



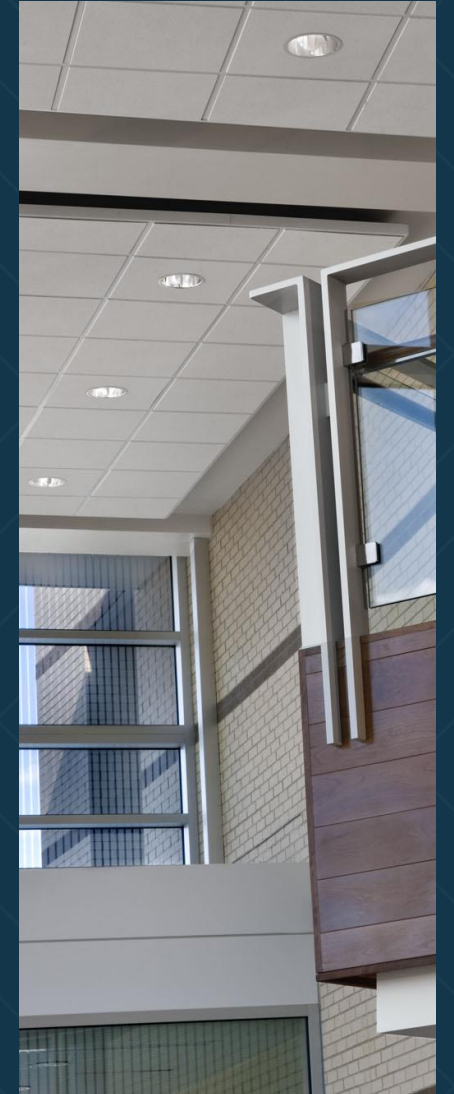
**STROUDWATER**

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# **2022 Rural Hospital Replacement Facility Study**

# SCOPE AND PURPOSE

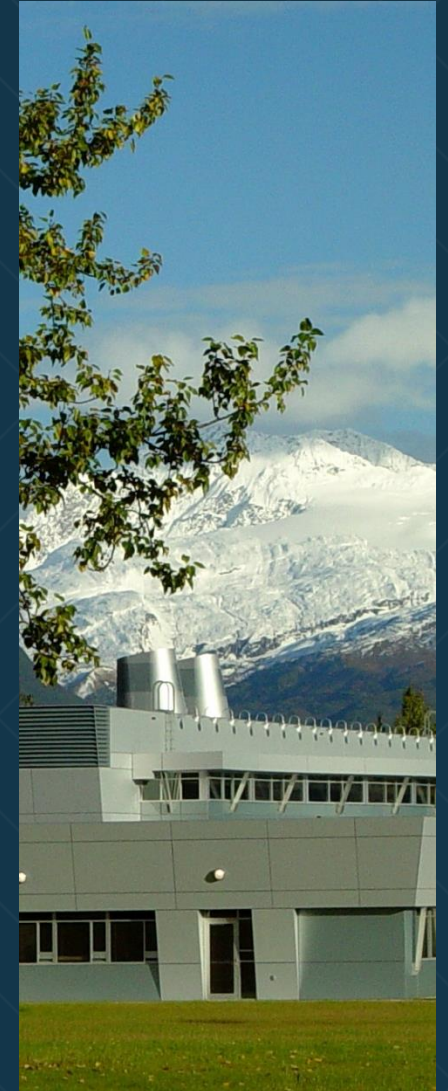
- Determine the impact from capital investment using the experiences of Critical Access Hospitals (CAH) that have been replaced
  - Pre- versus post-experience used to assess impact
- Eligibility criteria:
  - In new facility and operating for at least 12 months by January 1, 2020
  - Had CAH designation prior to replacement
  - Replaced patient care areas
  - Two-track approach used to identify eligible CAHs:
    1. Cost report analysis to determine all CAHs with a significant increase in capital costs
      - Verified replacement through hospital website or other news publications
    2. Candidates identified by the State Office of Rural Health and State Hospital Association representatives



# SCOPE AND PURPOSE

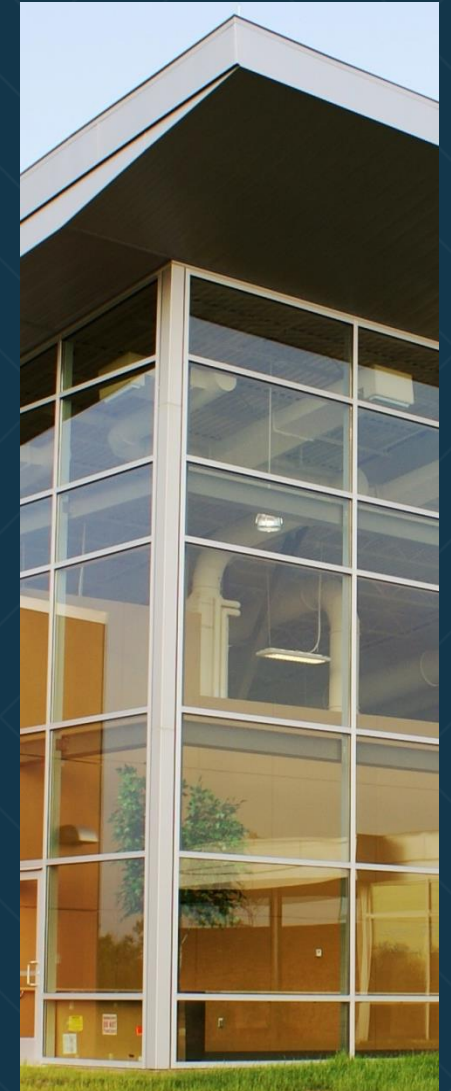
- New for 2022 Study (relative to 2017 study)
  - 71 new CAHs included (41% increase)
    - *100% sample size (243 out of 243)*
- Increased number of CAHs improves post-replacement experience data

Years post-experience	Count of facilities in study by year			
	2011	2016	2022	%Δ 11-22
Study Total	114	172	243	113%
Yr+1	114	172	227	99%
Yr+2	93	167	219	135%
Yr+3	69	159	211	205%



# STUDY PROCESS

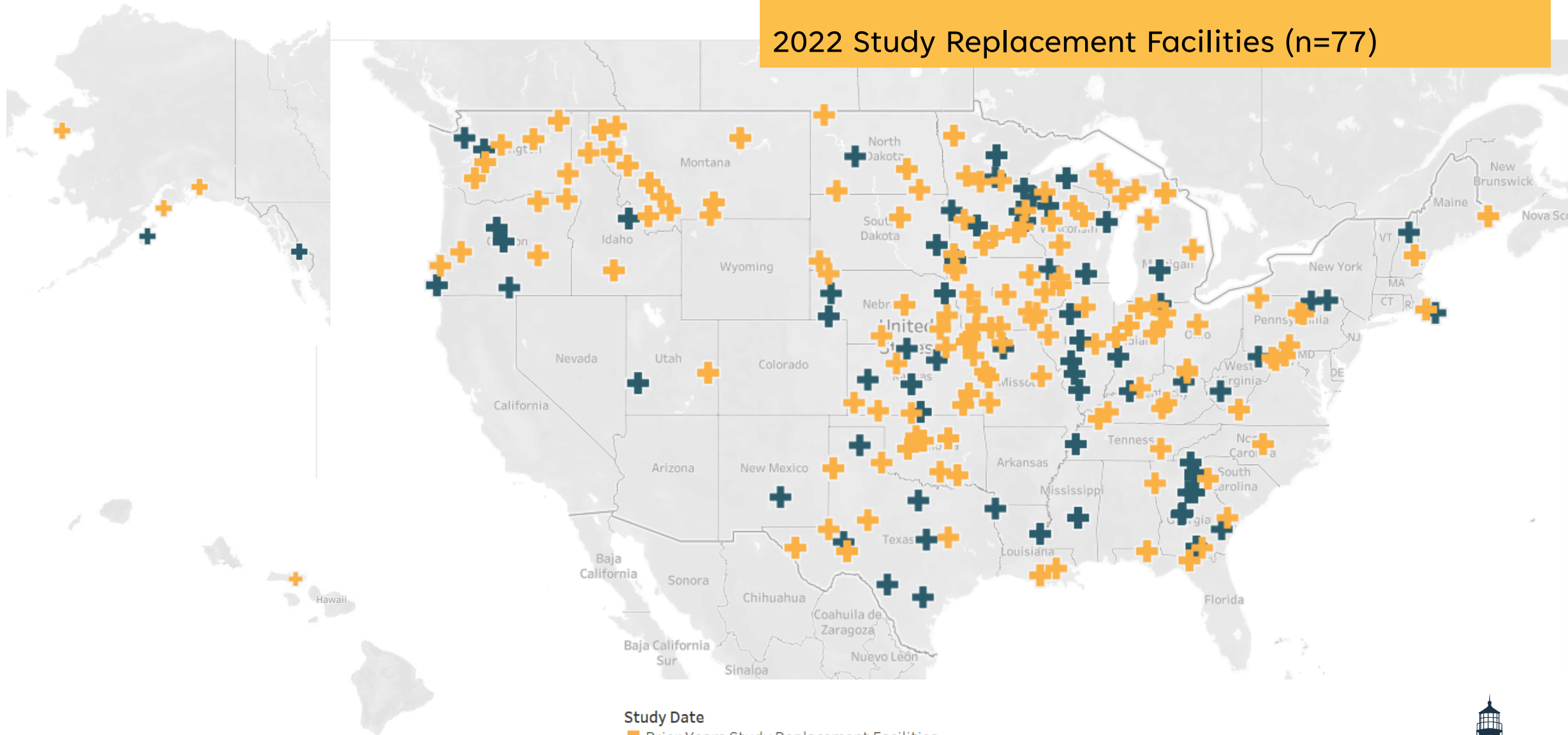
- Measures
  - Volumes: Discharges, patient days, total volume (adjusted patient days)
  - Efficiency: Gross FTEs, and FTEs and operating expense per adjusted patient day
  - Financial performance: Total margin, EBIDA, Days cash and investments on hand
- Sources
  - Medicare cost reports, excluding 2020 and 2021 due to the pandemic effects
  - 3 years pre-replacement and 1-9 years post-replacement
  - Most recent year (2021) patient satisfaction and core measure data
- Limitations
  - Study did not control for differences in:
    - Management team experience
    - Third party payments
    - Industry trends
    - Local market demographics
  - Single year of data for assessing changes in quality



# REPLACEMENT HOSPITALS

Prior Years Study Replacement Facilities (n=166)

2022 Study Replacement Facilities (n=77)



## Study Date

- Prior Years Study Replacement Facilities
- 2022 Study Replacement Facilities



# PRIOR YEARS TAKEAWAYS

- CAHs reported median growth of services
  - For all years following replacement, hospitals reported average annual growth in total volume of 3.9%
- Most hospitals increased gross FTEs to accommodate higher patient volume and/or expanded services
  - Median increase in year 1: 2.5%
- Hospitals offset FTE increases with gains in efficiency
  - 70% of hospitals exhibited lower FTEs per adjusted average daily census in year 1
  - For all years following replacement, hospitals reported average annual efficiency gains of 0.8%
- Qualitative research offered “lessons learned” that can’t be put into numbers
  - New facility as a provider and staff recruitment strategy
  - Enabler of new PI initiatives
  - Offers some protection against economic downturn
  - Direct and indirect positive economic impact to community
  - Balancing community needs and “what you can afford”



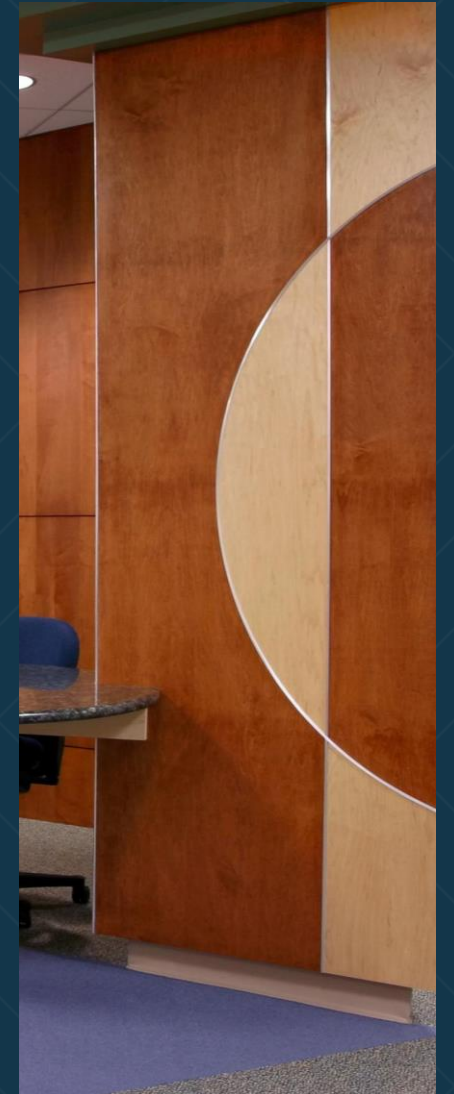
# PRIOR YEARS: TAKEAWAYS

- Post-replacement total margin ranged between -0.7 and 2.2%

Post-replacement Total margin	Year +1	Year +2	Year +3
2009 study	-0.7%	2.2%	-0.2%
2016 study	-0.6%	-0.2%	0.9%

- Post-replacement EBIDA margins ranged between 12 and 14%

Post-replacement EBIDA margin	Year +1	Year +2	Year +3
2009 study	14.2%	14.0%	11.5%
2016 study	12.6%	13.5%	12.8%



# 2017-2022 ENVIRONMENTAL OVERVIEW

- Transition towards value-based payment
  - Inpatient volumes declining across the industry
  - Provider competition to create value in line with Triple Aim
  - New technology-based competitors (Amazon, Walmart, CVS)
  - Private equity-backed competition for primary care
- Impacts of COVID pandemic
  - Improved liquidity from Provider Relief Funding
  - Significant construction cost inflation
    - Eliminated COVID cost report years from study to not skew results
- Continued increase in Medicare Advantage Plans
  - Challenges for often higher priced CAHs (i.e., swing beds)



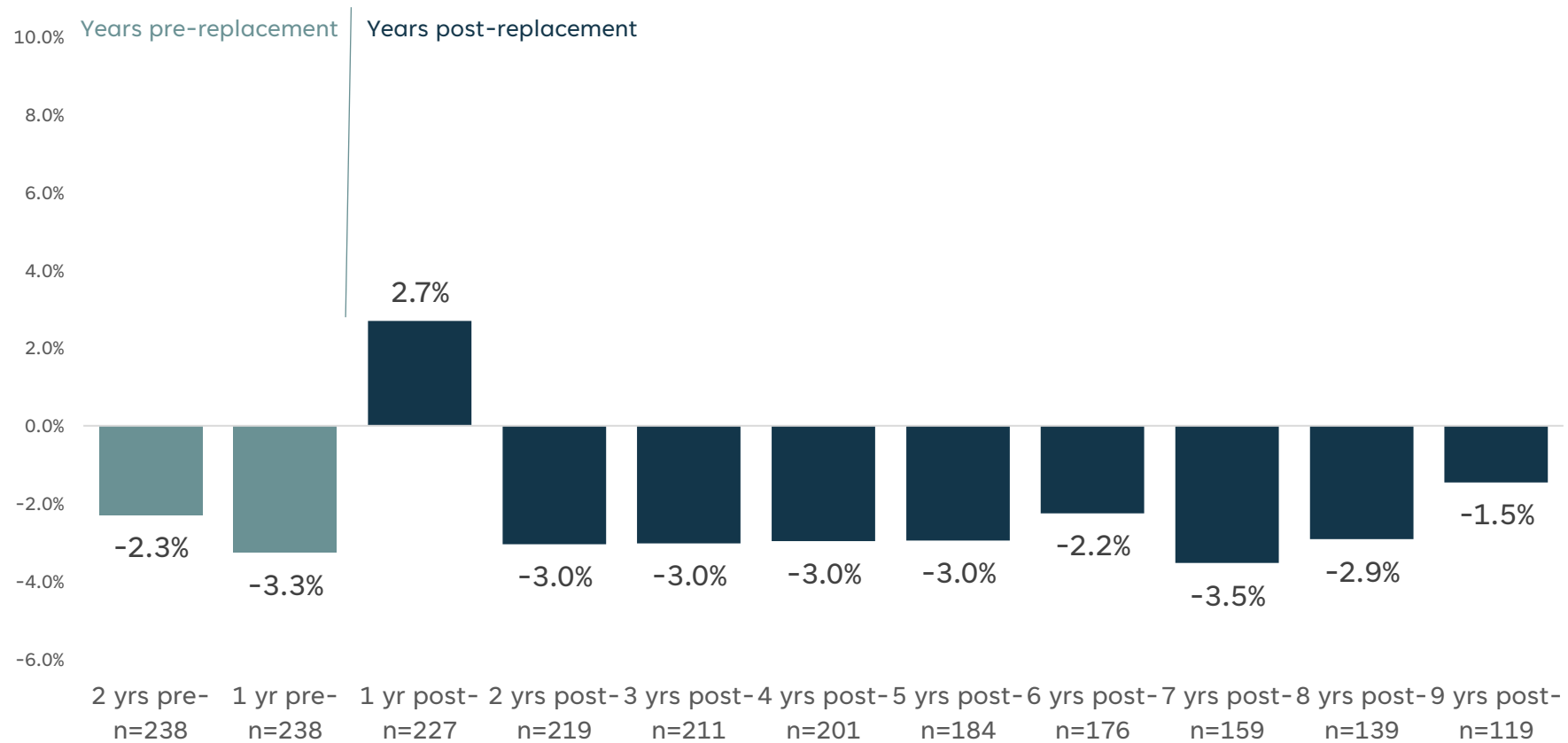




# 2022 FINDINGS

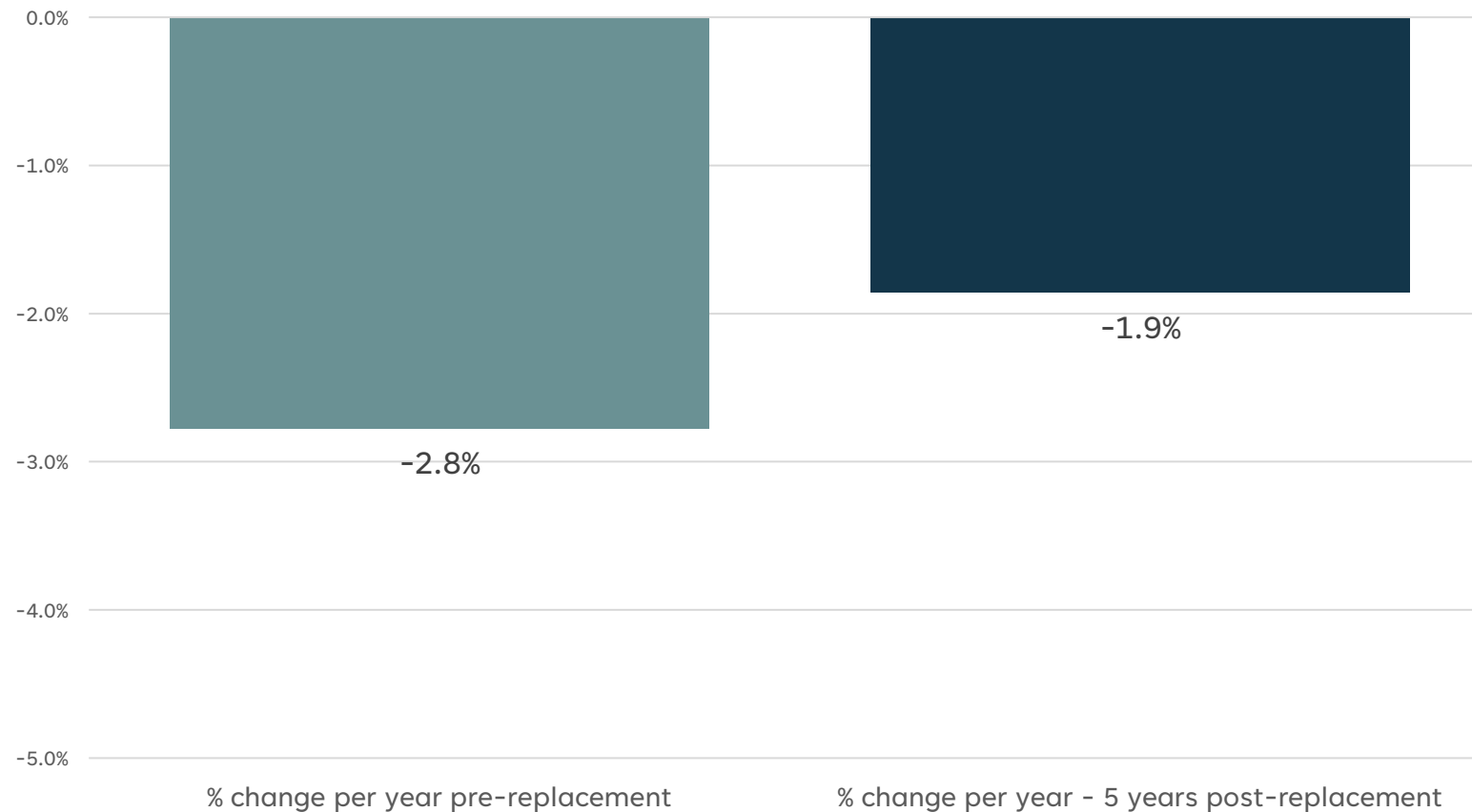
# CHANGE IN INPATIENT VOLUME: PATIENT DAYS

Percent Change in Patient Days  
By Year Pre- and Post- Replacement  
Number of facilities in each cohort as shown below



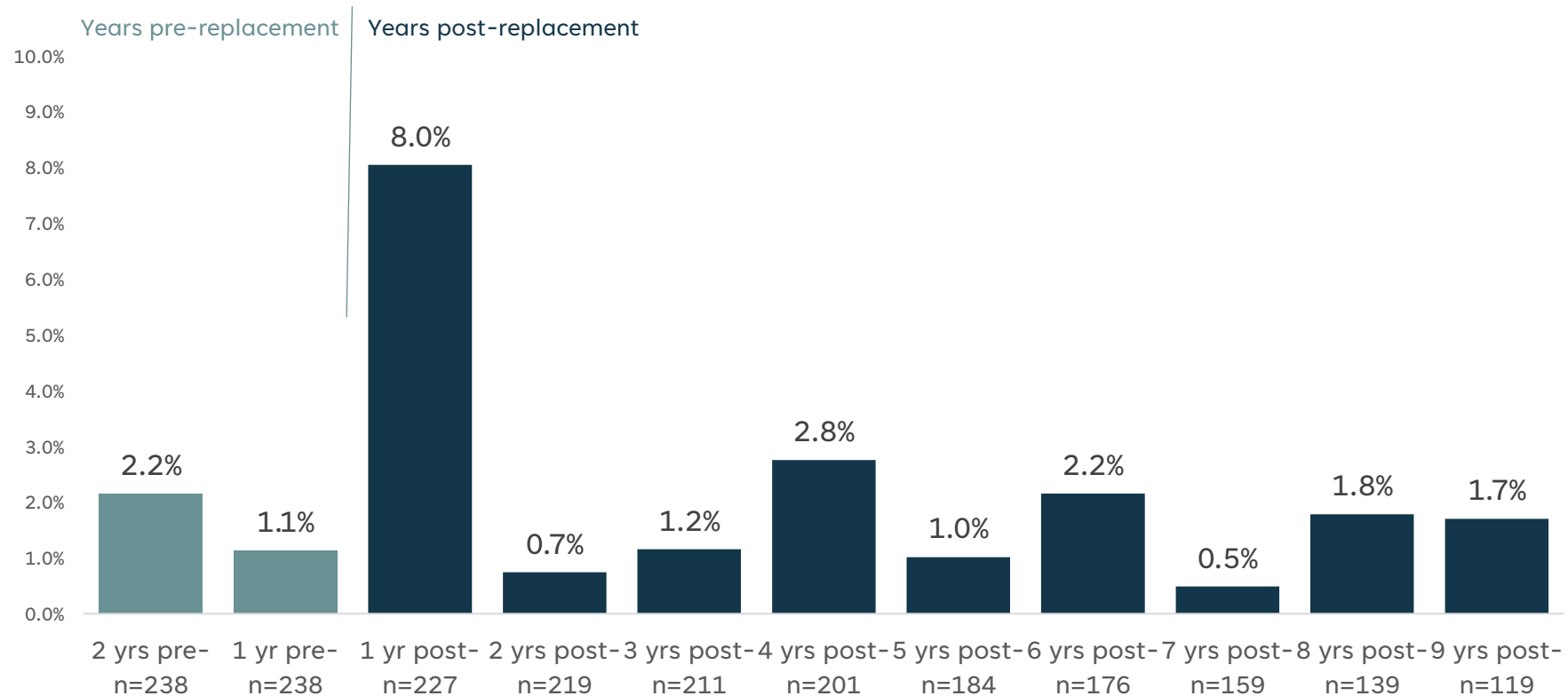
# PRE- VS. POST-REPLACEMENT EXPERIENCE: CHANGE IN PATIENT DAYS

Median Annual Percentage Change in Patient Days  
184 Hospitals with At Least Five Years Post Replacement Data



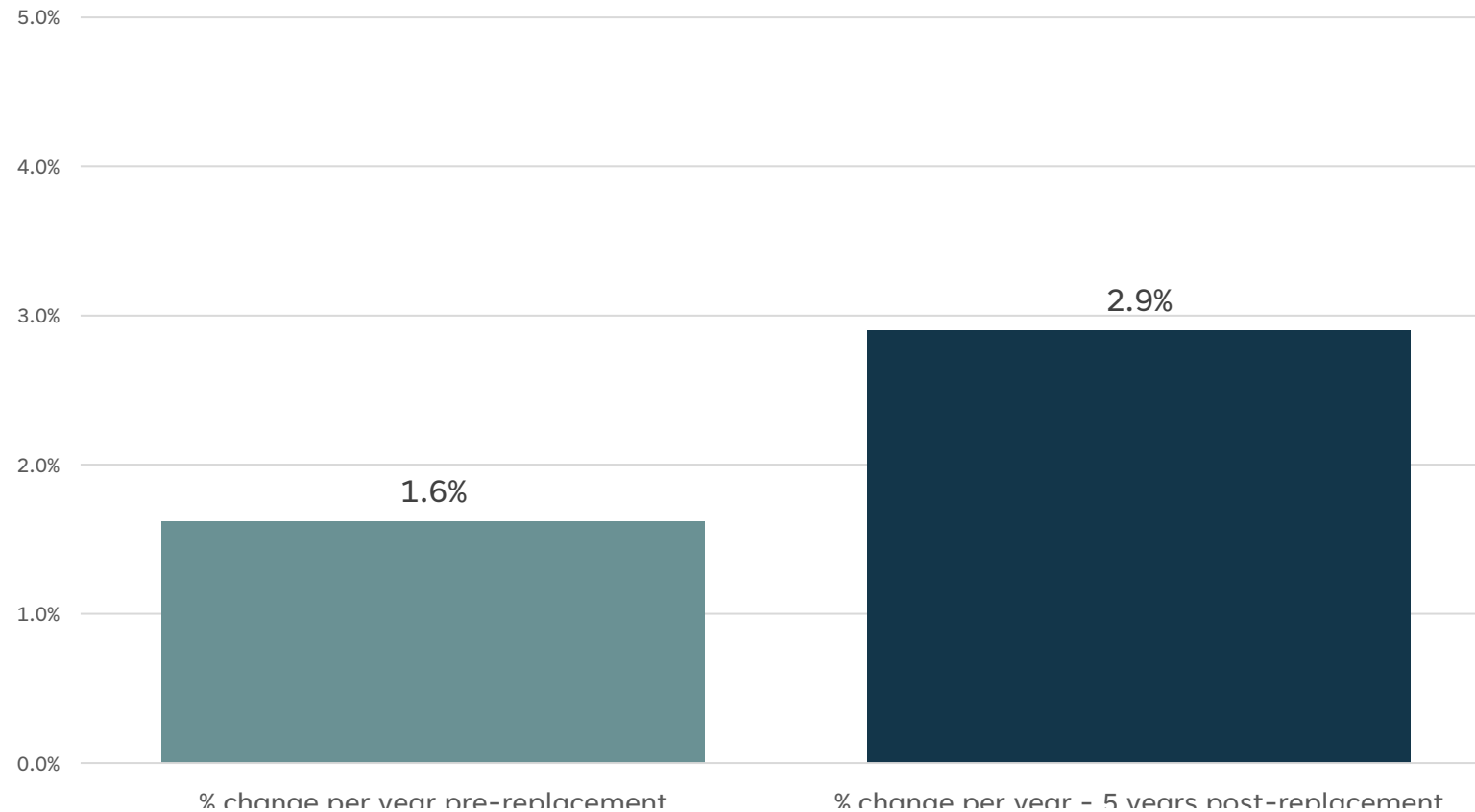
# CHANGE IN TOTAL VOLUMES: ADJUSTED PATIENT DAYS

Percent Change in Total Volume (Adjusted Patient Days)  
By Year Pre- and Post- Replacement  
Number of facilities in each cohort as shown below



# PRE- VS. POST-REPLACEMENT EXPERIENCE: CHANGE IN TOTAL VOLUME

Median Annual Percentage Change in Total Volume (Adjusted Patient Days)  
184 Hospitals with At Least Five Years Post Replacement Data



# TAKEAWAYS: CHANGES IN VOLUME

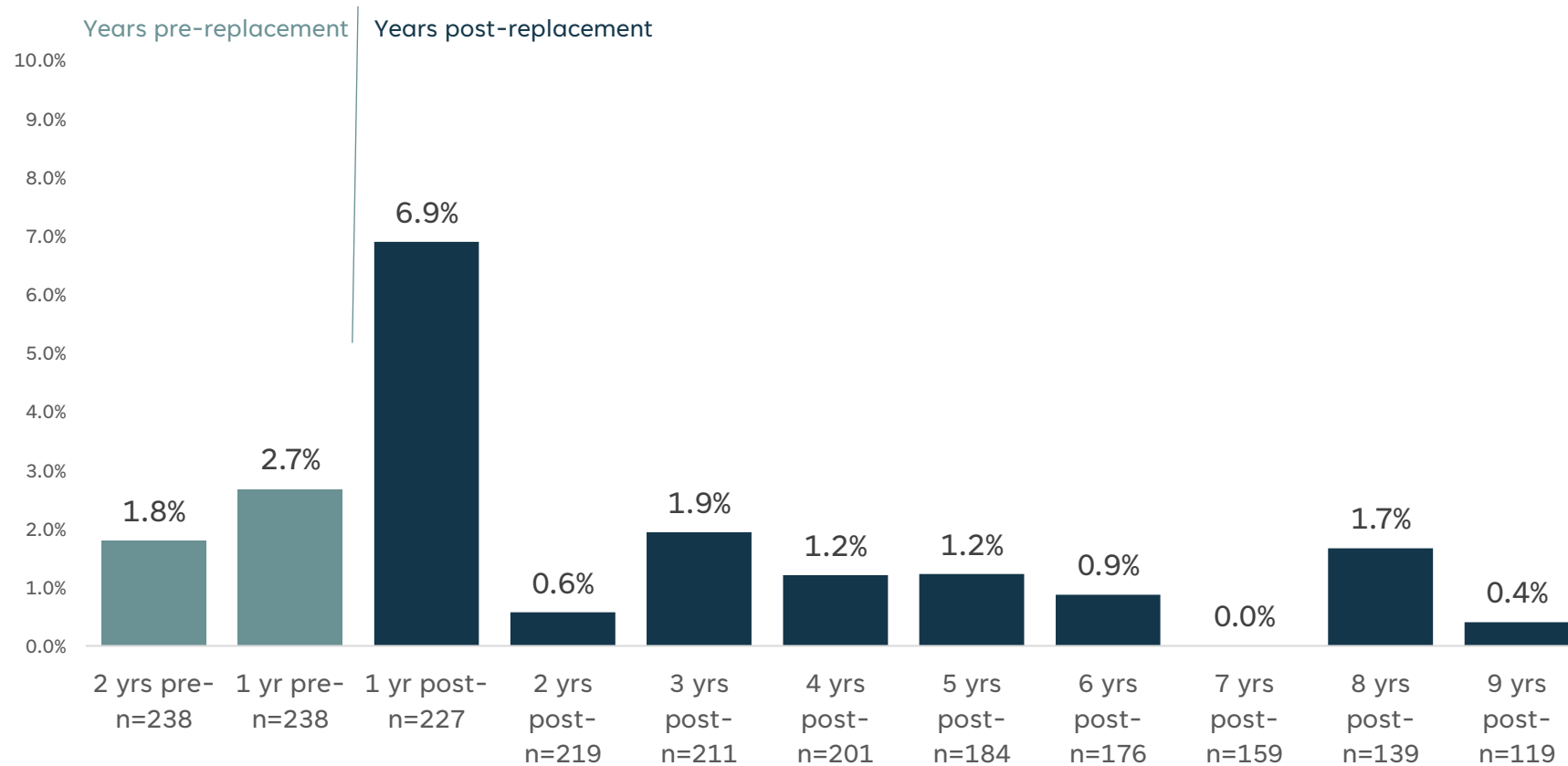
- CAHs showed consistent losses of inpatient volumes both pre- and post-replacement, consistent with industry trends
- Total volume growth of 1.6% per year in the pre-replacement periods increased to 2.9% per year for the first five years post-replacement
  - Measured by Adjusted Average Daily Census to include the impact of the outpatient adjustment factor
- The majority of volume increases were in the first year post-replacement, as indicated in the year-by-year analysis

Average growth (decline) per year over first five years (n=184)	Pre-replacement	Post-replacement
Acute and Swing Bed Days	-2.8%	-1.9%
Total Volumes, as measured by Adjusted Patient Days (APD)	1.6%	2.9%



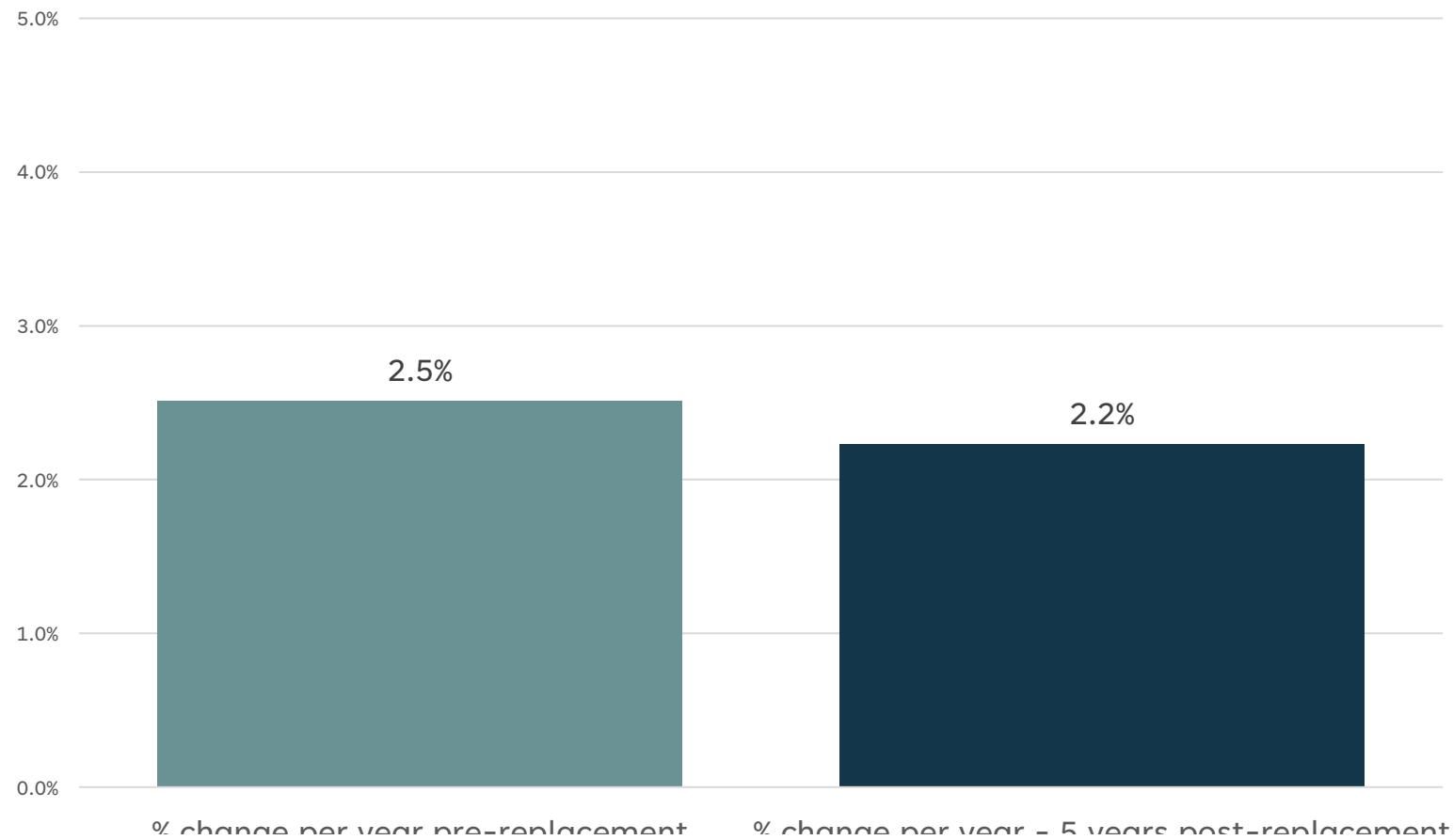
# CHANGE IN STAFFING COUNT: FTES

Percent Change in FTEs  
By Year Pre- and Post- Replacement  
Number of facilities in each cohort as shown below



# PRE- VS. POST-REPLACEMENT EXPERIENCE: CHANGE IN STAFFING COUNT

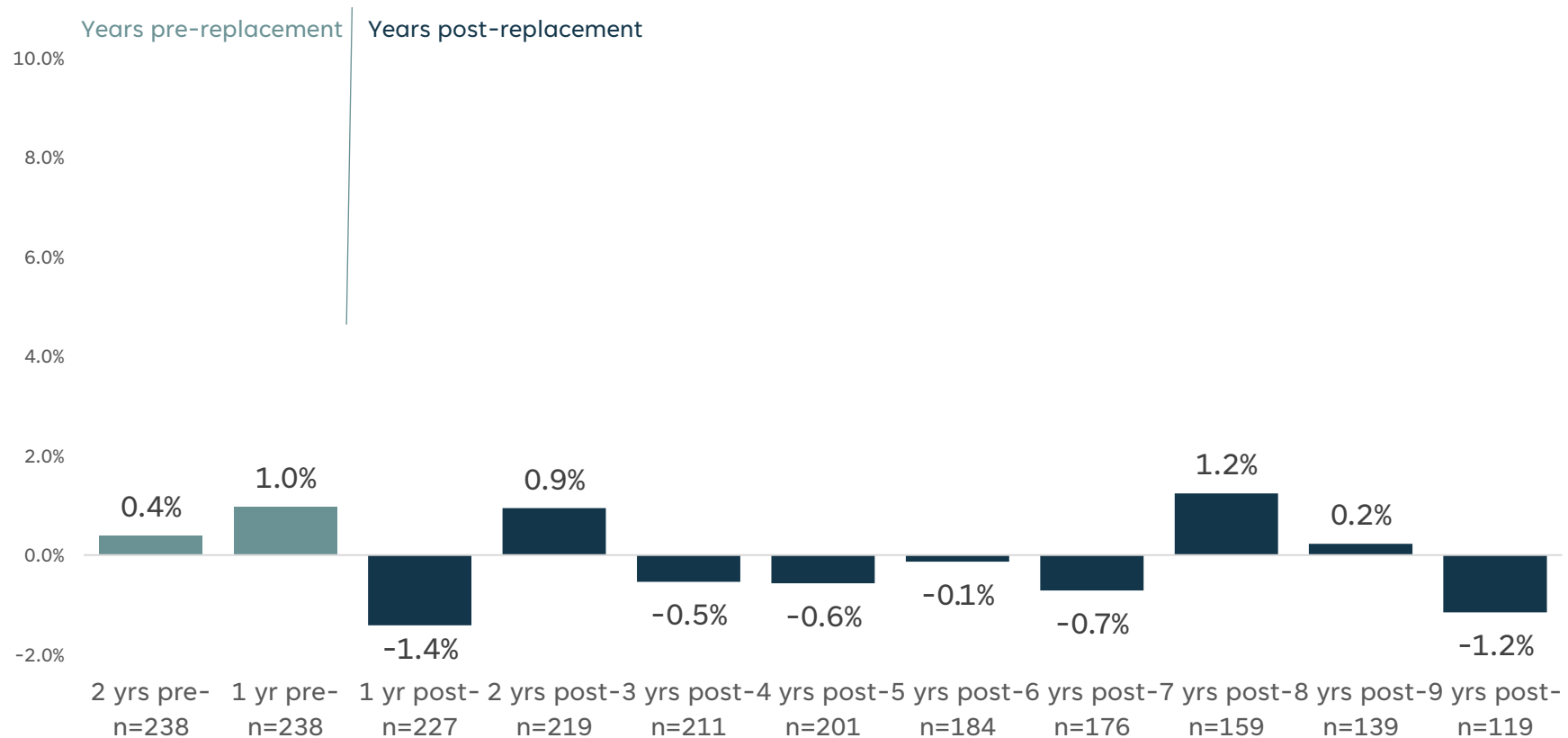
Median Annual Percentage Change in FTEs  
184 Hospitals with At Least Five Years Post Replacement Data



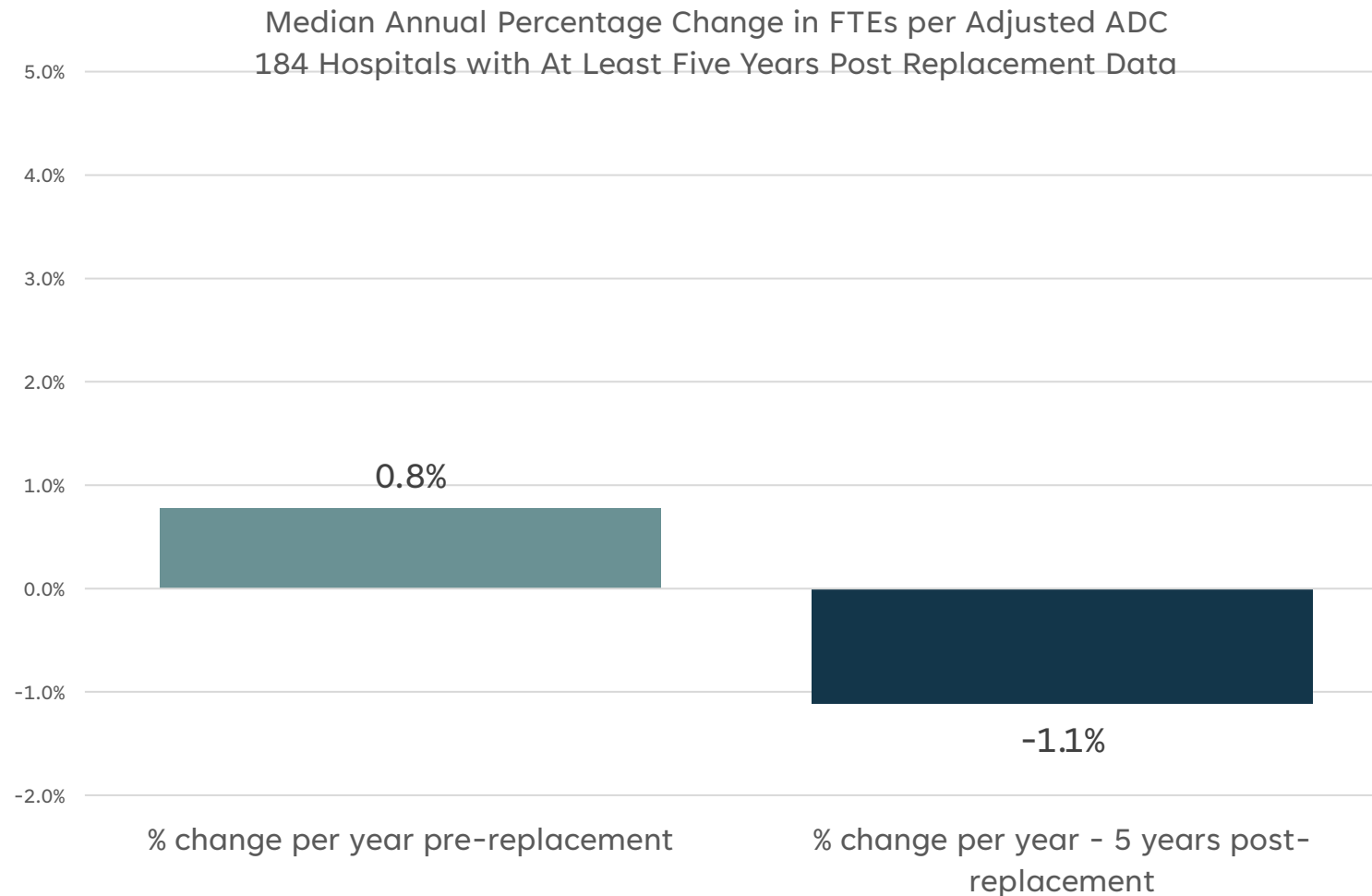


# CHANGE IN STAFFING EFFICIENCY: FTEs PER ADJUSTED PATIENT DAY

Percent Change in FTEs per Adjusted Average Daily Census (ADC)  
By Year Pre- and Post- Replacement  
Number of facilities in each cohort as shown below

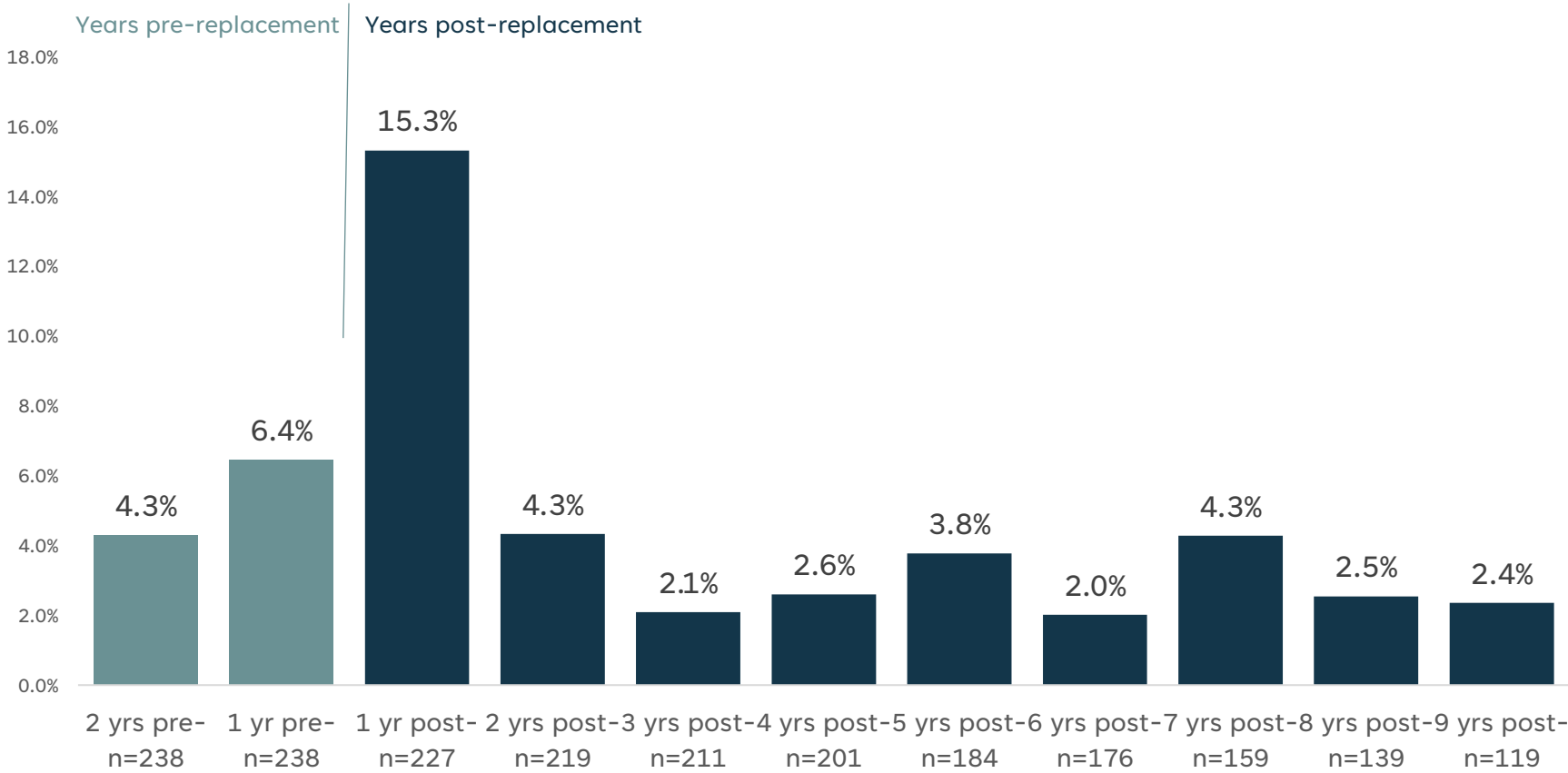


# PRE- VS. POST-REPLACEMENT EXPERIENCE: CHANGE IN STAFFING EFFICIENCY



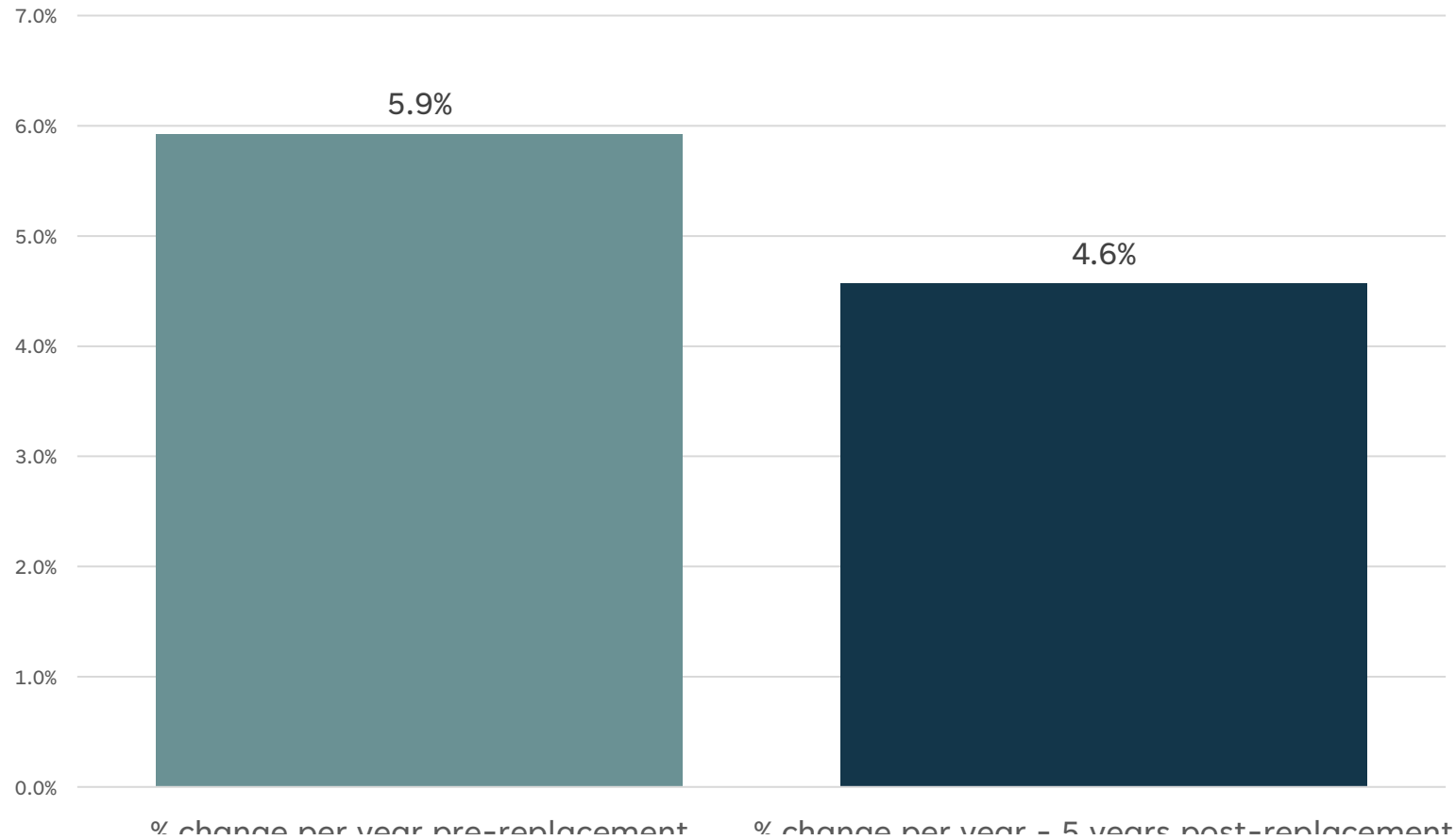
# CHANGE IN TOTAL OPERATING EFFICIENCY: EXPENSE PER ADJUSTED PATIENT DAY

Percent Change in Operating Expense per Adjusted Average Daily Census (ADC)  
By Year Pre- and Post- Replacement  
Number of facilities in each cohort as shown below



# PRE- VS. POST-REPLACEMENT EXPERIENCE: CHANGE IN TOTAL OPERATING EFFICIENCY

Median Annual Percentage Change in Operating Expense per Adjusted ADC  
184 Hospitals with At Least Five Years Post Replacement Data



# TAKEAWAYS: CHANGES IN EFFICIENCY

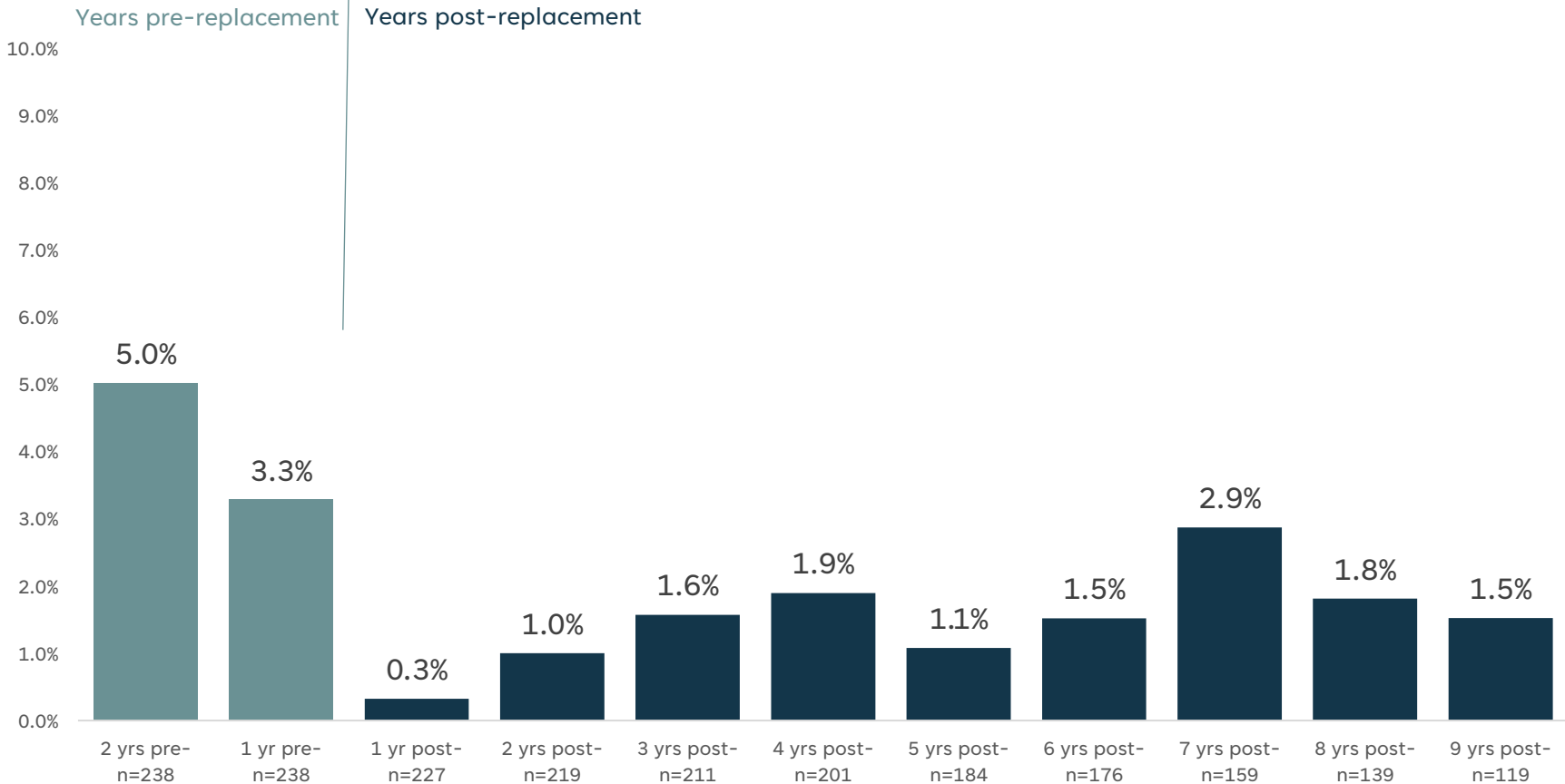
- Staffing increased consistently pre-and post-replacement
  - The majority of staffing increases were in the first year post-replacement, as indicated in the year-by-year analysis
- Efficiencies improved post-replacement with an improvement in staffing per unit of service from 0.8% in the pre-replacement period to a 1.1% decline in the post-replacement analysis, reflecting gains in volume exceeding the increased staffing
  - Total volume units of service measured by adjusted patient days
  - Declines in the measure of FTEs per adjusted patient day reflect efficiencies
- Growth in expenses per unit service slowed from 5.9% per year pre-replacement to 4.6% per year in the post-replacement period reflecting total volume growth offsetting the increased capital costs

Average growth (decline) per year over first five years (n=184)	Pre-replacement	Post-replacement
FTEs	2.5%	2.2%
FTEs per unit of service (adjusted patient days)	0.8%	-1.1%
Operating expense per unit of service (adjusted patient days)	5.9%	4.6%



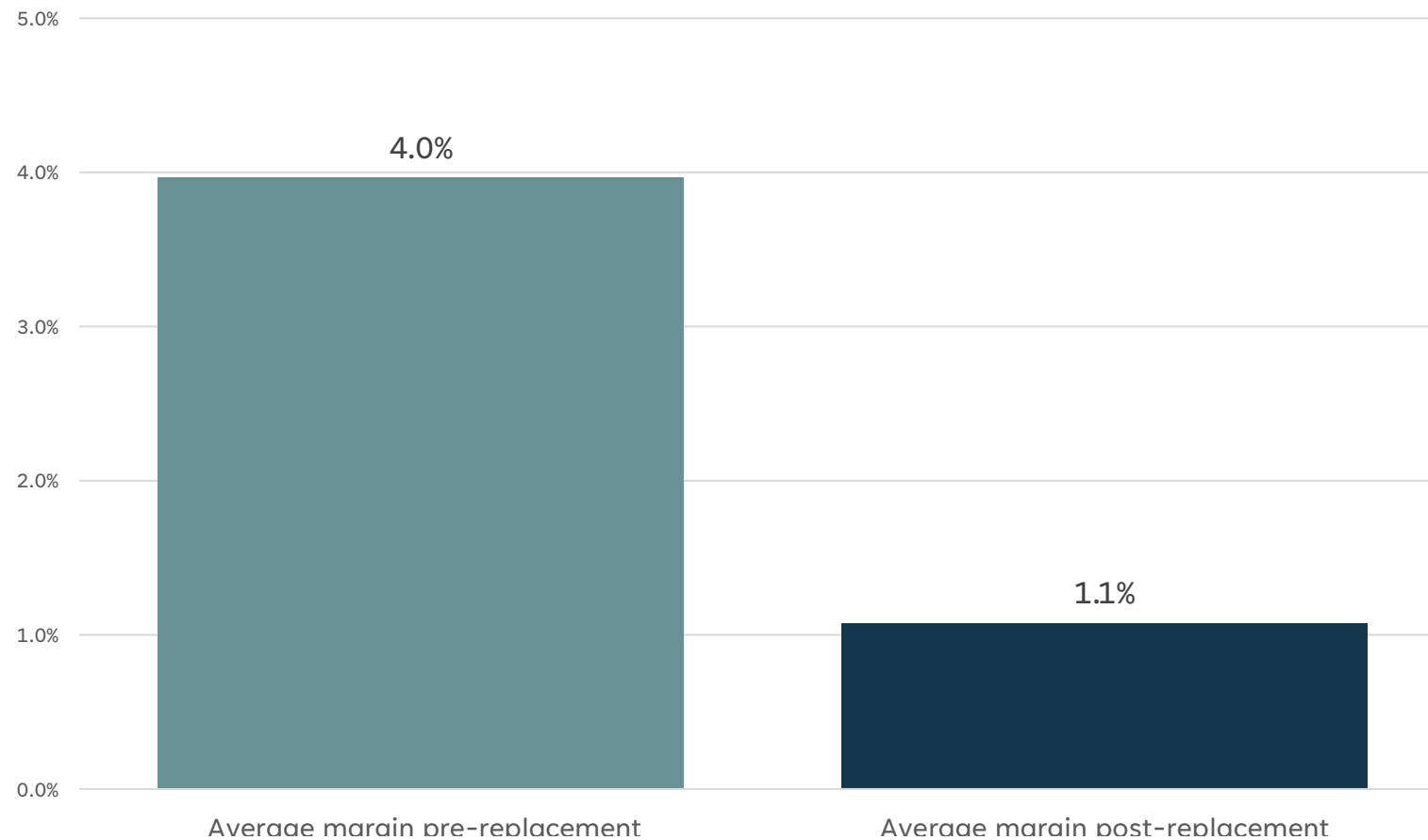
# TOTAL MARGIN BY YEAR

Median Total Margin  
By Year Pre- and Post- Replacement  
Number of facilities in each cohort as shown below



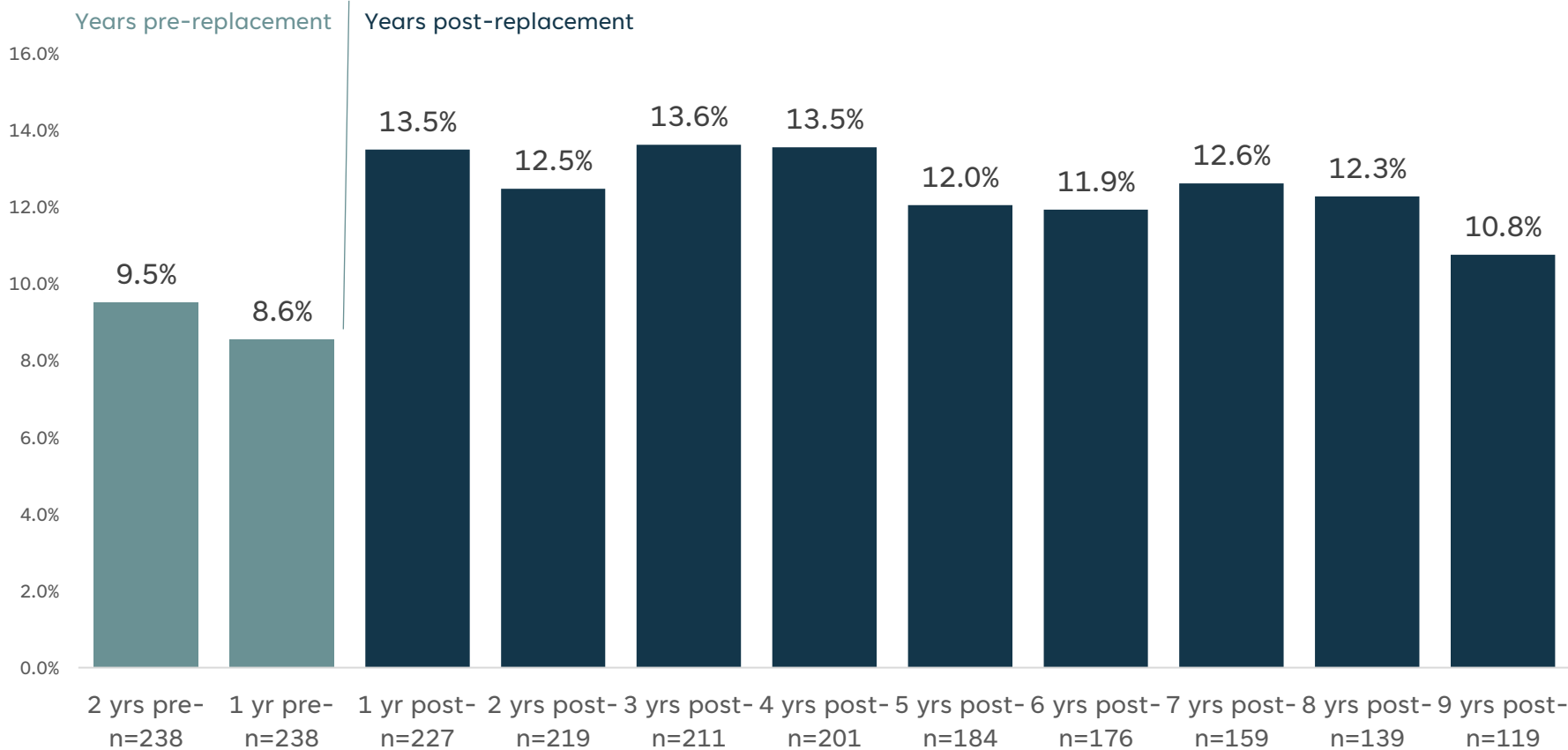
# PRE- VS. POST-REPLACEMENT EXPERIENCE: CHANGE IN TOTAL MARGIN

Median Annual Percentage Change in Total Margin  
184 Hospitals with At Least Five Years Post Replacement Data



# EBIDA MARGIN BY YEAR

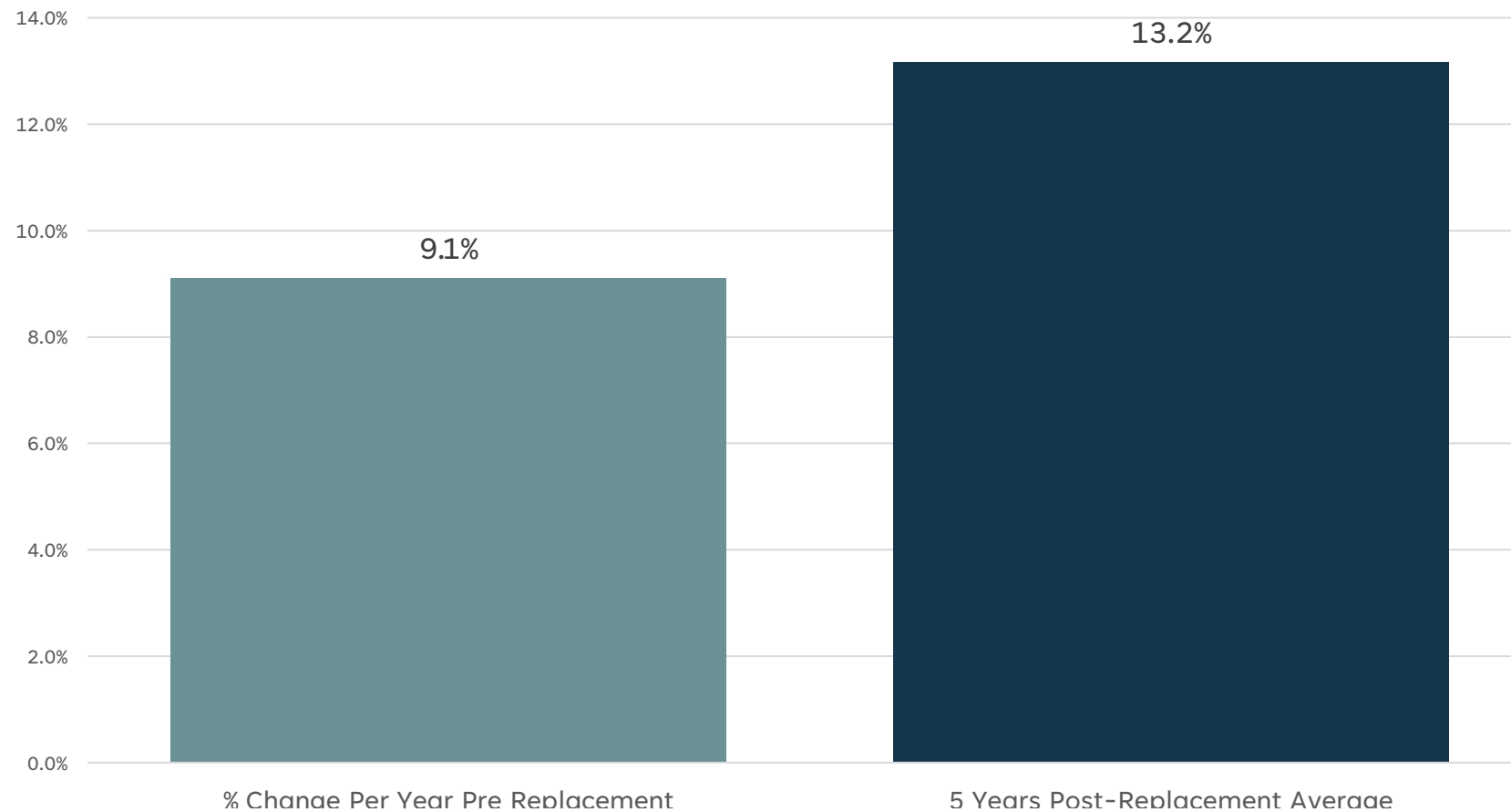
Change in EBIDA Margin  
By Year Pre- and Post- Replacement  
Number of facilities in each cohort as shown below





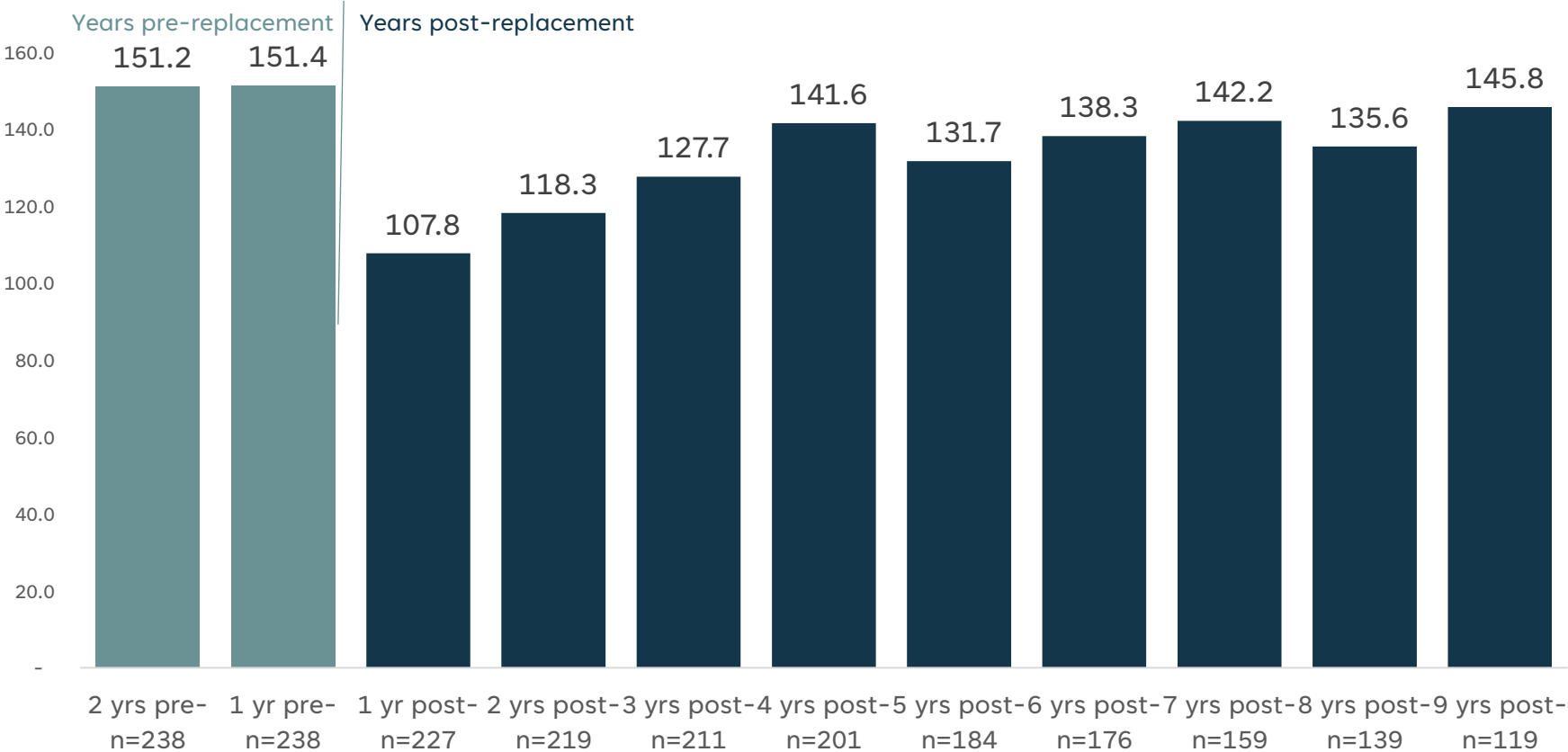
# PRE- VS. POST-REPLACEMENT EXPERIENCE: CHANGE IN EBIDA MARGIN

Median Annual EBIDA Margin  
184 Hospitals with At Least Five Years Post Replacement Data



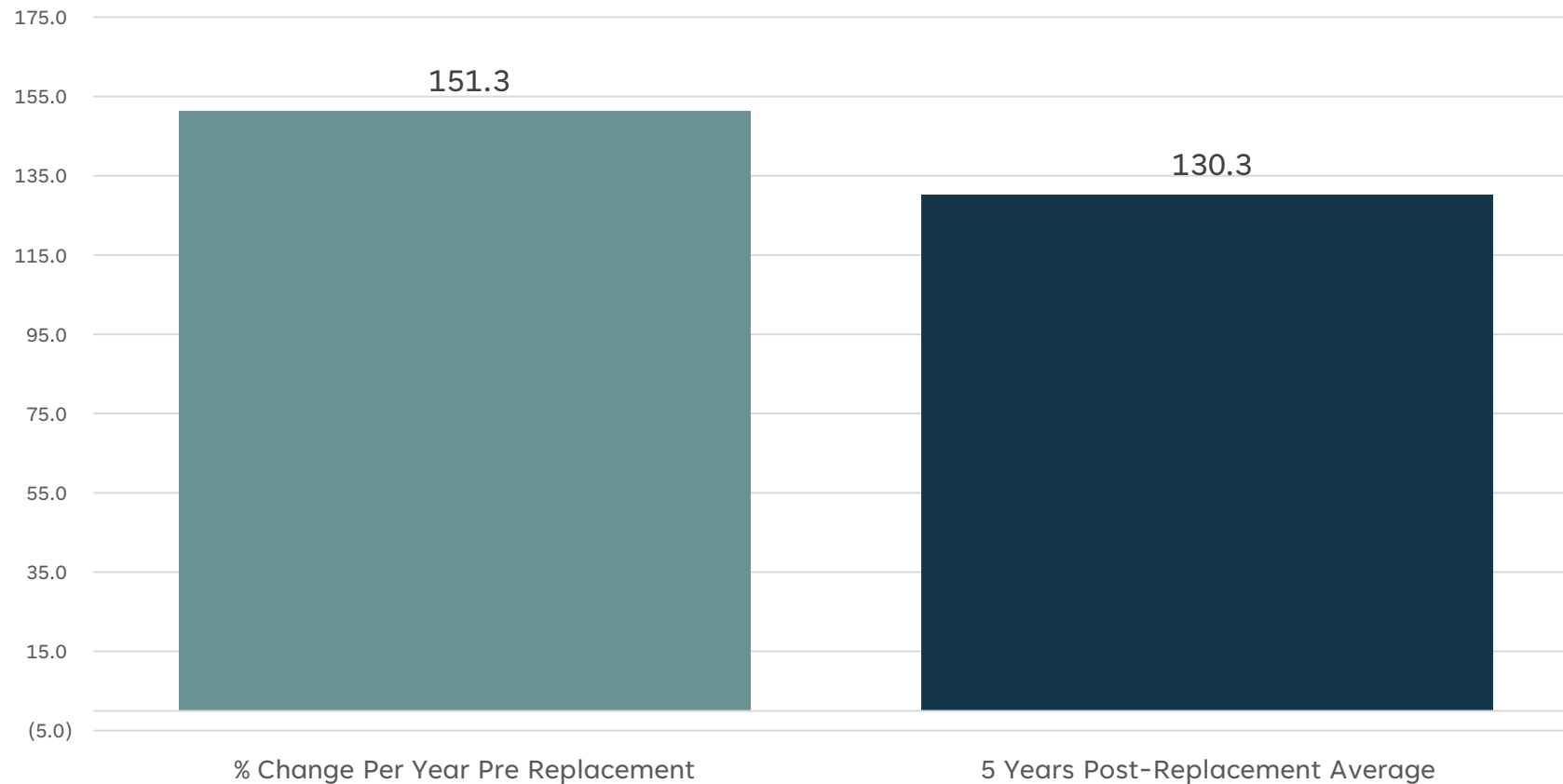
# DAYS CASH AND INVESTMENTS ON HAND

Change in Days Cash on Hand  
 By Year Pre- and Post- Replacement  
 Number of facilities in each cohort as shown below



# PRE- VS. POST-REPLACEMENT EXPERIENCE: DAYS OF CASH AND INVESTMENTS ON HAND

Median Annual Days Cash on Hand  
184 Hospitals with At Least Five Years Post Replacement Data



# PROFITABILITY TAKEAWAYS

- Total margins fell after replacement as a result of the increased capital costs
  - Year-by-year analysis shows growth in the median total margin in the initial post-replacement years , from 0.3% in Yr+1 to 1.9% in Yr.4 before declining to 1.1% in Yr+5
- EBIDA margins increased post-replacement as a result of the reimbursement of capital costs in the Medicare cost report
  - Earnings Before Interest Depreciation and Amortization (EBIDA) reflects cash flow including the Medicare cost-based reimbursement of capital costs (interest and depreciation)
- Cash and investments on hand dropped post-replacement, resulting from equity contributed toward the project and/or increased operating costs

Average annual growth rate for the three-year period pre and post replacement	Pre-replacement	Post-replacement
Total Margin	4.0%	1.1%
EBIDA Margin	9.1%	13.2%
Days of Cash and Investments on Hand	151	130



# QUALITY – HCAHPS SCORES

- Compared median HCAHPS and Core Measure quality scores for study hospitals to medians for all Critical Access Hospitals
  - Hospital Consumer Assessment of Healthcare Providers and Systems survey (HCAHPS) developed in partnership between the Centers for Medicare & Medicaid Services (CMS) and the Agency for Healthcare Research and Quality (AHRQ)
  - Analysis limited to most recent year of data available (2021)



Carilion Giles Community Hospital  
Virginia



# HCAHPS PERFORMANCE: REPLACEMENTS VS ALL CAHS

	Nurses Communicated "Always"	Doctors Communicated "Always"	Received help "Always"	Medicines explained "Always"	Room and bathroom were clean "Always"
<b>Average - Study Participants</b>	<b>84%</b>	<b>84%</b>	<b>75%</b>	<b>68%</b>	<b>79%</b>
Average - All CAHs Reporting	84%	85%	75%	67%	79%
	Room was quiet at night "Always"	Recovery at home info "Yes"	Understood their care when they left "Strongly Agree"	Rating of 9 or 10	Definitely Recommend "Yes"
<b>Average - Study Participants</b>	<b>69%</b>	<b>88%</b>	<b>55%</b>	<b>79%</b>	<b>76%</b>
Average - All CAHs Reporting	68%	88%	56%	77%	75%

source-CMS.gov 10/2020-9/2021



# CORE MEASURES: REPLACEMENTS VS ALL CAHS

## Heart Attack or Chest Pain

## Emergency Department

	Percentage of outpatients with chest pain or possible heart attack who got drugs to break up blood clots within 30 minutes of arrival. <b>higher is better</b>	Average (median) number of minutes before outpatients with chest pain or possible heart attack who needed specialized care were transferred to another hospital. <b>lower is better</b>	Average (median) time patients spent in the emergency department before leaving from the visit. <b>lower is better</b>	Average (median) time patients spent in the emergency department before leaving from the visit- Psychiatric/Mental Health Patients. <b>lower is better</b>	Percentage of patients who left the emergency department before being seen. <b>lower is better</b>	Percentage of patients who came to the emergency department with stroke symptoms who received brain scan results within 45 minutes of arrival. <b>higher is better</b>
	OP-2 %	OP-3b min	OP-18b min	OP18c min	OP-22 %	OP-23 %
<b>Average - Study Participants</b>	<b>59%</b>	<b>76</b>	<b>121</b>	<b>204</b>	<b>68%</b>	<b>59%</b>
Average - All CAHs Reporting	49%	74	115	203	67%	64%

source-CMS.gov 10/2020-9/2021



# CORE MEASURES: REPLACEMENTS VS ALL CAHS

## Preventive Care

Percentage of healthcare workers given influenza vaccination. **higher is better**

IMM-3 %

**87%**

Average - Study Participants

Average - All CAHs Reporting

86%

## Pregnancy and Delivery Care

Percentage of mothers whose deliveries were scheduled too early (1-2 weeks early), when a scheduled delivery wasn't medically necessary. **lower is better**

PC-01 %

**2%**

3%

## Cataract Surgery Outcome

Percentage of patients who had cataract surgery and had improvement in visual function within 90 days following the surgery. **higher is better**

OP-31 %

**91%**

98%

## Colonoscopy Care

Percentage of patients receiving appropriate recommendation for follow-up screening colonoscopy. **higher is better**

OP-29 %

**86%**

88%

source-CMS.gov 10/2020-9/2021





# QUALITY MEASURE TAKEAWAYS

- Comparison of overall quality performance is not materially different in comparing the replacement cohort to all CAHs nationally
- This finding is in contrast to:
  - Results from prior studies scoring replacement hospitals higher than all CAHs in multiple areas
  - Results from the prior qualitative studies that reported multiple examples of improved quality resulting from the project





**CONCLUSIONS**

# CONCLUSIONS

- On-going market activity with CAHs pursuing replacement projects indicating access to capital is not a barrier
  - 41% increase (71 facilities) from 2017 study
- On average, facilities experienced overall volume gains
  - Inpatient volumes declined consistent with industry trends
  - Growth in outpatient services offset inpatient declines on average
- Facilities added staff pre- and post-replacement
  - Post-replacement staffing per unit of service declined for improved efficiencies
- Facilities experienced increased EBIDA but lower total margins due to high interest and depreciation related to the new facilities
- Replacement facilities did not demonstrate higher satisfaction or quality scores compared to all CAHs



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- Mergers, Affiliations & Partnerships
- Population Health Strategies
- Physician-Hospital Alignment
- Strategic Facility Planning
- Capital Planning & Access
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### Operational Advisory

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- Provider Practice Operations Improvement
- Revenue Cycle Solutions
- Post-Acute Care Operations
- Payor Contracting Advisory
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- Cost Report Reviews and Analysis

