

2024 VIZIENT CONNECTIONS SUMMIT

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Understanding the Impact of Hospital Acquisitions on Quality of Care

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Learning Objectives

- Discuss metrics that can be used to develop a sustainable standard for real-time evaluation of pre-/post-acquisition quality of care.
- Describe organizational factors that accelerate post-acquisition quality improvement.

Understanding the Impact of Hospital Acquisitions on Quality of Care

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- Mergers and acquisitions are accelerating in the healthcare industry.¹
- Financial impacts of hospital mergers are well demonstrated and include cost savings and economies of scale, yet quality impacts are less clear.^{2,3}
- Systematic review conducted through January 2020 reported inconsistent findings and few statistically significant results of hospital mergers on healthcare quality measures.⁴
- Additional studies are needed to assess impact of hospital mergers on quality of care.

Study Purpose



To understand the effect of recent Medical University of South Carolina (MUSC) Health Regional Health Network (RHN) acquisitions on healthcare quality and identify factors that can accelerate quality improvement

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What did we know?

MUSC Health quality showed overall improvement in:

- Leapfrog Hospital Safety Grade
- CMS Overall Star Rating
- CMS Patient Experience Star Rating

While we believe in the validity of these scores, we questioned if they reflect true improvement associated with acquisition, and we will illustrate why on the following slide. We will then propose an alternative metric for real-time assessment of quality post-acquisition.

Leapfrog Hospital Safety Grade			
	Pre-Acquisition	Post-Acquisition	Delta
RHN #1	B	A	1
RHN #2	D	A	3
RHN #3	C	B	1
RHN #4	N/A	N/A	N/A
RHN #5	C	A	2
RHN #6	C	B	1
CMS Overall Star Rating			
	Pre-Acquisition	Post-Acquisition	Delta
RHN #1	3	3	0
RHN #2	2	3	1
RHN #3	2	3	1
RHN #4	2	2	0
RHN #5	2	2	0
RHN #6	4	3	-1
CMS Patient Experience Star Rating			
	Pre-Acquisition	Post-Acquisition	Delta
RHN #1	3	3	0
RHN #2	2	3	1
RHN #3	2	3	1
RHN #4	N/A	N/A	N/A
RHN #5	3	3	0
RHN #6	3	3	0



Limitations of Leapfrog/CMS Data

1. Publicly available Leapfrog data limited to last 3 years
2. CMS data not all publicly available
3. CMS data only has a select patient population
4. CMS uses claims data for some measures and institutional reporting for others
5. Delayed reporting
6. Skip periods in data collection (COVID)
7. Variable time periods for each outcome measure

MUSC BY THE NUMBERS

The Only Comprehensive Academic Health System in South Carolina



1.6+
MILLION
Patient Encounters Annually

100,000+
Accountable Care Organization Members

South Carolina's only Comprehensive Academic Health and Science Center

46
Counties

25,000+
Employees

1,400+
Physicians

4.7+ Total Operating Expenses
BILLION

3.6+ Total Assets
BILLION

5.6 Total Economic Impact
BILLION

16
Hospitals

785+
Care Locations

Telehealth Center of Excellence

Employee Demographics

15% leaders are under-represented minorities (URM)

81% of workforce identify as female

32% of workforce identify as racial/ethnic minority

2,744
Licensed Beds

10
Pharmacies

6 COLLEGES

3,264 STUDENTS

918 RESIDENTS & FELLOWS

298 MILLION
Research funding

NCI- Designated Cancer Center
and
Largest bio medical research in South Carolina

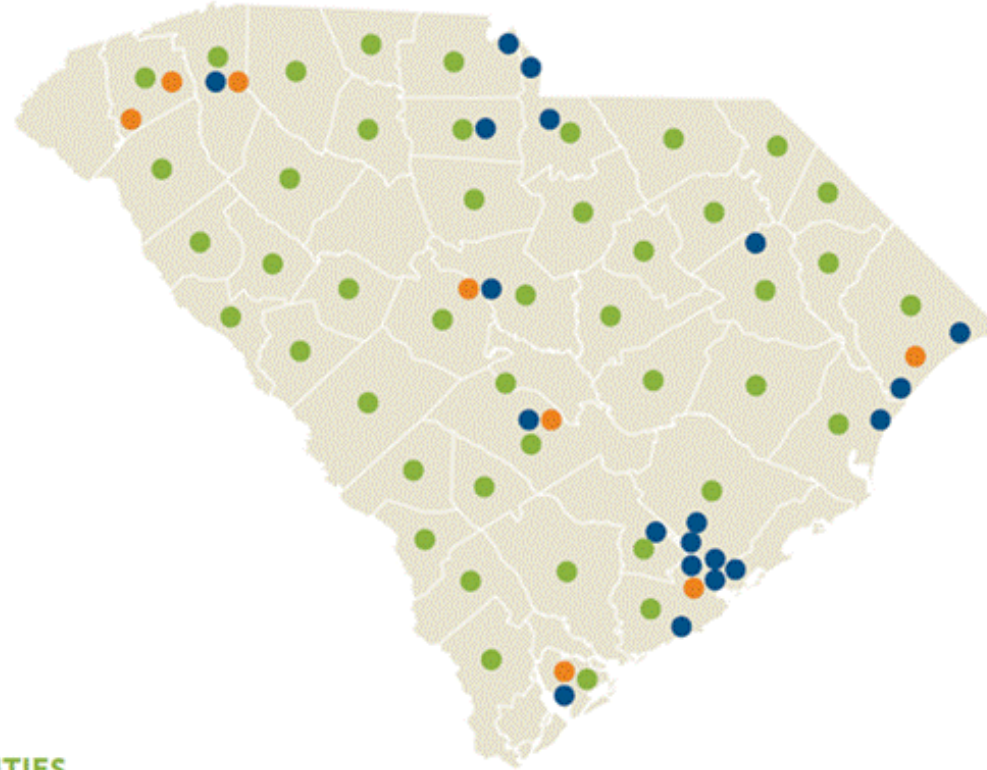
GROWTH AND IMPACT

CLINICAL LOCATIONS

- Beaufort
- Charleston
- Chester
- Columbia
- Daniel Island
- Florence
- Fort Mill
- Goose Creek
- Greenville
- Indian Land
- Lancaster
- Mount Pleasant
- Mullins
- Murrells Inlet
- Myrtle Beach
- North Charleston
- Orangeburg
- Pawleys Island
- Seabrook Island
- Summerville

RESEARCH LOCATIONS

- Beaufort
- Charleston
- Clemson
- Columbia
- Greenville
- Myrtle Beach
- Orangeburg
- Pickens



TELEHEALTH-CONNECTED COUNTIES

- | | | | |
|--------------|----------------|--------------|----------------|
| • Abbeville | • Chester | • Greenville | • Marlboro |
| • Aiken | • Chesterfield | • Greenwood | • McCormick |
| • Allendale | • Clarendon | • Hampton | • Orangeburg |
| • Anderson | • Colleton | • Horry | • Pickens |
| • Bamberg | • Darlington | • Jasper | • Richland |
| • Barnwell | • Dillon | • Kershaw | • Saluda |
| • Beaufort | • Dorchester | • Lancaster | • Spartanburg |
| • Berkeley | • Edgefield | • Laurens | • Sumter |
| • Calhoun | • Fairfield | • Lee | • Union |
| • Charleston | • Florence | • Lexington | • Williamsburg |
| • Cherokee | • Georgetown | • Marion | • York |

- CLINICAL LOCATIONS
- RESEARCH LOCATIONS
- TELEHEALTH-CONNECTED COUNTIES

- **Study Design:** pre-/post-acquisition observation study of 5 hospitals within MUSC Health's RHN, acquired between 2019 and 2021
- **Data Source:** Vizient Clinical Data Base
- **Outcome Measures:** Vizient Quality and Accountability (Q&A) change in:
 - Overall Vizient hospital performance rank
 - Mortality domain rank
 - Safety domain rank
 - Patient centeredness domain rank

- Pre-acquisition data defined as data within 6 months immediately following acquisition, as MUSC had not yet made changes that would impact quality.
- Post-acquisition data defined as data ≥ 1 year following acquisition.
- Vizient Q&A data sheets used to compare pre-/post-acquisition data.
- Mortality, safety, and patient centeredness chosen as outcome measures because most reflective of quality on Q&A.
- Raw ranks adjusted to percentile ranks, as number of hospitals in Vizient cohort varied each year (lower percentile rank indicates improvement).

Results

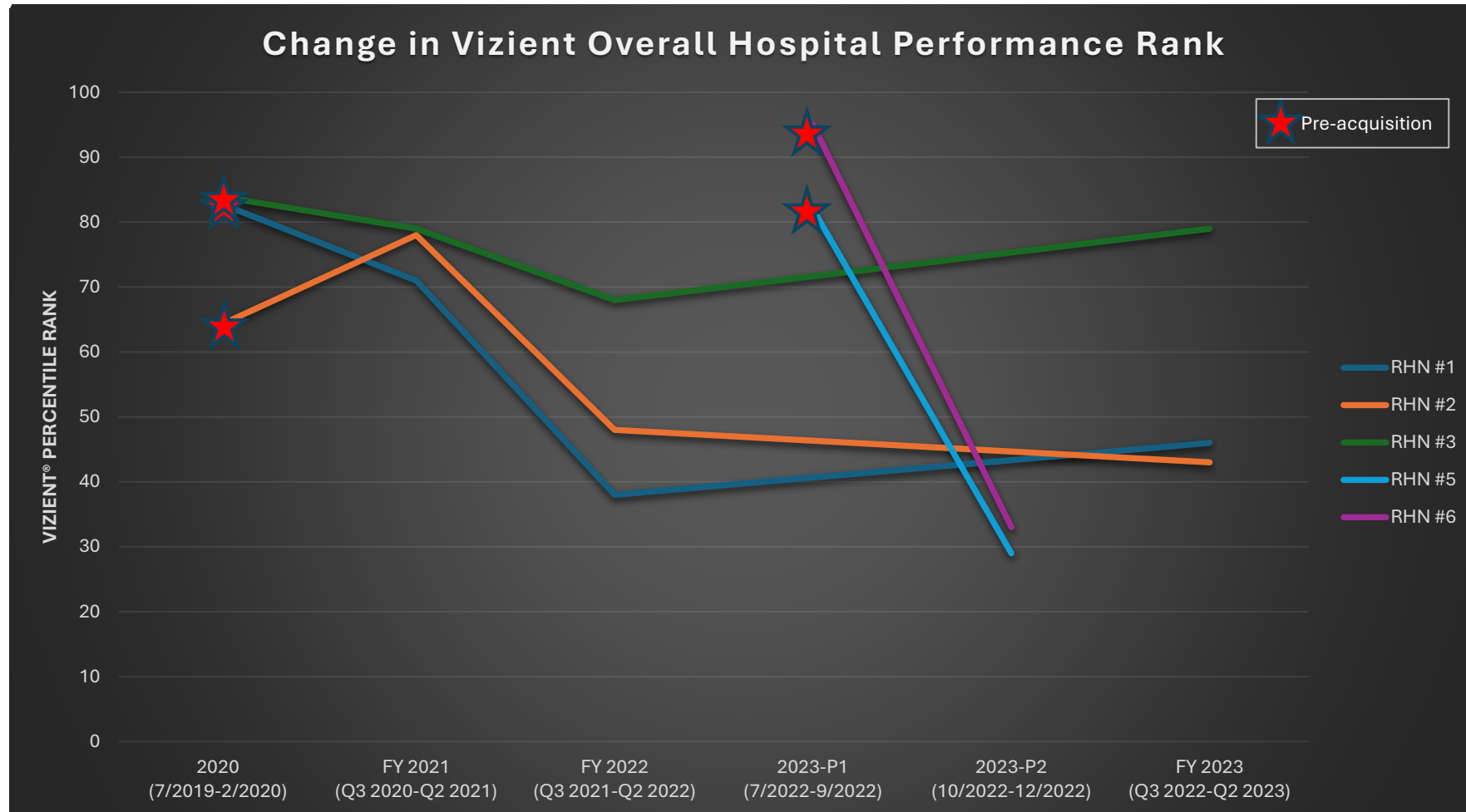


Figure 1. Vizient overall hospital performance percentile rank for individual hospitals within RHN in pre-/post-acquisition periods (lower is better). RHN #4 excluded in analysis based on size and paucity of data.

Results



RHN #1 Acquisition 3/1/19	Percentile Rank (%)			
	Pre-Acquisition (7/2019-2/2020)	FY 2021	FY 2022	FY 2023
Overall Rank	83	71	38	46
Mortality	43	38	7	13
Safety	8	52	43	60
Patient Centeredness	86	37	49	71
RHN #2 Acquisition 3/1/19	Percentile Rank (%)			
	Pre-Acquisition (7/2019-2/2020)	FY 2021	FY 2022	FY 2023
Overall Rank	64	78	48	43
Mortality	4	45	28	20
Safety	74	79	57	94
Patient Centeredness	81	61	52	64
RHN #3 Acquisition 3/1/19	Percentile Rank (%)			
	Pre-Acquisition (7/2019-2/2020)	FY 2021	FY 2022	FY 2023
Overall Rank	84	79	68	79
Mortality	47	50	49	75
Safety	44	37	32	51
Patient Centeredness	74	74	76	80

RHN #5 Acquisition 8/1/21	Percentile Rank (%)	
	Pre-Acquisition (7/2022-9/2022)	2023-P2 (10/2022-12/2022)
Overall Rank	82	29
Mortality	27	23
Safety	84	69
Patient Centeredness	86	29
RHN #6 Acquisition 8/1/21	Percentile Rank (%)	
	Pre-Acquisition (7/2022-9/2022)	2023-P2 (10/2022-12/2022)
Overall Rank	95	33
Mortality	18	13
Safety	98	54
Patient Centeredness	95	44
Key		
	Better than pre-acquisition	
	Worse than pre-acquisition	
	Worse than pre-acquisition & better than immediate post-acquisition	

Figure 2. Pre/post-acquisition outcome measures by individual hospital within RHN.

Conclusions

- All 5 MUSC Health regional hospital acquisitions show improved post-acquisition overall hospital performance percentile rank!
- 4 of 5 hospitals are better than average (<50th percentile rank).
- Individual quality outcomes vary in association with MUSC Health regional hospital acquisition.
- More recent acquisitions show improved post-acquisition quality measures and accelerated time to improvement.

- Safety and patient centeredness are opportunities across the RHN.
- One hospital appears to be an outlier.
- Further detailed dive into each hospital helps understand drivers of individual outcomes.
- Limitations:
 - Data prior to acquisition date is not available due to variable EMR use and lack of access to Vizient Clinical Data Base.
 - COVID pandemic occurred shortly after acquisition of RHNs #1-3, when hospital-acquired conditions worsened nationally.⁵

Quality metrics improved in recent acquisitions due to:

- Lessons learned from earlier acquisitions
- System-level standardization with implementation of governed management plans for:
 - *EHR integration*
 - *Safety event reporting system & process improvement methodology*
 - *High reliability infrastructure (safety rounds, tiered briefs, visual management boards)*

 - **Service:** *data and coaching infrastructure*
 - **Mortality:** *early warning system, palliative care, inpatient hospice, code cart standardization, transfer protocols*
 - **Readmission:** *risk prediction model, med rec, post-acute strategy, care coordination*

- Consider various sources of rankings and whether they offer lagging or leading indicators to determine success in quality and operations.
- System standardization is critical and time-sensitive for mergers and acquisitions and should include:
 - Cultural acclimation
 - EHR
 - Quality and reliability infrastructure
 - Quality management plans

Key Takeaways

- Mergers and acquisitions are commonplace in healthcare.
- The data source you choose can impact your ability to review how major changes may affect quality within your healthcare network.
- Compare your institution's quality standards with other national institutions.

References

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Questions?



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