



Phoenix Analytics

Client | Healthcare Bluebook



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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
 - 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
 - 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

HCPCS Code	HCPCS Description	Year 2017		
		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

HCPCS Code	HCPCS Description	Year 2017		
		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

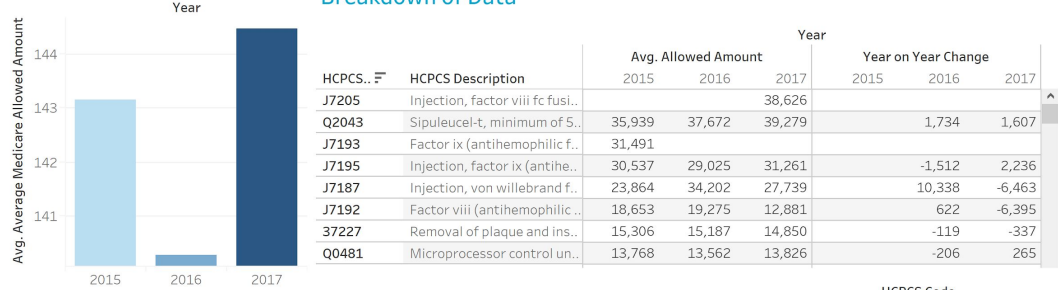
Doctor & Facility, 2015-2017



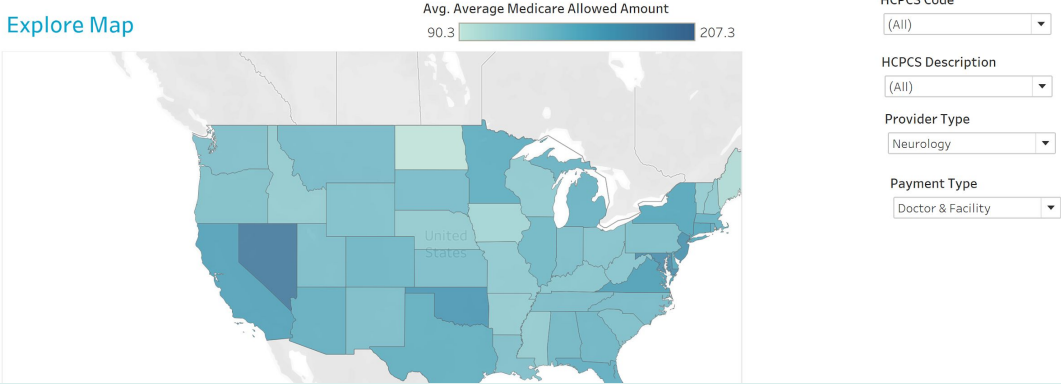
DASHBOARD

Avg Medicare Allowed Amount

Breakdown of Data

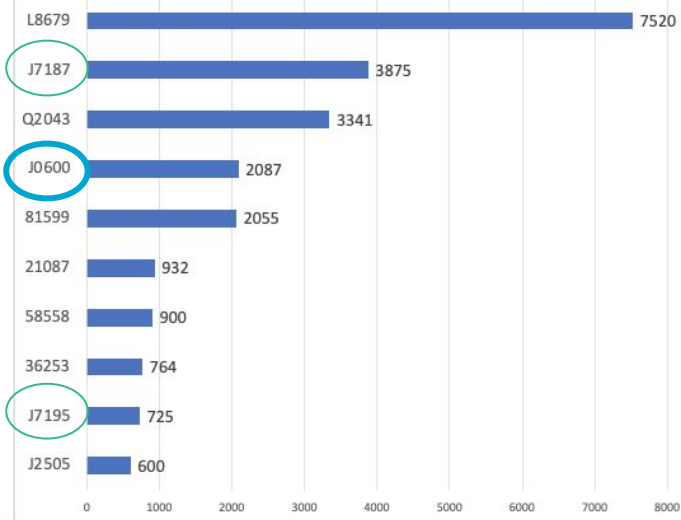


Explore Map



Average Medicare Payment Allowed

Top 10 Increases (chart)



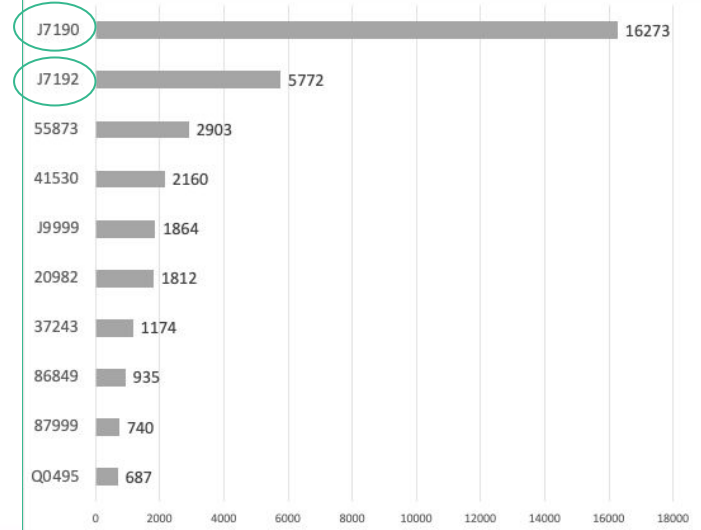
J7xxx
Antihemophilic drugs:
Out with the old/1990s,
in with the new/2010s

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."

PRNewswire Article

Top 10 Decreases (chart)



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
 - 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

	Rank_Top	Number Of Distinct Medicare Beneficiary Per Day Services	Increase Since 2015
HCPCS	2017	2017	2017
99214	1	101,135,852	6,469,036
97110	2	30,113,004	3,900,184
80307	3	3,061,945	3,061,945
97140	4	20,196,611	2,855,934
73502	5	2,497,315	2,497,315
99490	6	3,293,986	2,358,089
G0439	7	6,345,749	2,084,892
97530	8	8,269,532	2,067,591
97112	9	9,406,511	2,062,462
77063	10	2,829,816	1,731,693

Top 10 Decreases

	Rank_Bottom	Number Of Distinct Medicare Beneficiary Per Day Services	Decrease Since 2015
HCPCS	2017	2017	2017
G9008	1		-3,734,415
85610	2	10,702,525	-3,551,666
G9152	3		-3,522,153
90670	4	2,024,985	-2,842,298
G9151	5		-2,285,047
99213	6	96,476,303	-2,215,204
G9153	7		-2,167,568
36415	8	49,824,578	-2,154,736
G0009	9	3,381,640	-2,002,416
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

HCPCS	Hcpcs Description	Number Of Distinct Medicare Beneficiary Per Day Services			Year to Year Difference		
		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

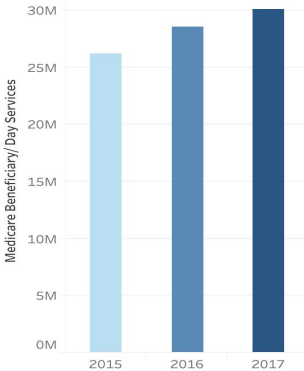
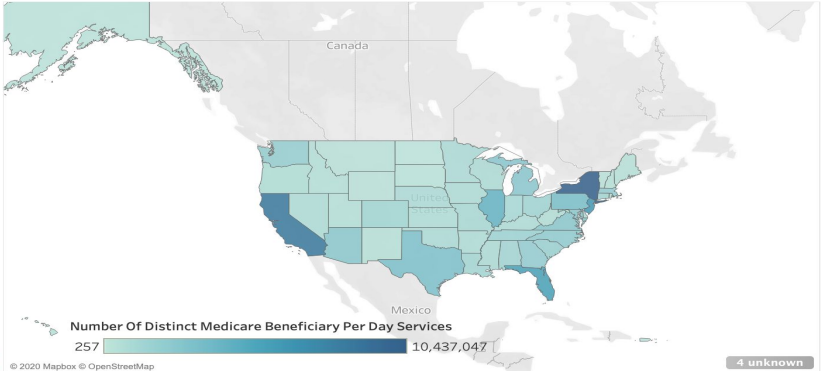
HCPCS
97110

Hcpcs Description
(All)

Payment Type
(All)

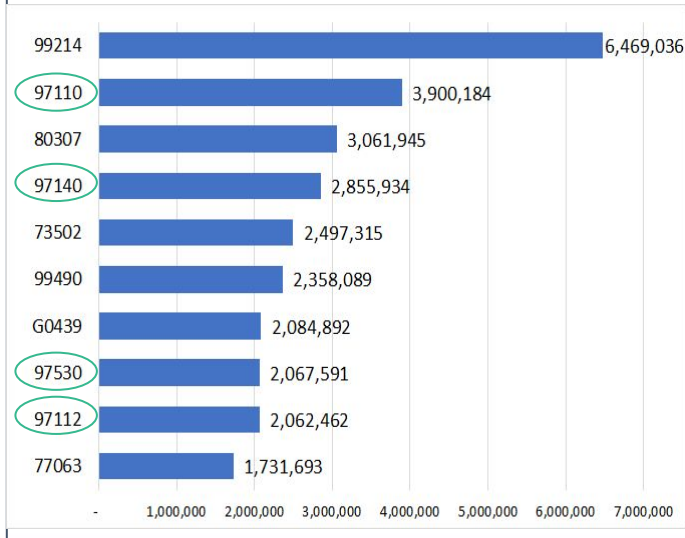
Provider Type
(All)

Explore Map



Number of Distinct Medicare Beneficiary Per Day Services

Top 10 Increases (chart)

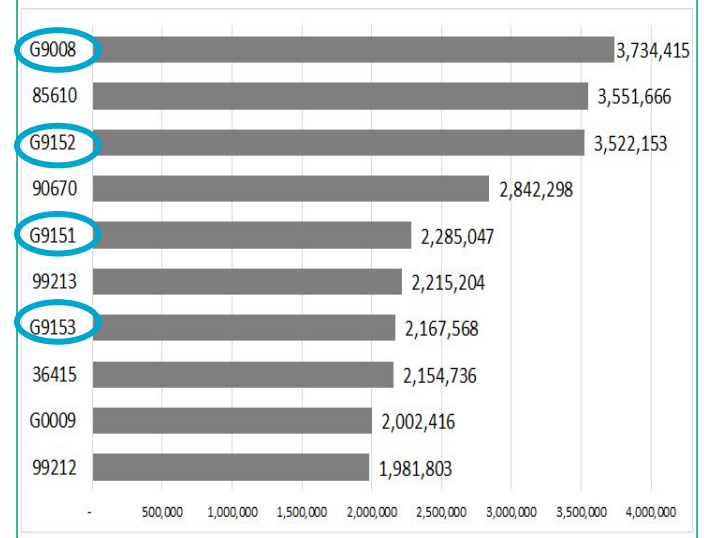


Increases: 97xxx
Four codes for physical therapy had the highest usage increases from 2015 to 2017

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.

Top 10 Decreases (chart)



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



DATA

Compressed data:

https://drive.google.com/file/d/10beHdKGtgjJ2l4QNr2KN4n_5xgQojlT7/view?usp=sharing
