

Client | Healthcare Bluebook

Team Phoenix



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GOALS

Measure how payments and counts changed over time for 2015-2017

Which procedures had the largest change in average payment and utilization from 2015 to 2017?



APPROACH

- Combine 2015-2017 data
 - o Tidy data: concatenate, year as new column
- Exploratory Data Analysis
 - Understand the data
- Visualize for actionable insights
 - Tool to answer business question, and functionality to explore further



CHALLENGES

- 30 mil rows of messy data
- 6,700+ HCPCS codes
- Handling unruly nulls while joining data across years
- Difference in payments by place of service
- Changes to codes across years



PAYMENT - METHODOLOGY

- Created "Payment type" column
 - o Combine PoS and provider type, to compare apples to apples
 - Doctor & Facility
 - Doctor Only
 - Facility Only
- Calculate average, grouping by HCPS and Payment Type
 - Nulls ignored in average calculation
- Calculate difference between years



FINDINGS

Average Medicare Payment Allowed

Top 10 Average Increases

		Year 2017				
HCPCS Code						
	HCPCS Description	Rank (Increase)	Avg. Allowed Amount	Year on Year Change		
L8679	Implantable neurostimulator, pulse generator, any type	1	7,920	7,520		
J7187	Injection, von willebrand factor complex (humate-p), pe	2	27,739	3,875		
Q2043	Sipuleucel-t, minimum of 50 million autologous cd54+ c	3	39,279	3,341		
J0600	Injection, edetate calcium disodium, up to 1000 mg	4	2,610	2,087		
81599	Multianalyte assay procedure with algorithmic analysis	5	2,076	2,055		
21087	Impression and custom preparation of nasal prosthesis	6	1,741	932		
58558	Biopsy and/or removal of polyp of the uterus using an e	7	1,308	900		
36253	Insertion of catheters into main and accessory arteries	8	2,101	764		
J7195	Injection, factor ix (antihemophilic factor, recombinant)	9	31,261	725		
J2505	Injection, pegfilgrastim, 6 mg	10	4,205	600		

Top 10 Average Decreases

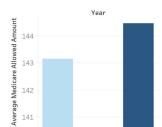
		Year 2017				
HCPCS Code	HCPCS Description	Rank (Decrease)	Avg. Allowed Amount	Year on Year Change		
J7190	Factor viii (antihemophilic factor, human) per i.u.	1	2	-16,273		
J7192	Factor viii (antihemophilic factor, recombinant) per i.u.,	2	12,881	-5,772		
J9999	Not otherwise classified, antineoplastic drugs	5	951	-1,864		
41530	Destruction of tongue tissue, per session	4	956	-2,160		
37243	Occlusion of tumors or obstructed blood vessel with rad	7	9,224	-1,174		
86849	Immunology procedures	8	23	-935		
87999	Microbiology procedures	9	310	-740		
55873	Destruction of prostate gland using ultrasound guidance	3	4,576	-2,903		
20982	Destruction of 1 or more bone growths accessed throug	6	831	-1,812		
Q0495	Battery/power pack charger for use with electric or elec	10	4,076	-687		

Doctor & Facility, 2015-2017



DASHBOARD

Avg Medicare Allowed Amount



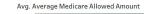
2016

Breakdown of Data

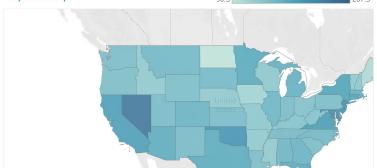
	Year						
	Avg. Allowed Amount			Year on Year Change			
HCPCS Description	2015	2016	2017	2015	2016	2017	
Injection, factor viii fc fusi			38,626				^
Sipuleucel-t, minimum of 5	35,939	37,672	39,279		1,734	1,607	
Factor ix (antihemophilic f	31,491						
Injection, factor ix (antihe	30,537	29,025	31,261		-1,512	2,236	
Injection, von willebrand f	23,864	34,202	27,739		10,338	-6,463	
Factor viii (antihemophilic	18,653	19,275	12,881		622	-6,395	
Removal of plaque and ins	15,306	15,187	14,850		-119	-337	
Microprocessor control un	13,768	13,562	13,826		-206	265	
	Injection, factor viii fc fusi Sipuleucel-t, minimum of 5., Factor ix (antihemophilic f., Injection, factor ix (antihe Injection, von willebrand f., Factor viii (antihemophilic Removal of plaque and ins	HCPCS Description 2015 Injection, factor viii fc fusi Sipuleucel+t, minimum of 5 Sipuleucel-t, minimum of 5 1,491 Injection, factor ix (antihe 1,191 Injection, yon willebrand f 1,23,864 Factor viii (antihemophilic 1,8653 Removal of plaque and ins 15,306	HCPCS Description 2015 2016 Injection, factor viii fc fusi 35,939 37,672 Sipuleucel-t, minimum of S 35,939 37,672 Factor ix (antihemophilic f 31,491 1 Injection, factor ix (antihe 30,537 29,025 Injection, von willebrand f 23,864 34,202 Factor viii (antihemophilic 18,653 19,275 Removal of plaque and ins 15,306 15,187	Avg. Allowed Amount HCPCS Description 2015 2016 2017 Injection, factor viii fc fusi 38,626 38,626 Sipuleucel+, minimum of S 35,939 37,672 39,279 Factor ix (antihemophilic f 31,491 1 Injection, factor ix (antihe 30,537 29,025 31,261 Injection, von willebrand f 23,864 34,202 27,739 Factor viii (antihemophilic 18,653 19,275 12,881 Removal of plaque and ins 15,306 15,187 14,850	Avg. Allowed Amount Year of 2015 HCPCS Description 2015 2016 2017 2015 Injection, factor viii fc fusi 38,626 38,626 38,626 38,626 38,626 38,626 38,626 38,626 38,626 38,626 38,626 38,626 39,279 39,279 38,626 38,626 38,626 39,279 38,626 38,626 38,626 39,279 39,279 38,626 38,626 38,262 39,279 39,279 39,279 38,261 38,626 31,261 38,626 31,261 38,262 31,261 38,262 31,261 38,262 31,261 38,262 31,261 38,262 31,261 38,262 31,261 38,262 31,261 38,262 31,261 38,262 31,261 38,262 31,261 38,262 31,261 38,262 31,261 38,262 32,739 31,261 38,262 32,273 32,261 38,262 32,261 32,261 32,261 32,261 32,261 32,261 32,261 32,2	HCPCS Description 2015 2016 2017 2015 2016 Injection, factor viii fc fusi 38,626 38,626 1,734 Sipuleucel-t, minimum of 5 35,939 37,672 39,279 1,734 Factor ix (antihemophillic f 31,491 1 1,712 1 Injection, factor ix (antihe 30,537 29,025 31,261 -1,512 1 1,734 Injection, von willebrand f 23,864 34,202 27,739 10,338 Factor viii (antihemophilic 18,653 19,275 12,881 622 Removal of plaque and ins 15,306 15,187 14,850 -119	Avg. Allowed Amount Year Orange HCPCS Description 2015 2016 2017 2015 2016 2017 Injection, factor viii fc fusi 38,626

Explore Map

2015



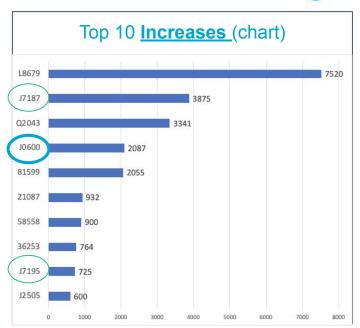




2017



Average Medicare Payment Allowed

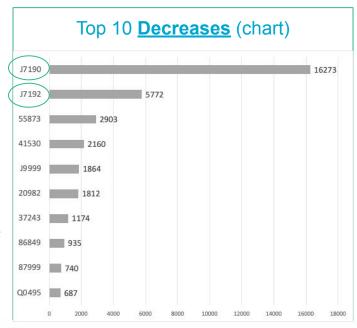


J7xxx Antihemophilic drugs: Out with the old/1990s, in with the new/2010s

J0600 Drug to treat lead poisoning increased from \$523 to \$2,610 from 2015 to 2017

"The original [non-medicare] cost was \$950 and it increased under Valeant's control to \$7,116 in early 2014, with additional increases the same year to its current price of \$27,000."

PRNeswire Article





UTILIZATION - METHODOLOGY

- Used all "Payment type" categories
 - Doctor & Facility, Doctor Only, Facility Only

- Calculated sums, grouping by HCPCS Code
 - Nulls treated as 0

- Calculated difference between years
 - o If HCPCS code was removed in 2017, did not use in top 10 analysis



FINDINGS

Number of Distinct Medicare Beneficiary Per Day Services

Top 10 Increases

Top 10 Decreases

	Rank_Top	Number Of Distinct Medicare Beneficiary Per Day Services	Increase Since 2015		Rank_Bottom	Number Of Distinct Medicare Beneficiary Per Day Services	Decrease Since 2015		
HCPCS	2017	2017	2017	HCPCS	2017	2017	2017		
99214	1	101,135,852	6,469,036	G9008	1		-3,734,415		
97110	2	30,113,004	3,900,184	85610	2	10,702,525	-3,551,666		
80307	3	3,061,945	3,061,945	G9152	3		-3,522,153		
97140	4	20,196,611	2,855,934	90670	4	2,024,985	-2,842,298		
73502	5	2,497,315	2,497,315	G9151	5		-2,285,047		
99490	6	3,293,986	2,358,089	99213	6	96,476,303	-2,215,204		
G0439	7	6,345,749	2,084,892	G9153	7		-2,167,568		
97530	8	8,269,532	2,067,591	36415	8	49,824,578	-2,154,736		
97112	9	9,406,511	2,062,462	G0009	9	3,381,640	-2,002,416		
77063	10	2,829,816	1,731,693	99212	10	11,712,312	-1,981,803		

Change from 2015 to 2017



DASHBOARD

Number of Distinct Medicare Beneficiary Per Day Services

Breakdown of Data

		Number Of Distinct Medicare Beneficiary Per Day Services			Year to Year Difference		
HCPCS	Hcpcs Description	2015 Q1	2016 Q1	2017 Q1	2015 Q1	2016 Q1	2017 Q1
97110	Therapeutic exercise to develop s	26,212,820	28,576,499	30,113,004		2,363,679	1,536,505

HCPCS

97110

Hcpcs Description

(Ail)

Payment Type

((Ail)

Provider Type

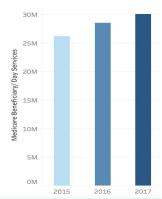
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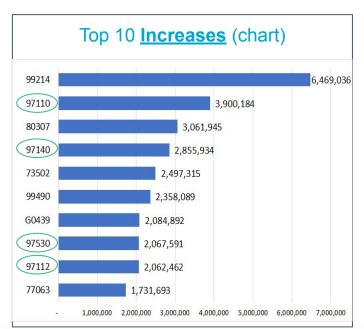
Explore Map







Number of Distinct Medicare Beneficiary Per Day Services



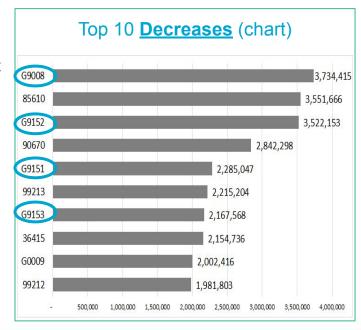
Increases: 97xxx

Four codes for physical therapy had the highest usage increases from 2015 to 2017

Decreases: G9xxx

General office visits, drawing blood for lab work, and pneumonia vaccine.

More research needed to know whether changes are due to utilization of these services vs. code changes.





SUMMARY

- Combined 3 years of data
- Identified top changes for both payment amount and utilization
- Created multiple tools to help HCBB further explore this data
 - Slice by
 - Payment type
 - State
 - Provider type
 - Procedure code/description

