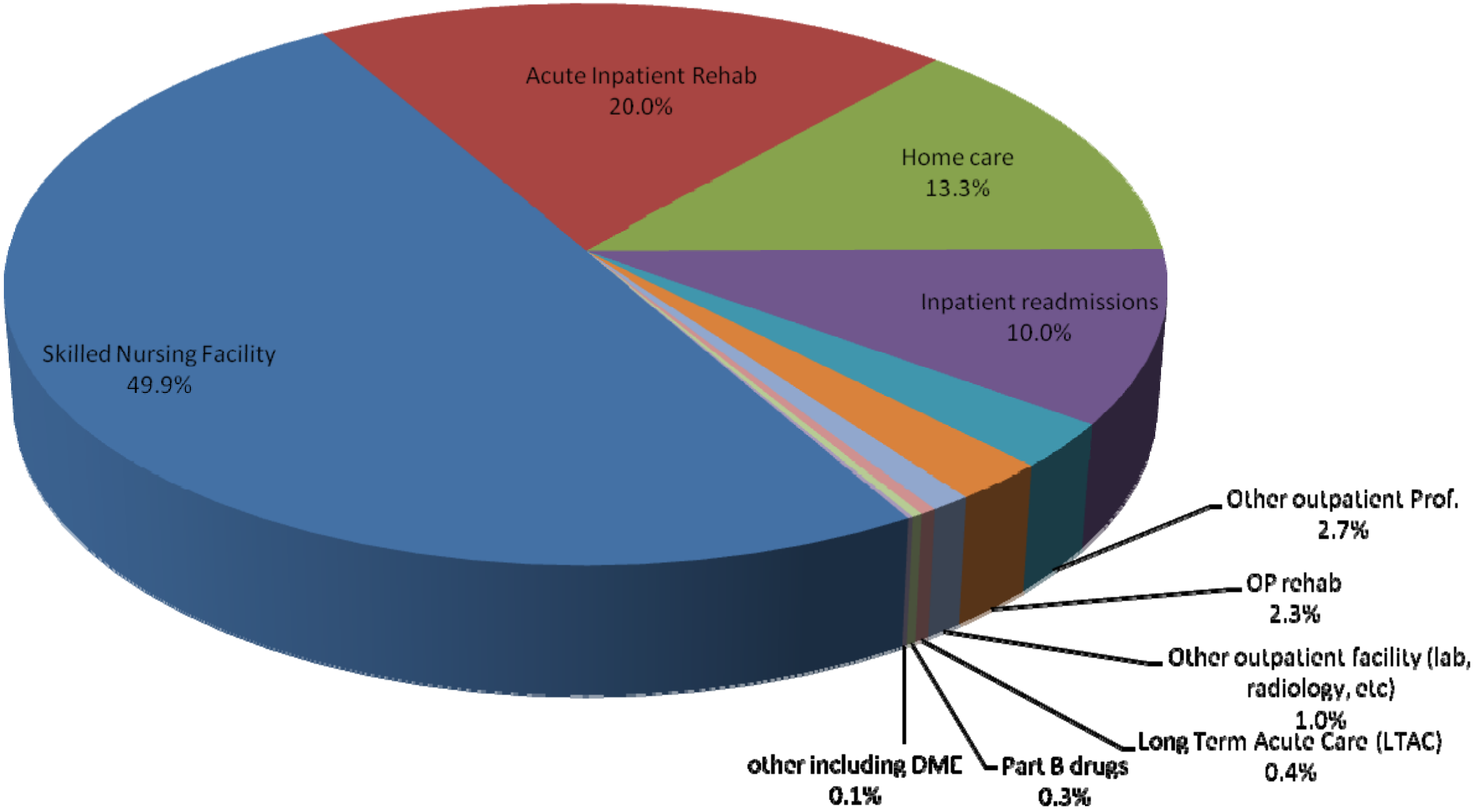
SUMMARY COST MODEL (figures rounded)	Average Allowed Cost/Patient Having Hip/Knee Surgery Admissions *	Post -acute Care Cost Categories (30 days)	Average Allowed Cost/Patient Having Hip/Knee Surgery Admissions *
Inpatient Cost Categories	**Avg. Cost**	**Post-acute Care Cost Categories**	**Avg. Cost**
Facility Inpatient Surgical	13,800	Skilled Nursing Facility	4,500
Prof. Inpatient Surgery - Primary surgeon	1,560	Acute Inpatient Rehab	1,800
Prof. Inpatient Anesthesia	780	Home care	1,200
Prof. Inpatient Visits - General	360	Inpatient readmissions	900
Prof. Inpatient Surgery - Assistant surgeon	240	Other outpatient Prof.	240
Other Ambulance	240	OP rehab	210
Prof. Radiology Inpatient	120	Other outpatient facility (lab, radiology, etc)	90
Other DME and Supplies	120	Long-term Acute Care (LTAC)	36
Prof. Consults	72	Part B drugs	24
Prof. Pathology/Lab - Office - Independent Lab	36	Other including DME	12
Prof. Pathology/Lab Inpatient	18		
Total inpatient claims per patient	$17,346	Total post-acute care claims per patient	$9,012
Total bundle claim costs per patient (IP and 30 days after dc) $26,358			

* Average cost per patient reflects some patients not receiving some services; total costs for each service are average across the hip/knee surgery population

DRG 470 Major Joint Spend for Inpatient



DRG 470 Major Joint Post-acute Spend



Questions and Discussion

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