HEALTH DATA ANALYTICS INSTITUTE

Managing Post-Acute Care

Harnessing analytics to improve patient outcomes

April 2023

VBCExhibitHall.com

Educational Webinar Series

OUR WORKING DEFINITION OF

Post-Acute Care

All health care services provided to patients for 90 days following discharge from an acute care hospital

The post-acute window – a snapshot

33 million
Medicare fee-for-service beneficiaries in 2021

7.6 million
Discharges from acute care hospitals

28%
Readmissions within 90 days

29%
Discharged to skilled nursing/rehab

$211 billion
In total Part A + B costs generated

13%
Mortality rate within this period

Staggering multiples in the post-acute period - 2021

	Post-acute 90-day period	**Typical** 90-day period	**Post-acute multiple**
Mortality rate	**13.1%**	**1.4%**	**9x**
(Re-)hospitalization rate	**27.6%**	**4.7%**	**6x**
Total cost	**$27,804**	**$2,592**	**11x**

Digital twinning enables rigorous performance comparisons

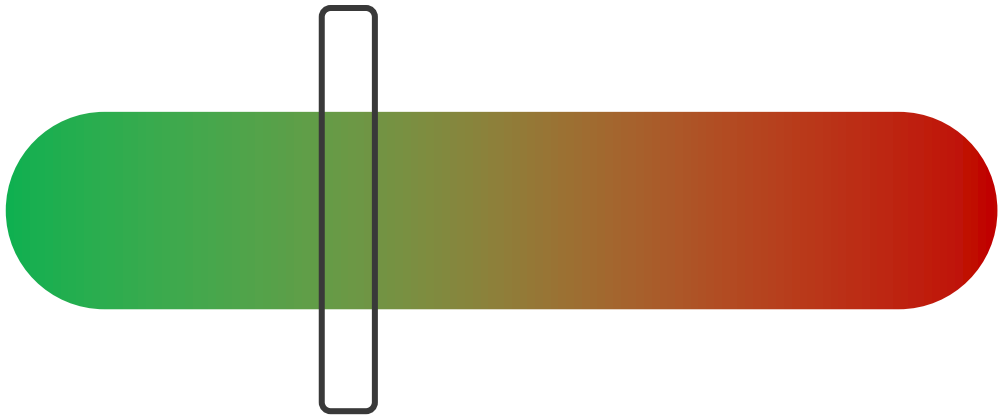
Digital twinning allows us to measure differences in cost and outcomes for a single ACO's (or other entity's) patients compared to others using high-resolution baseline matching

Patient Characteristics Matching

- Age, Sex & Race
- LTC/SNF vs. community status
- Medicare Type
- Covid status (2020-2022)
- ACO "attributability"
- Rural vs. urban
- Principal procedure (CCS)
- Principal diagnosis (CCSR)
- DRG
- Major diagnostic category (MDC)
- Admission type (planned/unplanned)

Risk match

Beneficiaries are twinned with others who have very similar baseline risk for each outcome we predict



ACO outcomes for post-acute care are not notably different

Post-discharge visits, mortality, and readmissions, 2021

	Actual	
	Non-ACO	ACO
Mortality	13.3%	12.8%
Unplanned readmission	27.8%	27.2%
Average Cost	$28,013	$27,369

Based on analysis of 5.1 million hospital admissions for Medicare beneficiaries not attributed to ACOs and 2.5 million hospital admissions for Medicare beneficiaries attributed to ACOs. Data accessed through the Center for Medicare and Medicaid Services' Virtual Research Data Center.

Top ACOs setting a higher standard for post-acute outcomes

Performance relative to average among 476 ACOs, 2021

	90 DAYS POST-DISCHARGE		
	Mortality	**Unplanned Readmissions**	**Cost**
Top Decile	-11%	-9%	-11%
Top Quartile	-5%	-4%	-7%
Median	+2%	0%	-2%
Bottom Quartile	+7%	+4%	+4%
Bottom Decile	+14%	+7%	+11%

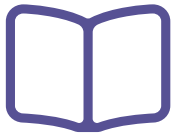
Based on analysis of ~33 million Medicare fee-for-service beneficiaries in 2021. Data accessed through the Center for Medicare and Medicaid Services' Virtual Research Data Center.

PREDICTIVE ANALYTICS

Identify and manage high-risk patients

NETWORK OPTIMIZATION

Select high-performing post-acute partners

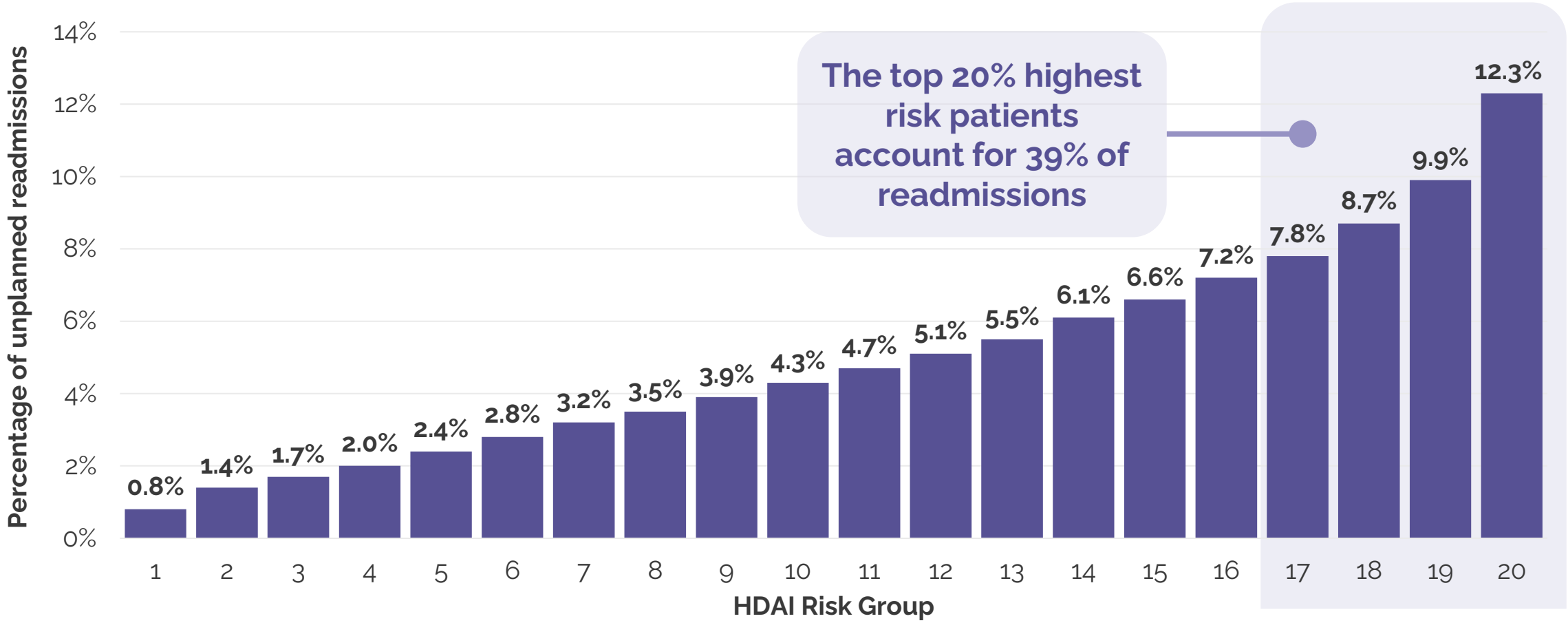


CASE STUDY

Improving post-acute outcomes at a top ACO

Highest-risk patients drive an outsized share of readmissions

Unplanned readmission rate by risk group (2021)



* From lowest to highest in 5% increments. Based on analysis of ~33 million Medicare fee-for-service beneficiaries in 2021. Data accessed through the Center for Medicare and Medicaid Services' Virtual Research Data Center

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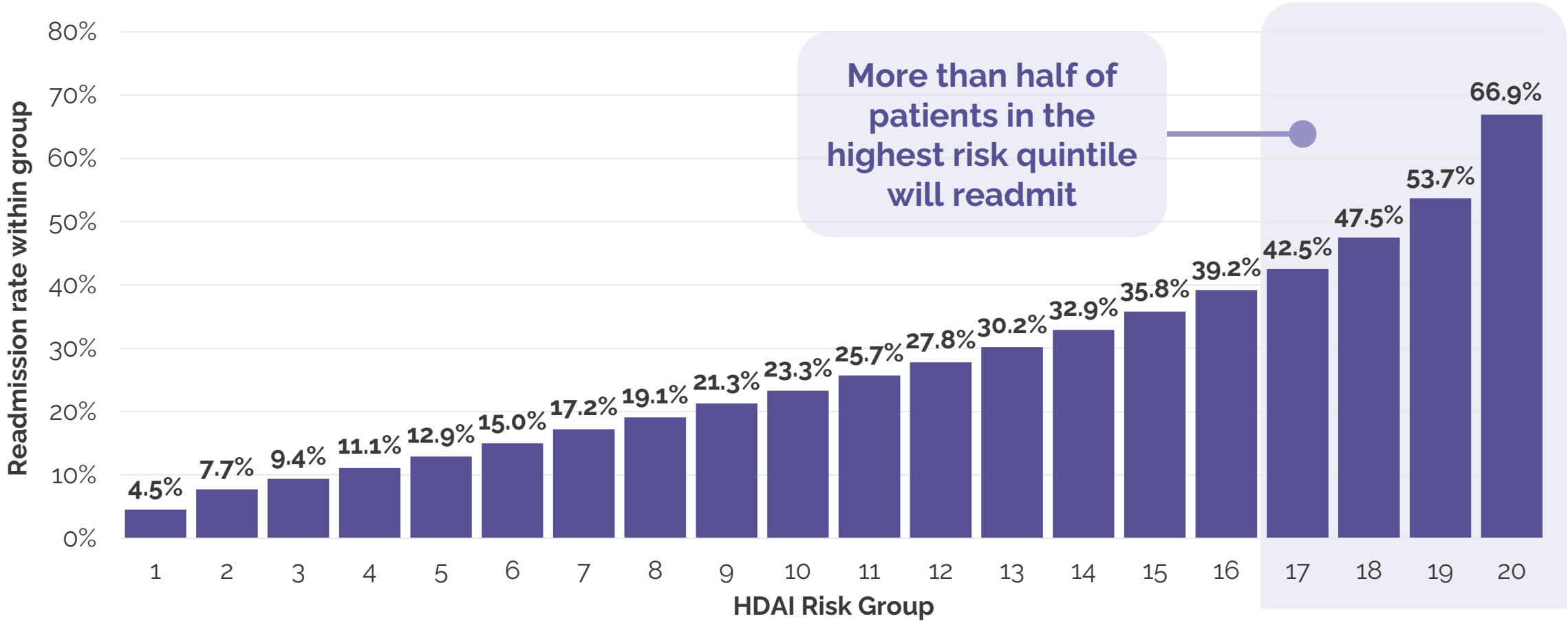

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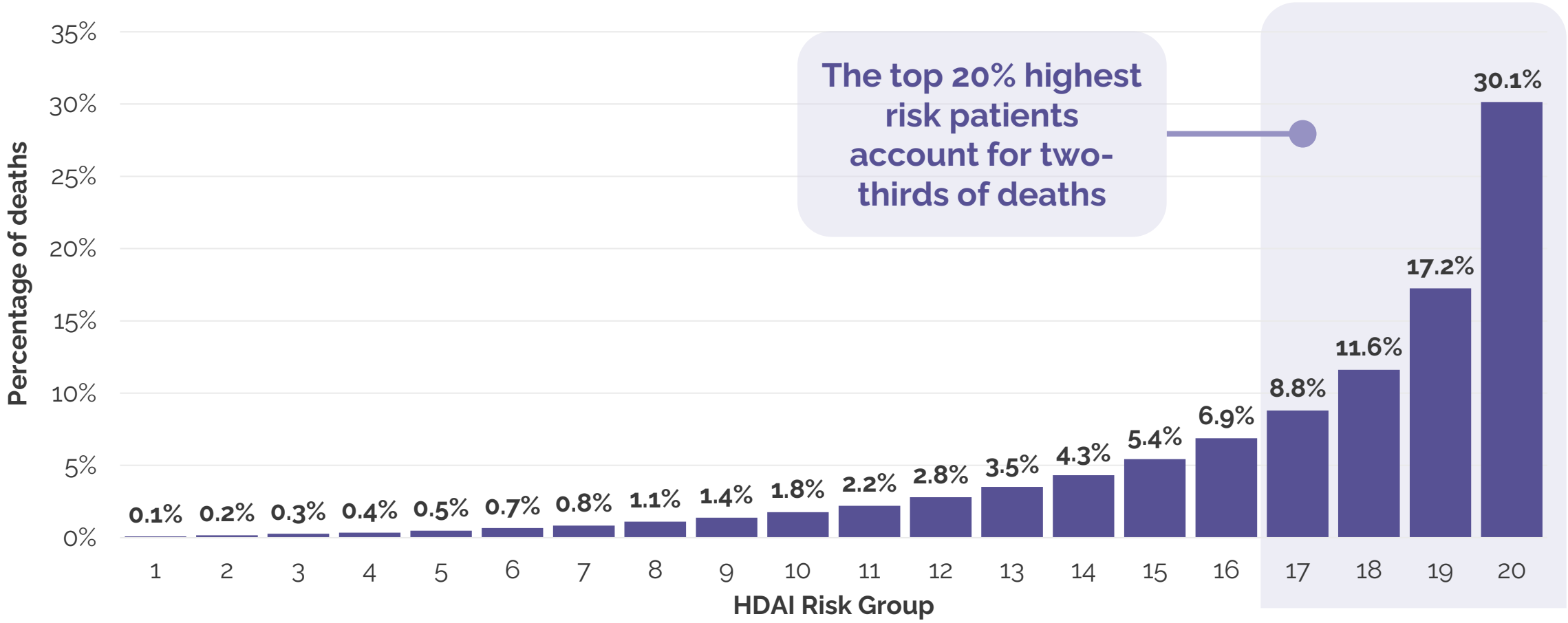
Dramatic skew in mortality risk at discharge

Mortality rate by risk group (2021)



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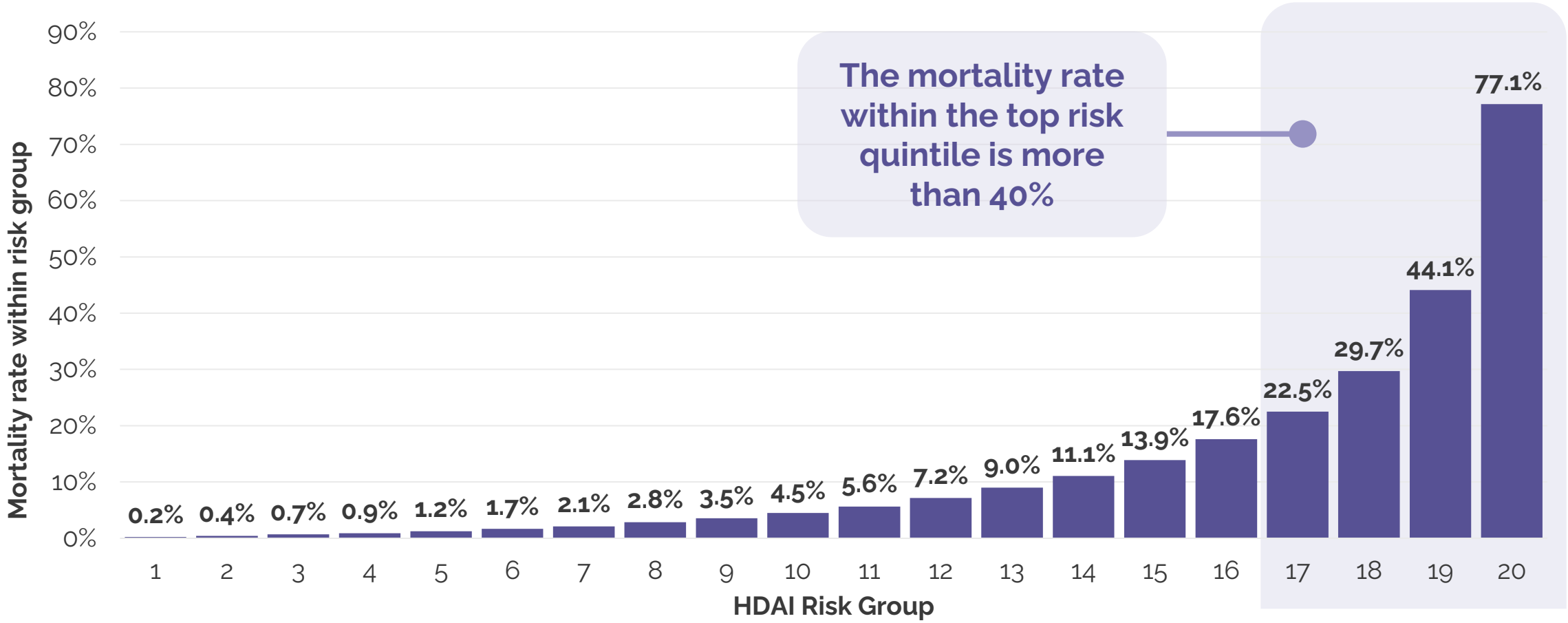

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Identifying enriched populations enables more effective targeting

	Baseline rate	Top quintile rate	Signal enrichment factor
Mortality rate	12.8%	43.3%	3.4x
Readmission rate	27.2%	52.7%	1.9x

Are ACOs seeing patients soon enough after discharge?

Number of days from discharge to first evaluation and management visit (2021)

	Among patients with no adverse events within 90 days post-discharge		Among patients who died or readmitted within 90 days post-discharge	
	Non ACO	ACO	Non ACO	ACO
All patients	17.6	15.8	10.4	9.5
Highest risk patients	15.4	13.4	9.9	9.0

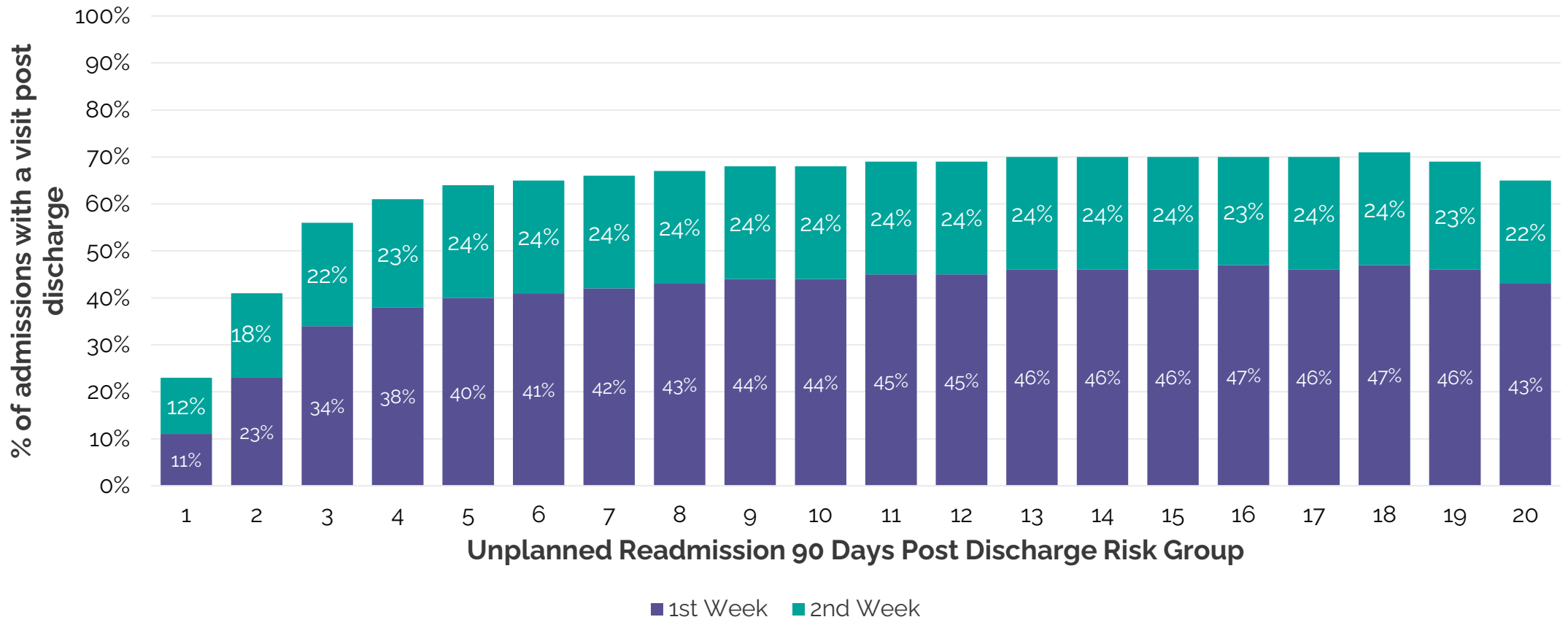
On average, ACOs see patients 10% faster than non-ACO providers

39% of patients who die or readmit have not had an E&M visit before the event

Based on analysis of 7.6 million acute care hospital discharges for Medicare fee-for-service patients in 2021. Only includes patients discharged to home (5.4 million). Includes virtual care E&M visits. Data accessed through the Center for Medicare and Medicaid Services' Virtual Research Data Center. 63% of the highest risk patients were readmitted or died during the 90 days post discharge.

Higher-risk ACO patients are not necessarily seen sooner

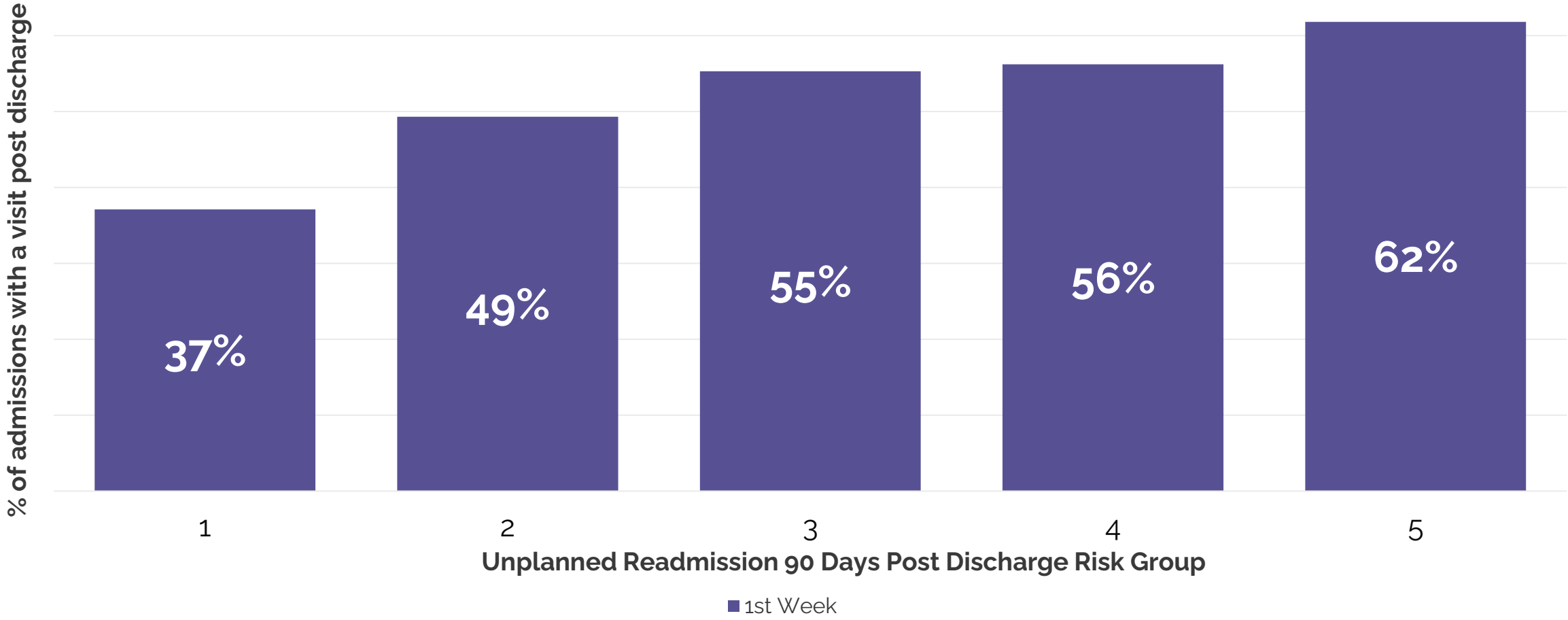
E&M visits within 90 days of discharge for patients discharged home with no readmissions or death



Based on analysis of 7.6 million acute care hospital discharges for Medicare fee-for-service patients in 2021. Plot only includes ACO patients discharged to home (1.2 million). Data accessed through the Center for Medicare and Medicaid Services' Virtual Research Data Center.

California ACO successfully prioritizes higher risk patients

E&M visit within 90 days of discharge for patients with no death or readmission for a California ACO



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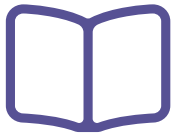
Select high-performing post-acute partners



CASE STUDY

Improving post-acute outcomes at a top ACO

Individual SNF performance matters more than star ratings

Key Findings:

- Individual SNF performance varies widely within and across star ratings
- A top-quartile 4-star SNF has better mortality performance than the average 5-star SNF
- Very modest mortality differences between 3-and 4-star SNFs
- The chance of a patient dying in a SNF is about 45% higher for the bottom quartile 5-star SNF compared to the top quartile

Data shown for 5,970 SNFs with more than 50 Medicare patients admitted to SNF after an in-patient hospitalization in 2021, and the A/E values are based on those patients and HDAI's digital twinning process..

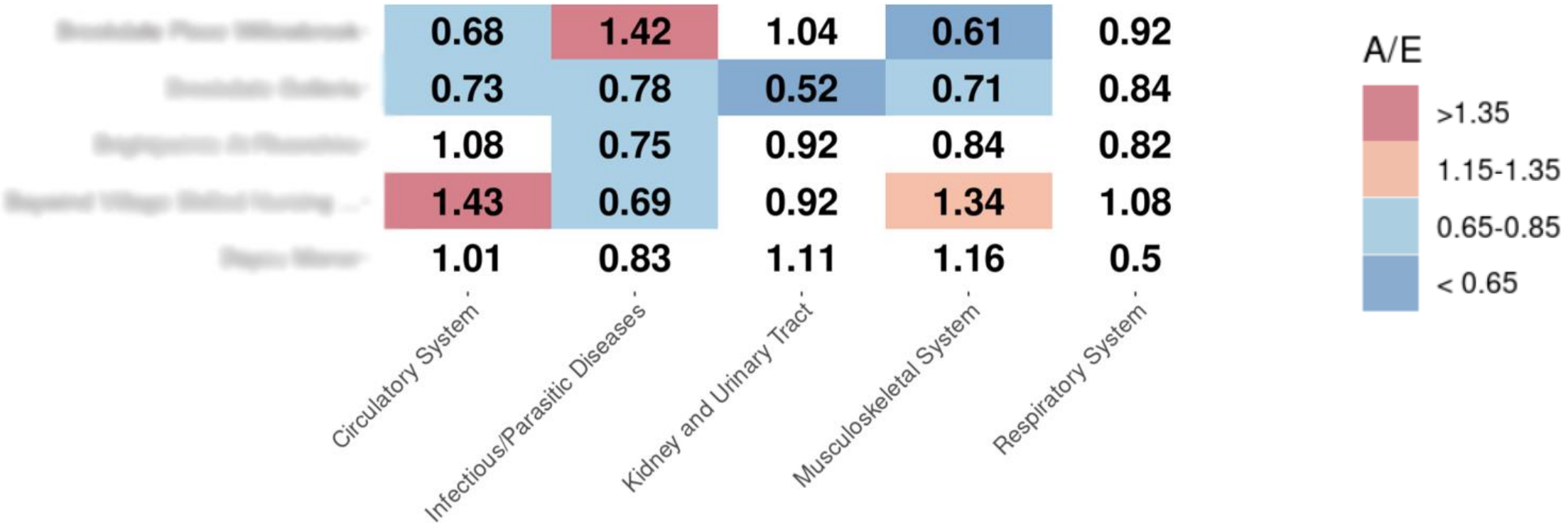
Better a strong 4-star SNF than a weak 5-star facility

	Actual Mortality		Mortality vs. expected	
	4-star SNFs	5-star SNFs	4-star SNFs	5-star SNFs
Best decile	12%	10%	-27%	-33%
Best quartile	15%	13%	-14%	-20%
Median	18%	16%	+4%	-3%
Worst Quartile	21%	19%	+23%	+15%
Worst Decile	25%	23%	+46%	+34%

Data shown for 5,970 SNFs with more than 50 Medicare patients admitted to SNF after an in-patient hospitalization in 2021. The A/E values are based on those patients and HDAI's digital twinning process. Mortality rates are measured 90 days post SNF admission.

Service line performance varies dramatically within SNFs

Actual : expected ratios for 30-day unplanned hospital readmission rates



Note that values on **background colors are statistically significant** at an alpha of 0.2, and values shown on white background are not statistically significant. The A/E values shown are based on all Medicare patients admitted to SNF following an in-patient hospitalization in 2019-2021.

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Enhanced nursing support to reduce avoidable readmissions

An ACO partner reduced 30-day unplanned readmissions by nearly 20% through a transitional care program, compared to matched twins in their ACO who are not included in the program

Nurse	Expected rate from twins	Readmission rate	Excess or (avoided) readmissions
All Primary RN	20.7%	16.9%	-19%

Leveraging predictive analytics for further improvement

Predictive analytics can help this ACO deliver better results with the same staffing

CURRENT PROGRAM

57

Avoided readmissions per year

20% expected readmission rate patients in program

SUPERIOR TARGETING

99

Avoidable with better risk targeting

35% expected readmission rate patients in program

PLUS HIGHER CONVERSION

173

Avoidable with better targeting and conversion

Assuming average performance nears top RN

Identifying a clear opportunity in low-volume SNFs

We separated the SNFs that saw 11 patients or more from our partner ACO from those that saw fewer—with striking findings

	# SNFs	Admissions	Expected mortality	Actual mortality	#Deaths	Excess mortality
All SNFs	101	513	11.3%	9.2%	47	**-19%**
High-volume SNFs (11 or more admissions)	12	307	11.3%	6.5%	20	**-43%**
Low-volume SNFs (under 11 admissions)	89	206	11.2%	13.1%	27	**+17%**

> **We don't have the data** to tell SNFs what they need to do better or to help patients figure out where to go.
>
> Yes, it's ultimately up to the patient—but if I can tell them that they are five times less likely to die in this SNF than that one, **I think they'll make the right choice.**

— Chief Quality Officer

Health system with large affiliated ACO

Questions?
Comments?

Stop by our VBCExhibitHall.com Virtual Booth

HEALTH DATA ANALYTICS INSTITUTE

Thank you

Contact us for a review of your 2022 performance.

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