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- Episode Payment Analytics and Reporting for ACOs

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# Why Are Episodes Relevant for ACOs



- Optimizing specialty care is the “next frontier” for population health
- ACOs need better tools for measuring specialist performance
- Episodes offer a more precise clinical focus and the ability to analyze pre-acute, acute, and post-acute phases of care
- CMS is developing policies to better align specialists with population health models

# How Can I Use Episodes of Care?



- Identify opportunities to improve your specialist's performance
- Identify high-performing specialists and hospitals for referrals
- Establish specialist incentive models
- Demonstrate the impact of your ACOs care management on episode spending

# CMMI Value-Based Specialty Strategy

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1. Enhance specialty care performance transparency
  - ST: Give ACOs data to support “shadow bundles”
  - LT: Develop enhanced condition-based episode models
2. Extend existing BPCI-A & OCM models (ST)
  - LT: Test a new mandatory acute care model
3. Create new mechanisms in advanced PCP models
  - ST: Expand the use of e-consults and advanced referral tools
4. Create/test sub-ACO specialty care benchmarks (LT)

# Episode Grouper Options

## BPCI-A

- 34 episodes
- Most triggered by hospital stay (DRG)
- Target price from national regression model

## Acumen

- 23 episodes
- Narrower than BPCI bundles
- Used by CMS for MIPS cost measures

## EGM

- Episode grouper for Medicare
- 850+ episodes
- Triggered by CPT and ICD codes
- Nest chronic, acute and procedure episodes.

## Commercial

- Include Optum, IBM-Watson, Cave
- Black box model
- Developed on commercial claims data

# Evolution of Medicare Bundled Payment Approach

<b>BPCI Original</b>		<b>BPCI Advanced</b>
48 DRG-based clinical episodes (30, 60, 90 day)	→	31 inpatient and 4 outpatient episodes (90-day)
Target prices based on trended historical spending	→	Target prices based on national regression model
No risk adjustment. Only DRG case-mix adjustment	→	Prices adjusted for historical spend, patient characteristics, hospital peer group and DRG mix
Participants select 1 – 48 episodes	→	Participants select 1 – 8 clinical service line groups (each multiple episodes)
No quality measures	→	Gain or losses adjusted for quality (up to 10% of NPRA)

CMS Considering Alignment With MIPS Cost Measures

# BPCI-A 2021 Volume and Spending: All U.S.

Rank	BPCI-Advanced Episodes	Number of Episodes	2021 Spending (billions)
34	<b>All BPCI Episodes</b>	<b>2,941,671</b>	<b>\$87.5</b>
1	Sepsis	385,776	\$13.0
2	Simple pneumonia and respiratory infections	386,582	\$10.5
3	Major joint replacement of the lower extremity (P)	372,309	\$8.9
4	Congestive heart failure	203,611	\$5.7
5	Stroke	132,766	\$4.5
6	Hip & femur procedures except major joint (P)	89,932	\$4.2
7	Spinal fusion (P)	81,338	\$4.1
8	Renal failure	107,581	\$3.0
9	Urinary tract infection	109,674	\$2.8
10	Gastrointestinal hemorrhage	102,544	\$2.5
11	Major bowel procedure (P)	68,244	\$2.4
12	Acute myocardial infarction	82,205	\$2.4
13	Percutaneous coronary intervention (P)	80,517	\$2.3
14	Cardiac arrhythmia	104,786	\$2.2
15	Endovascular cardiac valve replacement	36,968	\$1.9
16	Percutaneous coronary intervention - Outpatient (P)	93,955	\$1.8
17	Coronary artery bypass graft (P)	33,411	\$1.8

# When are ACOs Big Enough to Think about Bundles?

## Mean Number of 2021 BPCI Episodes for ACO beneficiaries by ACO Size (4 Quartiles)

	Quartile/# Benes	Q1 3,000-8,430	Q2 8,431-13,500	Q3 13,501-24,300	Q4 24,301-220,365
Top 12 BPCI Episodes by Volume	Total ACOs	Mean Episodes	Mean Episodes	Mean Episodes	Mean Episodes
Simple pneumonia and respiratory infections	474	103	150	238	669
Sepsis	474	96	125	212	608
Major joint replacement (P)	475	90	155	267	806
Congestive heart failure	473	51	75	131	405
Stroke	471	32	49	81	238
Urinary tract infection	465	31	40	65	194
PCI – Outpatient (P)	459	30	43	68	196
Cardiac arrhythmia	468	30	43	72	217
Renal failure	470	28	38	63	187
Gastrointestinal hemorrhage	470	27	39	67	200
Hip & femur procedures except major joint (P)	472	24	29	53	156
COPD, Bronchitis, Asthma	436	24	31	46	129

# What's the Right Unit of Analysis for Episodes?

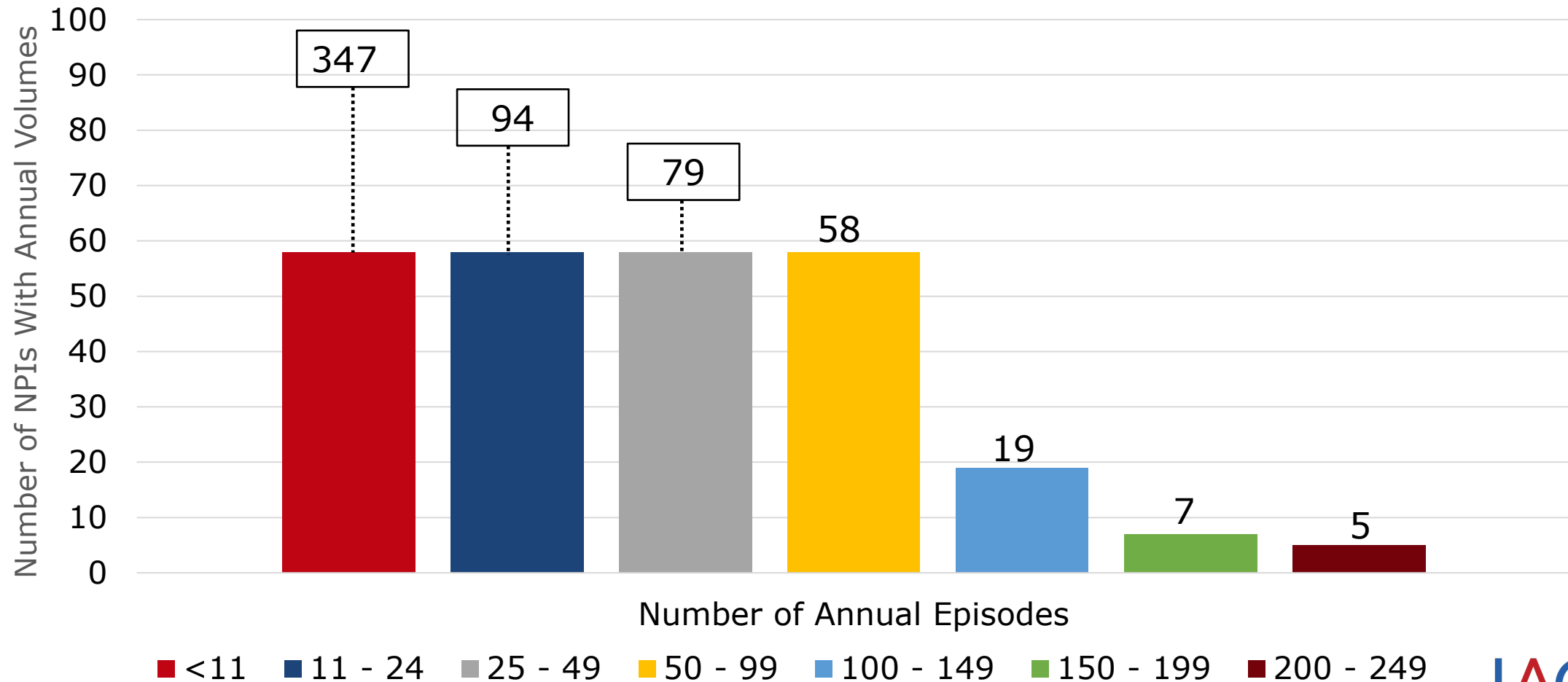


- ACO?
- Hospital?
- Physician group?
- Individual specialist?

Note: In the following slides please see the appendix for additional explanation.

# 2021 Episode Volume by Surgeon: Major Joint Replacement

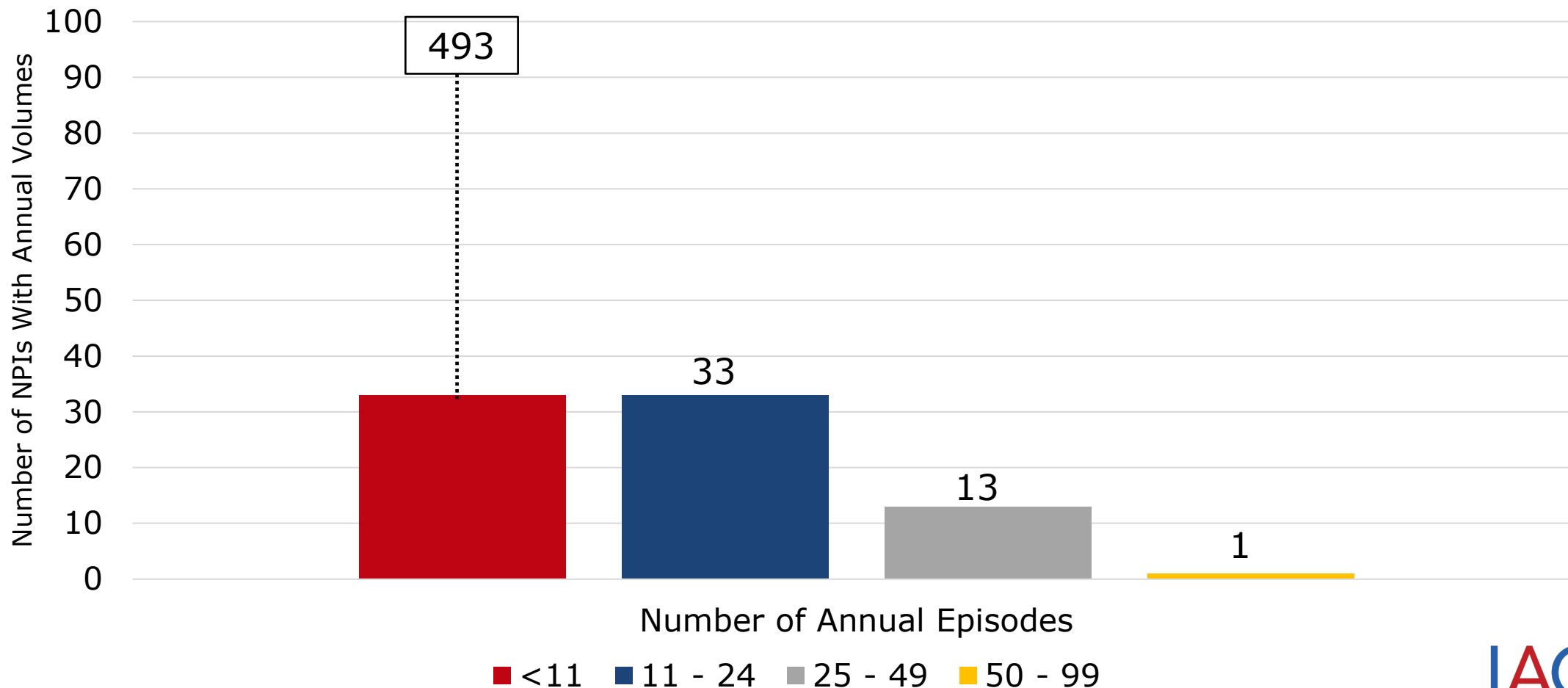
Distribution of Surgeons in North Carolina by Number of 2021 Medicare Episodes



Source: Institute for Accountable Care analysis of 2021 Medicare claims data using BPCI-Advanced episodes.

# 2021 Episode Volume by Surgeon: Major Bowel Procedure

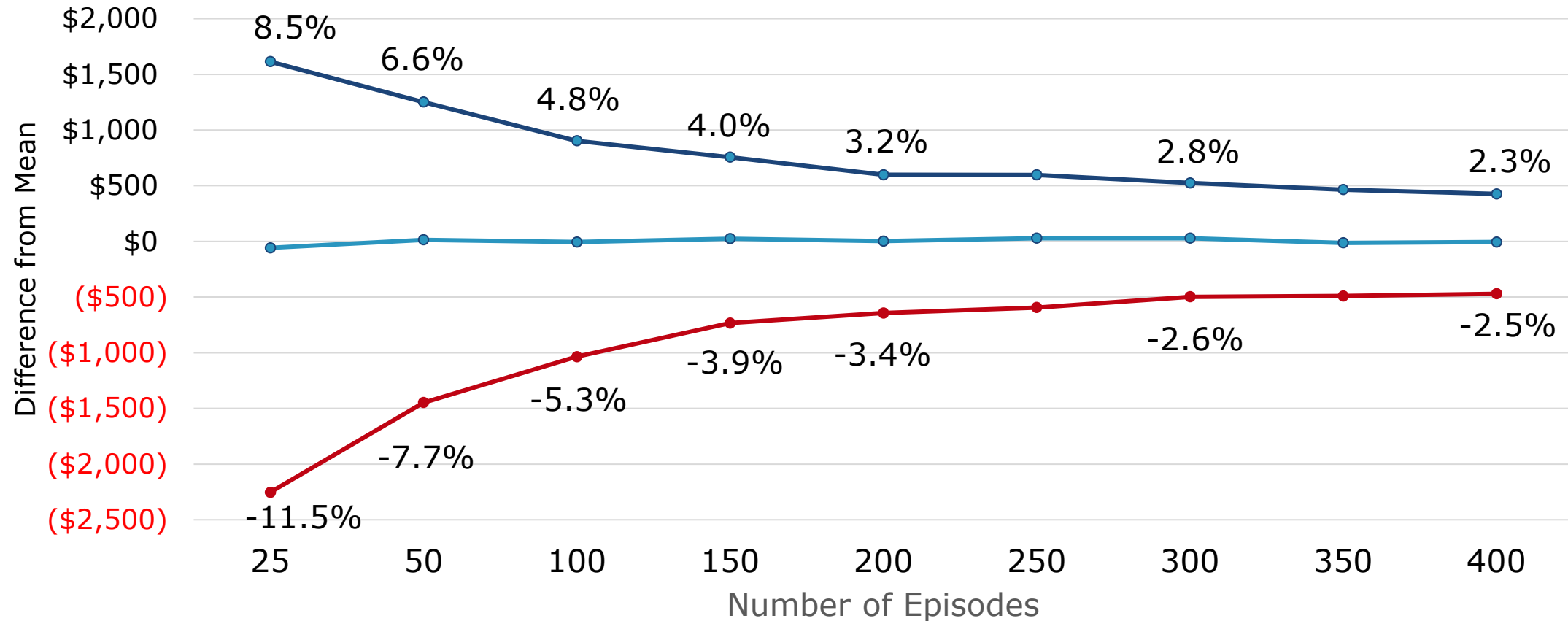
Distribution of Surgeons in North Carolina by Number of 2021 Medicare Episodes



Source: Institute for Accountable Care analysis of 2021 Medicare claims data using BPCI-Advanced episodes.

# Range of Episode Cost Outcomes by Volume, Surgery

90-Day Medicare Episode: **Major Joint Replacement (Mean = \$18,900)**

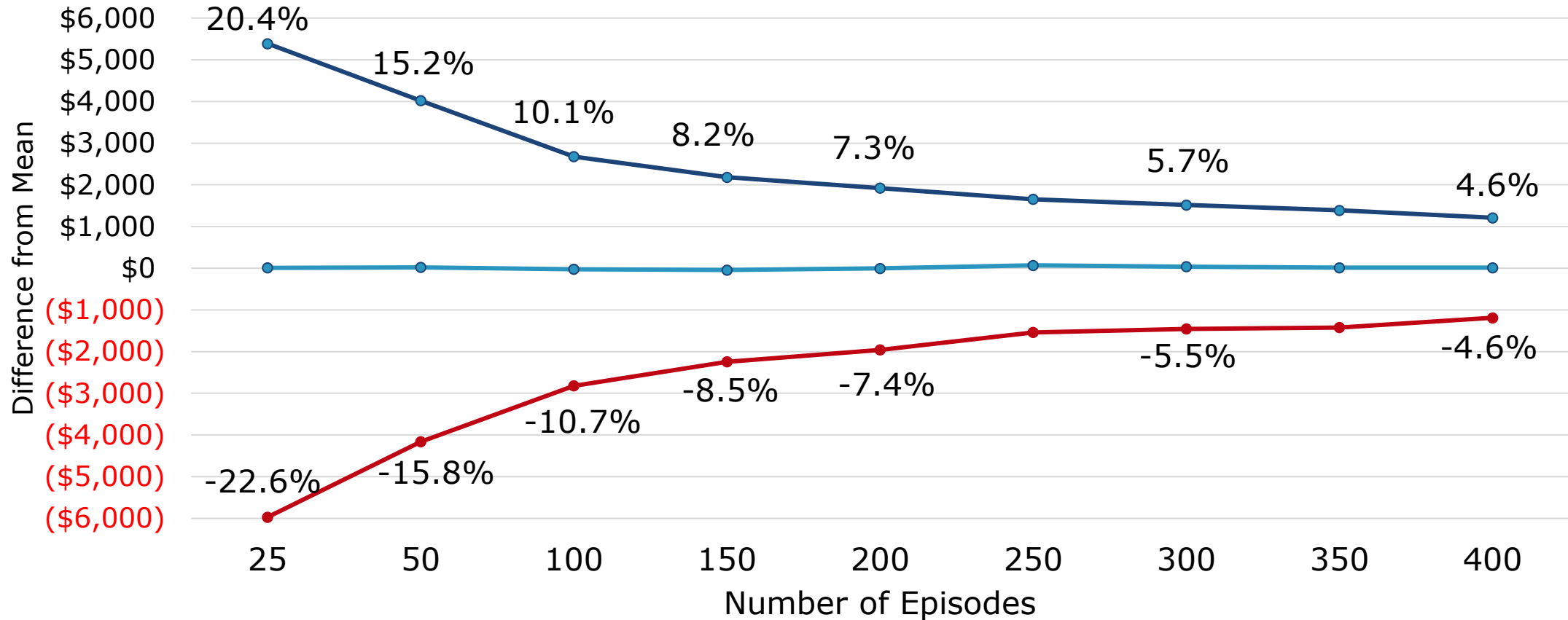


● 5th Percentile ● Mean ● 95th Percentile

Source: Institute for Accountable Care analysis of 2021 Medicare claims data using BPCI-Advanced episodes.

# Episode Cost Variation by Volume, Acute Medical

90-Day Medicare Episode: **Heart Failure (HF) Hospitalization (Mean = \$26,400)**



—●— 5th Percentile    —●— Mean    —●— 95th Percentile

Source: Institute for Accountable Care analysis of 2021 Medicare claims data using BPCI-Advanced episodes.

# Sample BPCI Spending Report

## 2021 Average 90-Day Episode Spending Per Case (Wage Standardized)

ACO or State	Episode	Total	Observed	Expected	O/E
Target ACO	Heart failure	330	\$26,904	\$28,403	0.95
State Average	Heart failure	9,847	\$28,968	\$28,994	1.0
Difference	Heart failure		(\$2,064)	(\$591)	
Target ACO	Sepsis	553	\$30,095	\$32,593	0.92
State Average	Sepsis	20,678	\$33,566	\$34,582	0.97
Difference	Sepsis		(\$3,470)	(\$1,989)	
Target ACO	Pneumonia	679	\$25,743	\$27,426	0.94
State Average	Pneumonia	20,605	\$27,861	\$28,139	0.99
Difference	Pneumonia		(\$2,117)	(\$713)	
Target ACO	Major joint (lower)	845	\$25,348	\$25,783	0.98
State Average	Major joint (lower)	17,078	\$25,408	\$25,742	0.99
Difference	Major joint (lower)		(\$60)	\$41	

# Sample BPCI Spending Report

## 2021 Average 90-Day Episode Spending Per Case by Service (Wage Standardized)

ACO or State	Episode	Cases	Anchor Stay	SNF	IRF	HHA	LTAC	IP Readmit	Part B	Outpatient
Target ACO	Heart failure	330	\$9,774	\$2,003	\$1,262	\$1,837	\$268	\$5,157	\$4,092	1,147
State Average	Heart failure	9,847	\$9,939	\$3,526	\$977	\$1,698	\$242	\$6,065	\$3,623	1,335
Difference	Heart failure		(\$164)	(\$1,523)	\$285	\$140	\$26	(\$908)	\$468	-187
Target ACO	Sepsis	553	\$13,604	\$2,749	\$1,117	\$1,781	\$467	\$4,172	\$3,808	\$990
State Average	Sepsis	20,678	\$14,273	\$5,325	\$1,082	\$1,350	\$827	\$4,409	\$3,362	\$1,114
Difference	Sepsis		(\$669)	(\$2,575)	\$35	\$431	(\$360)	(\$238)	\$446	(\$125)
Target ACO	Pneumonia	679	\$12,541	\$2,353	\$562	\$1,478	\$256	\$3,117	\$3,366	1,022
State Average	Pneumonia	20,605	\$12,488	\$4,217	\$788	\$1,309	\$547	\$3,606	\$2,815	902
Difference	Pneumonia		\$53	(\$1,864)	(\$226)	\$169	(\$291)	(\$489)	\$552	120
Target ACO	Major joint	845	\$15,276	\$2,053	\$815	\$2,594	\$0	\$1,030	\$2,566	\$810
State Average	Major joint	17,078	\$15,188	\$2,551	\$1,071	\$2,178	\$12	\$1,006	\$2,123	\$1,016
Difference	Major joint		\$87	(\$498)	(\$256)	\$417	(\$12)	\$24	\$443	(\$206)

Source: Institute for Accountable Care analysis of 2021 Medicare claims data using BPCI-Advanced episodes.

# 2021 Hospital Market Report: CHF 90-Day Episode

Organization	Total Cases	Observed Amount	Expected Amount	O/E Ratio
HRR Average	1,136	\$31,757	\$29,648	1.07
Target ACO	125	\$30,856	\$28,867	1.08
LAKEVIEW HOSPITAL	187	\$29,717	\$29,730	1.00
ROARING BROOK HOSPITAL	167	\$33,355	\$29,389	1.13
UNIVERSITY MEDICAL CENTER	122	\$27,810	\$29,978	0.93
RED RIVER HOSPITAL	104	\$32,628	\$29,128	1.12
WESTERN HILLS HOSPITAL	89	\$37,556	\$29,584	1.27
SUNRISE HOSPITAL	77	\$29,809	\$28,803	1.03
SPRINGVIEW HOSPITAL	71	\$35,114	\$29,255	1.20
FJORD RUN HOSPITAL	70	\$32,498	\$29,040	1.12
BLUE LAKE HOSPITAL	69	\$30,158	\$29,578	1.02
REGIONS BAY HOSPITAL	69	\$27,680	\$28,745	0.96

\* Data includes all hospitals with at least 50 episodes triggered in 2021. Costs reflect admission plus 90 days.

# 2021 Hospital Market Report: CHF 90-Day Episode Las Vegas HRR

Organization	Cases	Total	Index Stay	SNF	IRF	HHA	LTAC	IP Readmit	Part B	Output.
HRR Average	1,136	\$31,757	\$9,757	\$2,001	\$3,416	\$1,725	\$580	\$7,490	\$4,483	\$1,235
Target ACO	125	\$30,856	\$9,732	\$1,226	\$2,864	\$1,853	\$413	\$7,142	\$4,839	\$1,760
LAKEVIEW HOSPITAL	187	\$29,717	\$9,789	\$2,026	\$3,565	\$1,531	\$1,026	\$6,082	\$3,846	\$891
ROARING BROOK HOSPITAL	167	\$33,355	\$9,800	\$2,085	\$4,437	\$1,570	\$515	\$7,178	\$4,500	\$1,693
UNIVERSITY MEDICAL CENTER	122	\$27,810	\$10,546	\$2,074	\$3,424	\$1,643	\$0	\$3,575	\$4,022	\$1,686
RED RIVER HOSPITAL	104	\$32,628	\$9,773	\$1,768	\$3,137	\$1,663	\$0	\$9,692	\$4,365	\$1,496
WESTERN HILLS HOSPITAL	89	\$37,556	\$10,226	\$2,900	\$6,937	\$1,632	\$901	\$6,710	\$5,790	\$1,329
SUNRISE HOSPITAL	77	\$29,809	\$9,175	\$1,888	\$3,157	\$1,688	\$205	\$7,024	\$4,258	\$1,212
SPRINGVIEW HOSPITAL	71	\$35,114	\$9,158	\$2,149	\$3,071	\$1,728	\$0	\$11,632	\$5,333	\$1,516
FJORD RUN HOSPITAL	70	\$32,498	\$9,230	\$1,832	\$3,613	\$1,686	\$993	\$8,334	\$4,261	\$1,210
BLUE LAKE HOSPITAL	69	\$30,158	\$10,362	\$2,320	\$1,393	\$2,055	\$819	\$6,995	\$4,953	\$412
REGIONS BAY HOSPITAL	69	\$27,680	\$9,347	\$1,006	\$985	\$2,703	\$0	\$7,742	\$4,190	\$836

# Surgeon Market Report: Major Joint Replacement

Surgeon	2021 Cases	Observed	Expected	O/E Ratio	Readmission	PAC Facility
		Cost	Cost		Rate	Rate
Thomas Jefferson	176	\$18,423	\$20,501	0.90	6.4%	4.0%
Theodore Roosevelt	169	\$24,770	\$21,088	1.17	10.8%	26.9%
Bill Clinton	156	\$16,268	\$19,527	0.83	0.6%	0.6%
Ronald Reagan	129	\$21,752	\$20,890	1.04	4.7%	13.3%
George Washington	90	\$22,647	\$23,438	0.97	9.2%	17.2%
Abraham Lincoln	83	\$23,035	\$20,871	1.10	5.1%	17.7%
Franklin Roosevelt	81	\$25,122	\$25,811	0.97	10.4%	28.6%
Barak Obama	66	\$20,637	\$21,515	0.96	9.2%	12.3%
George W. Bush	62	\$28,326	\$28,402	1.00	10.0%	28.3%
Lyndon Johnson	54	\$17,458	\$20,749	0.84	5.8%	5.8%
John F. Kennedy	53	\$22,720	\$20,015	1.14	1.9%	30.2%
Jimmy Carter	53	\$21,290	\$21,493	0.99	3.8%	5.7%
Richard Nixon	52	\$28,212	\$24,810	1.14	8.0%	26.0%

# Surgeon Market Report: Major Cardiac Surgery

Surgeon	Episode	Total	2021 Cases	Observed	Expected	Readmission		PAC Facility
		Surgeries	by Episode	Cost	Cost	O/E Ratio	Rate	Rate
Mark Knofler	Cardiac valve replacement	121	35	\$65,449	\$75,786	0.86	17.6%	11.8%
Mark Knofler	Coronary artery bypass graft	121	17	\$49,391	\$53,562	0.92	11.8%	23.5%
Mark Knofler	Endovascular cardiac valve repl.	121	69	\$58,510	\$49,761	1.18	10.8%	9.2%
Billie Jo Armstrong	Cardiac valve replacement	96	30	\$58,837	\$64,453	0.91	16.7%	13.3%
Billie Jo Armstrong	Coronary artery bypass graft	96	25	\$48,079	\$50,067	0.96	8.0%	12.0%
Billie Jo Armstrong	Endovascular cardiac valve replacement	96	41	\$52,991	\$49,541	1.07	15.4%	2.6%
Mick Jagger	Cardiac valve replacement	89	36	\$67,376	\$66,770	1.01	8.8%	23.5%
Mick Jagger	Endovascular cardiac valve replacement	89	53	\$54,039	\$49,935	1.08	15.4%	15.4%
Sarah McLachlan	Coronary artery bypass graft	87	87	\$46,214	\$52,652	0.88	9.4%	2.4%
Dan Auerbach	Cardiac valve replacement	80	31	\$65,064	\$72,316	0.90	25.8%	19.4%
Dan Auerbach	Coronary artery bypass graft	80	23	\$43,628	\$47,432	0.92	13.0%	13.0%
Dan Auerbach	Endovascular cardiac valve replacement	80	26	\$54,396	\$56,997	0.95	20.8%	8.3%
Bonnie Raitt	Cardiac valve replacement	71	47	\$72,150	\$75,416	0.96	19.1%	31.9%
Bonnie Raitt	Coronary artery bypass graft	71	24	\$50,060	\$45,359	1.10	12.5%	16.7%
Ann Wilson	Cardiac valve replacement	67	19	\$59,277	\$70,976	0.84	10.5%	5.3%
Ann Wilson	Endovascular cardiac valve replacement	67	48	\$54,336	\$58,275	0.93	12.8%	6.4%
Kris Delmhorst	Cardiac valve replacement	66	19	\$53,482	\$64,613	0.83	5.3%	10.5%
Kris Delmhorst	Endovascular cardiac valve replacement	66	47	\$57,097	\$57,591	0.99	17.0%	17.0%

# ACO Strategies to Improve Specialist Alignment

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- Educating specialists on ACO goals
- Using episodes to measure specialist resource use
- Surveying PCPs on specialist performance (service level)
- Structuring opportunities for PCP-Specialist collaboration
  - Build PCP expertise in complex patient management
  - Referral “hoops” to force conversations and reduce unnecessary referrals
- Directing referrals to preferred specialists (including specialist tiering models)

# Contact



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For more information:

<https://www.institute4ac.org/bpci-advanced-data-analytics-and-program-support/>

# Questions and Discussion



# Where Do I Get My ACO's Episode Report

## NAACOS/IAC Episode Spending Report

To give you a head start, NAACOS and the Institute for Accountable Care are offering episode spending reports to all member ACOs. The reports are based on 2021 spending for each ACO's attributed beneficiaries grouped into 34 [BPCI Advanced](#) 90-day episodes. The reports provide aggregate results for each bundle by type of service along with a state-level comparison group. The episode reports will show your ACOs:

1. The volume and average spending for each 90-Day BPCI clinical episode for your ACO's attributed beneficiaries in 2021.
2. The relative 'efficiency' of the episodic care your beneficiaries received as indicated by the observed-to-expected ratio. This measure uses risk-standardized episode spending.
3. Per-episode spending for major categories of service such as skilled nursing and hospital readmissions for each episode.
4. Comparisons to your state's average episode spending.

[Access your ACO's free report.](#)

[Get instructions](#) on using your ACO's episode report.

<https://www.naacos.com/episode-spending-report>



# Appendix

# Interpretation of Empirical Slides

- **Slide 10: 2021 Episode Volume by Surgeon: Major Joint Replacement:** In this slide we see that high proportion of surgeons (57%) have fewer than 11 traditional Medicare cases of major joint replacement surgery in a single year, suggesting they would not be good candidates for taking on risk in this area. In fact, 95% of providers have fewer than 100 case illustrating how hard it is to get adequate volume in a single service line.
- **Slide 11: 2021 Episode Volume by Surgeon: Major Bowel Procedure:** In major bowel procedures (predominantly colectomy), 91% of providers have fewer than 11 cases. These are complex and costly surgeries, but very few groups have enough volume to take on risk for this single service line. Instead, providers may have to pool risk across bundles within a given clinical area (e.g., general surgery) or across clinical areas.
- **Slide 12: Range of Episode Cost Outcomes by Volume, Surgery:** Low volume providers or groups are subject to much more random variation in cost than high volume providers. This slide shows a confidence interval (5<sup>th</sup> – 95<sup>th</sup> percentile) around the mean episode value that varies by volume. In a risk-based bundled payment program the low volume provider (25 cases), for example, could lose up to 11.5% per case or 'win' 8.5% based on chance alone. At the other end of the continuum, providers with 400 cases stand to 'win' 2.3% or lose 2.5% per case by chance alone.
- **Episode Cost Variation by Volume, Acute Medical:** In the case of 90-day heart failure hospitalization episodes, the mean price per case is higher, but so is the risk exposure for low volume providers. In this slide we see that providers with only 25 cases of acute heart failure could lose as much as 22.6% or 'win' 22.4% based on chance alone.
- **Sample of free BPCI Reports for NAACOS Members:** In the NAACOS/IAC free reports available in early March 2023, ACOs receive an analysis of the 34 BPCI-A episodes that would be triggered by their attributed beneficiaries including: volume, cost and observed-to-expected ratio (O/E) compared to their dominant state\*. The example shows heart failure, sepsis, pneumonia and major lower joint. The example ACO has O/E ratios lower than the state average, suggesting they are more efficient.
- **NAACOS/IAC Free BPCI (continued):** The second example shows a breakout of of the ACOs episode costs and its dominant state by setting. This view identifies specific areas where the ACO is efficient, which in this example includes SNF care (\$1,523 lower) and readmissions for heart failure (\$908 lower) than the state average. It also indicates where the ACO is less efficient, such as home health for sepsis (\$431 over) and major lower joint surgery (\$417 over).

\* Note: if your ACO has hubs in multiple state, please reach out to IAC about modifying the reference state.