

ATTACHMENT 2

Comparison to Similarly-Sized Systems

Methodology for Selection of Comparison Systems

This report provides a summary of the methodology for selection of “similarity-sized” hospital system as established in the TN Terms of Certification 4.02(c)(ii), Exhibit G. ***As indicated in the 2020 report, there are significant challenges with the selection of “similarly-sized” hospital systems, as “size” of the system, even with some of the factors taken into consideration, is not a standard for comparison in the industry without appropriate adjustment for score of services, community characteristics, revenue impact of federal reimbursements (i.e. Ballad Health hospitals have historically had among the 2nd lowest Medicare Area Wage Index in the United States), payer mix (i.e. Ballad Health hospitals have a payer mix which approximately 70 percent government payer and charity/uninsured), and the general rural nature of the Ballad Health service area compared to the more urban and suburban nature of the comparison hospitals. Based on these factors, there are significant differences in resources available and there is no standard for adjustment based on the differences. Ballad Health cautions against any conclusions based on these comparisons.***


In order to maintain consistent comparisons from prior years, the same hospitals have been used for the attached report. Advocate Aurora Health and Atrium Health announced plans to merge May, 2022, however, the board in Illinois requested additional information. As of mid-September 2022, the merger of a 67-hospital system is delayed. Mercy Health who merged with Bon Secours in 2018, now has a system of 38 hospitals. It was noted in the previous report that Unity Point Health and Sanford Health signed a letter of intent to merge by the end of 2019, however, the merger did not take place. Therefore, we continue to use Unity Point System as a comparison for FY22 as well. New comparison organizations will be selected for next year in collaboration with Tennessee and Virginia as Ballad Health works with Premier to determine the appropriate health systems for comparison.

Selection criteria ranked by priority:

- Not-for-profit
- Net revenue
- Aligned with Premier as quality partner – *allows for better benchmarking and best practice sharing*
- Bed size and number of hospitals
- Rural hospitals and similar services
- Location – *allows for travel for site visits*
- Epic HER
- Top performers

\$ in billions	Aurora Health	Baptist Memorial	Carillion Clinic	Mercy Health	Texas Health	Unity Point Health
Net Revenue	\$3.5	\$2.6	\$1.0	\$5.0	\$4.8	\$5.0
Bed Size – Staffed	2,695	2,300	1,026	3132	4,000	4205
# of Hospitals	16	14	8	38	27	39
Location	Milwaukee, WI	Memphis, TN	Roanoke, VA	Cincinnati, OH	Arlington, TX	Des Moines, IA
Ranking	#25	#24	NA	#15	#22	#19

System Comparison FY22 Report

		Top 10% in the Nation	National Average	Ballad Health	Aurora	Baptist Health	Carilion	Mercy Health	Texas Health	Unity Point	Peer Group
Quality Target Measures											
↓ PSI 3 Pressure Ulcer Rate	7/1/2018 - 12/31/2019	0.19	0.59	0.59	1.12	0.28	0.62	0.26	0.31	0.35	0.50
↓ PSI 6 Iatrogenic Pneumothorax Rate	7/1/2018 - 12/31/2019	0.20	0.23	0.23	0.25	0.23	0.17	0.25	0.20	0.21	0.22
↓ PSI 7 Central Venous Catheter-Related Blood Stream Infection Rate - Retired	RETIRED	--	--	--	--	--	--	--	--	--	--
↓ PSI 8 In Hospital Fall with Hip Fracture Rate	7/1/2018 - 12/31/2019	0.09	0.10	0.10	0.09	0.09	0.09	0.09	0.09	0.10	0.09
↓ PSI 9 Perioperative Hemorrhage or Hematoma Rate	7/1/2018 - 12/31/2019	2.18	2.55	2.35	3.40	2.26	2.82	2.42	2.42	2.44	2.59
↓ PSI 10 Postoperative Acute Kidney Injury Requiring Dialysis	7/1/2018 - 12/31/2019	1.21	1.42	1.54	1.77	1.55	1.38	1.42	1.61	1.59	1.55
↓ PSI 11 Postoperative Respiratory Failure Rate	7/1/2018 - 12/31/2019	3.75	5.03	5.27	5.56	5.33	6.98	5.57	5.53	5.59	5.69
↓ PSI 12 Perioperative Pulmonary Embolism or Deep Vein Thrombosis Rate	7/1/2018 - 12/31/2019	2.61	3.63	3.35	3.29	3.77	4.14	3.00	3.53	3.25	3.48
↓ PSI 13 Postoperative Sepsis Rate	7/1/2018 - 12/31/2019	4.05	4.90	5.06	4.67	5.40	4.87	4.64	4.39	4.88	4.84
↓ PSI 14 Postoperative Wound Dehiscence Rate	7/1/2018 - 12/31/2019	0.79	0.86	0.94	0.81	0.83	0.94	0.84	0.84	0.85	0.86
↓ PSI 15 Unrecognized Abdominopelvic Accidental Puncture/Laceration Rate	7/1/2018 - 12/31/2019	0.92	1.20	1.12	1.04	1.15	1.95	1.14	1.27	1.15	1.26
↓ CLABSI Rate	10/1/2020 - 9/30/2021	0.000	0.430	1.261	0.744	0.789	0.365	1.279	1.073	0.873	0.912
↓ CAUTI Rate	10/1/2020 - 9/30/2021	0.000	0.441	1.043	1.302	0.660	1.122	1.078	0.386	0.812	0.915
↓ SSI COLON Surgical Site Infection Rate	10/1/2020 - 9/30/2021	0.00	1.11	2.20	3.13	2.70	4.26	4.25	2.79	1.45	2.97
↓ SSI HYST Surgical Site Infection Rate	10/1/2020 - 9/30/2021	0.00	0.00	1.45	0.99	0.98	1.30	0.93	1.04	0.59	1.04
↓ MRSA Rate	10/1/2020 - 9/30/2021	0.000	0.011	0.125	0.037	0.064	0.067	0.077	0.042	0.066	0.068
↓ CDI Rate	10/1/2020 - 9/30/2021	0.000	0.174	0.174	0.324	0.322	0.345	0.211	0.314	0.262	0.279
↑ SMB: Sepsis Management Bundle	10/1/2020 - 9/30/2021	79.0%	57.0%	55.0%	77.3%	57.2%	13.3%	49.7%	71.1%	55.9%	59.1%


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CAH- Critical Access Hospital

-- insufficient cases or does not apply

System Comparison FY22 Report

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Survey of Patient's Experience												
↑	Patients who reported that their nurses "Always" communicated well	10/1/2020 - 9/30/2021	87.0%	80.0%	78.5%	81.1%	79.4%	80.8%	79.9%	78.5%	80.6%	79.8%
↓	Patients who reported that their nurses "Usually" communicated well	10/1/2020 - 9/30/2021	11.0%	15.0%	15.8%	15.5%	16.2%	16.0%	16.1%	16.6%	16.3%	16.1%
↓	Patients who reported that their nurses "Sometimes" or "Never" communicated well	10/1/2020 - 9/30/2021	2.0%	5.0%	5.7%	3.5%	4.3%	3.2%	4.0%	4.9%	3.1%	4.1%
↑	Patients who reported that their doctors "Always" communicated well	10/1/2020 - 9/30/2021	88.0%	80.0%	79.2%	80.5%	79.8%	80.8%	78.3%	77.9%	78.9%	79.3%
↓	Patients who reported that their doctors "Usually" communicated well	10/1/2020 - 9/30/2021	10.0%	15.0%	14.8%	15.6%	15.7%	15.3%	16.6%	16.2%	16.5%	15.8%
↓	Patients who reported that their doctors "Sometimes" or "Never" communicated well	10/1/2020 - 9/30/2021	2.0%	5.0%	6.1%	3.8%	4.6%	3.8%	5.1%	5.9%	4.6%	4.8%
↑	Patients who reported that they "Always" received help as soon as they wanted	10/1/2020 - 9/30/2021	80.0%	67.0%	65.8%	65.2%	62.1%	64.7%	64.1%	65.2%	63.1%	64.3%
↓	Patients who reported that they "Usually" received help as soon as they wanted	10/1/2020 - 9/30/2021	16.0%	23.0%	23.1%	26.4%	27.4%	25.8%	25.6%	24.8%	27.3%	25.8%
↓	Patients who reported that they "Sometimes" or "Never" received help as soon as they wanted	10/1/2020 - 9/30/2021	4.0%	10.0%	11.1%	8.4%	10.4%	9.5%	10.2%	10.1%	9.6%	9.9%
↑	Patients who reported that staff "Always" explained about medicines before giving it to them	10/1/2020 - 9/30/2021	73.0%	63.0%	61.9%	62.9%	59.6%	62.0%	61.2%	59.9%	62.0%	61.4%
↓	Patients who reported that staff "Usually" explained about medicines before giving it to them	10/1/2020 - 9/30/2021	16.0%	18.0%	17.5%	19.2%	18.6%	19.2%	19.0%	18.6%	19.3%	18.8%
↓	Patients who reported that staff "Sometimes" or "Never" explained about medicines before giving it to them	10/1/2020 - 9/30/2021	11.0%	19.0%	20.6%	17.8%	21.9%	18.8%	19.8%	21.4%	18.7%	19.9%
↑	Patients who reported that their room and bathroom were "Always" clean	10/1/2020 - 9/30/2021	83.0%	73.0%	70.6%	73.8%	70.8%	75.5%	70.0%	71.3%	72.8%	72.1%
↓	Patients who reported that their room and bathroom were "Usually" clean	10/1/2020 - 9/30/2021	13.0%	18.0%	17.3%	18.7%	19.1%	17.0%	19.1%	18.9%	19.7%	18.5%
↓	Patients who reported that their room and bathroom were "Sometimes" or "Never" clean	10/1/2020 - 9/30/2021	4.0%	9.0%	12.2%	7.5%	10.1%	7.5%	11.0%	9.8%	7.5%	9.4%
↑	Patients who reported that the area around their room was "Always" quiet at night	10/1/2020 - 9/30/2021	75.0%	63.0%	62.2%	61.9%	61.0%	62.0%	58.9%	66.5%	60.6%	61.9%
↓	Patients who reported that the area around their room was "Usually" quiet at night	10/1/2020 - 9/30/2021	22.0%	27.0%	27.8%	29.7%	30.8%	29.8%	31.0%	25.6%	30.5%	29.3%
↓	Patients who reported that the area around their room was "Sometimes" or "Never" quiet at night	10/1/2020 - 9/30/2021	3.0%	10.0%	10.1%	8.4%	8.2%	8.2%	10.1%	7.8%	8.9%	8.8%


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CAH- Critical Access Hospital

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			Top 10% in the Nation	National Average	Ballad Health	Aurora	Baptist Health	Carilion	Mercy Health	Texas Health	Unity Point	Peer Group
⬆	Patients who reported that YES, they were given information about what to do during their recovery at home	10/1/2020 - 9/30/2021	91.0%	86.0%	85.4%	89.8%	88.1%	86.7%	87.3%	86.2%	89.1%	87.5%
⬇	Patients who reported that NO, they were not given information about what to do during their recovery at home	10/1/2020 - 9/30/2021	9.0%	14.0%	14.6%	10.2%	11.9%	13.3%	12.7%	13.8%	10.9%	12.5%
⬆	Patients who "Strongly Agree" they understood their care when they left the hospital	10/1/2020 - 9/30/2021	61.0%	52.0%	49.9%	54.5%	52.4%	49.8%	50.7%	52.4%	52.7%	51.8%
⬇	Patients who "Agree" they understood their care when they left the hospital	10/1/2020 - 9/30/2021	36.0%	42.0%	44.0%	40.8%	41.9%	45.3%	43.7%	40.8%	42.6%	42.7%
⬇	Patients who "Disagree" or "Strongly Disagree" they understood their care when they left the hospital	10/1/2020 - 9/30/2021	3.0%	6.0%	6.1%	4.7%	5.7%	4.8%	5.6%	6.8%	4.6%	5.5%
⬆	Patients who gave their hospital a rating of 9 or 10 on a scale from 0 (lowest) to 10 (highest)	10/1/2020 - 9/30/2021	84.0%	72.0%	67.3%	74.0%	73.8%	72.8%	72.0%	75.1%	72.7%	72.5%
⬇	Patients who gave their hospital a rating of 7 or 8 on a scale from 0 (lowest) to 10 (highest)	10/1/2020 - 9/30/2021	13.0%	20.0%	21.3%	19.2%	19.3%	19.7%	19.8%	17.0%	20.1%	19.5%
⬇	Patients who gave their hospital a rating of 6 or lower on a scale from 0 (lowest) to 10 (highest)	10/1/2020 - 9/30/2021	3.0%	8.0%	11.5%	6.8%	6.9%	7.5%	8.2%	7.9%	7.2%	8.0%
⬆	Patients who reported YES, they would definitely recommend the hospital	10/1/2020 - 9/30/2021	83.0%	71.0%	68.4%	71.8%	72.8%	72.2%	68.3%	74.8%	70.4%	71.2%
⬇	Patients who reported YES, they would probably recommend the hospital	10/1/2020 - 9/30/2021	15.0%	23.0%	24.3%	23.7%	22.8%	23.5%	26.1%	19.9%	25.1%	23.6%
⬇	Patients who reported NO, they would probably not or definitely not recommend the hospital	10/1/2020 - 9/30/2021	2.0%	6.0%	7.3%	4.5%	4.4%	4.3%	5.6%	5.3%	4.4%	5.1%
Colonoscopy Followup %												
⬆	OP29 Avg Risk Polyp Surveillance*	1/1/2020 - 12/31/2020	100.0%	90.0%	89.1%	98.3%	91.9%	96.0%	94.0%	91.7%	92.6%	93.8%
⬆	OP30 High risk Polyp Surveillance	RETIRED	--	--	--	--	--	--	--	--	--	--
Stroke Care %												
⬆	STK4 Thrombolytic Therapy	RETIRED	--	--	--	--	--	--	--	--	--	--
Heart Attack												
⬆	OP2 Fibrinolytic Therapy 30 minutes	RETIRED	--	--	--	--	--	--	--	--	--	--
⬇	OP3b Median Time to Transfer AMI	RETIRED	--	--	--	--	--	--	--	--	--	--


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↓ OP4 Aspirin at Arrival AMI Chest Pain	RETIRED	--	--	--	--	--	--	--	--	--	--	--
↓ OP5 Median Time to ECG AMI and Chest Pain	RETIRED	--	--	--	--	--	--	--	--	--	--	--

Emergency Department Throughput

↓ Median Time from ED Arrival to Transport for Admitted Patients (ED1)	RETIRED	--	--	--	--	--	--	--	--	--	--	--
↓ ED2b ED Decision to Transport	RETIRED	--	--	--	--	--	--	--	--	--	--	--
↓ OP18b Avg time ED arrival to discharge	10/1/2020 - 9/30/2021	100.0	155.0	157.8	147.5	192.6	200.7	151.3	163.1	143.5	159.1	
↓ OP20 Door to Diagnostic Evaluation	RETIRED	--	--	--	--	--	--	--	--	--	--	--
↓ OP21 Time to pain medication for long bone fractures	RETIRED	--	--	--	--	--	--	--	--	--	--	--
↓ OP22 Left without being seen*	1/1/2020 - 12/31/2020	0.00	2.00	1.27	0.62	2.11	2.50	1.10	2.63	1.40	1.65	
↑ OP-23 Head CT results	10/1/2020 - 9/30/2021	93.0%	71.0%	70.2%	73.3%	66.5%	16.0%	57.3%	68.3%	72.6%	64.8%	

Preventive Care %

↑ IMM-3 Healthcare workers given influenza vaccination	10/1/2020 - 3/31/2021	99.0%	86.0%	98.4%	96.8%	92.8%	97.8%	74.8%	84.1%	86.7%	86.4%	
↑ IMM-2 Influenza immunization	10/1/2020 - 3/31/2021	100.0%	79.0%	90.5%	--	78.0%	86.0%	80.5%	98.5%	87.5%	86.6%	

Blood Clot Prevention/Treatment

↓ VTE5 Warfarin Therapy at Discharge - Voluntary Reporting	RETIRED	--	--	--	--	--	--	--	--	--	--	--
↓ VTE6 HAC VTE - Retired	RETIRED	--	--	--	--	--	--	--	--	--	--	--


Pregnancy and Delivery Care %

↓ PC-01 Elective Delivery	10/1/2020 - 9/30/2021	0.0%	2.0%	2.6%	0.3%	1.8%	1.5%	2.5%	3.2%	1.5%	1.9%	
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Surgical Complications Rate

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↓ Hip and Knee Complications*	4/1/2018-3/31/2021		0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
↓ PSI4SURG COMP Death rate among surgical patients with serious treatable complications	7/1/2018 - 12/31/2019		137.4	159.0	173.6	149.7	169.0	212.7	147.5	167.3	173.5	170.5
↓ PSI90 Complications / patient safety for selected indicators	7/1/2018 - 12/31/2019		0.83	1.00	0.97	1.04	0.96	0.99	0.90	0.92	0.95	0.96

Readmissions 30 Days Rate%

↓ READM30 AMI Acute myocardial infarction (AMI) 30day readmission rate*	7/1/2018-6/30/2021		13.9%	15.0%	15.8%	14.4%	14.9%	14.2%	15.4%	15.0%	15.1%	15.0%
↓ READM30 CABG Coronary artery bypass graft (CABG) surgery 30day readmission rate*	7/1/2018-6/30/2021		10.5%	11.9%	12.2%	11.6%	11.7%	10.6%	12.5%	11.7%	10.7%	11.6%
↓ READM30 COPD Chronic obstructive pulmonary disease 30day readmission rate*	7/1/2018-6/30/2021		18.6%	19.8%	19.7%	19.5%	19.5%	19.5%	20.0%	19.7%	19.9%	19.7%
↓ READM30 HIPKNEE 30day readmission rate following elective THA / TKA*	7/1/2018-6/30/2021		3.5%	4.1%	4.3%	4.1%	4.1%	3.5%	4.2%	4.1%	4.0%	4.0%
↓ READM30HF Heart Failure 30Day readmissions rate*	7/1/2018-6/30/2021		19.6%	21.3%	22.4%	20.2%	20.6%	20.9%	21.3%	21.2%	20.7%	21.0%
↓ READM30PN Pneumonia 30day readmission rate++	7/1/2018-6/30/2021		--	--	--	--	--	--	--	--	--	--
↓ READM30 HOSPWIDE 30day hospitalwide allcause unplanned readmission	7/1/2020 - 6/30/2021		14.0%	15.0%	15.6%	14.2%	14.4%	14.3%	15.3%	14.5%	14.0%	16.6%

Mortality 30 Days Death Rate %

↓ MORT30AMI Acute myocardial infarction (AMI) 30day mortality rate*	7/1/2018-6/30/2021		11.1%	12.4%	13.1%	12.1%	13.2%	12.3%	12.3%	12.3%	12.6%	12.5%
↓ MORT30 CABG Coronary artery bypass graft surgery 30day mortality rate*	7/1/2018-6/30/2021		2.2%	2.9%	3.5%	2.6%	2.7%	2.7%	3.6%	3.2%	3.5%	3.1%
↓ MORT30 COPD 30day mortality rate COPD patients*	7/1/2018-6/30/2021		7.1%	8.4%	8.9%	8.6%	9.1%	7.8%	8.2%	8.3%	9.1%	8.6%
↓ MORT30HF Heart failure 30day mortality rate*	7/1/2018-6/30/2021		9.2%	11.3%	12.7%	11.6%	12.3%	12.6%	10.7%	11.5%	12.2%	11.9%
↓ MORT30PN Pneumonia 30day mortality rate++	7/1/2018-6/30/2021		--	--	--	--	--	--	--	--	--	--
↓ MORT30STK Stroke 30day mortality rate*	7/1/2018-6/30/2021		11.4%	13.6%	15.1%	12.8%	14.1%	16.4%	13.5%	13.5%	14.6%	14.3%

Use of Medical Imaging Outpatient


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	OP-8 MRI Lumbar Spine for Low Back Pain	7/1/2020 - 6/30/2021	0.37	0.45	0.53	0.45	0.44	0.46	0.42	0.53	0.53	0.48
	OP-10 Abdomen CT Use of Contrast Material	7/1/2019 - 12/31/2019	0.30	0.06	0.05	0.12	0.05	0.05	0.04	0.05	0.05	0.06
	OP-13 Outpatients who got cardiac imaging stress tests before low-risk outpatient surgery	7/1/2020 - 6/30/2021	1.30	0.04	0.04	0.04	0.03	0.02	0.04	0.04	0.04	0.03

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Measure set	Data sources
Timely and effective care: sepsis, cancer, colonoscopy follow-up, emergency department throughput, preventative care, pregnancy and delivery care	<p>Data submitted by hospitals to CMS' Clinical Data Warehouse through the CMS Abstraction and Reporting Tool (CART) – Opens in a new window External Link icon or vendors</p> <p>Clinical Quality Measures are reviewed and monitored through special clinical studies, Joint Commission facility reviews, and Health Plan performance oversight.</p>
Timely and effective care: healthcare worker influenza vaccination	The Centers for Disease Control and Prevention (CDC) collects data from hospitals via the National Healthcare Safety Network (NHSN).
Timely and effective care: use of medical imaging	Medicare enrollment and claims data
Surgical complications, death rates, and unplanned hospital visits	Medicare enrollment and claims data
Complications: infections	The Centers for Disease Control and Prevention (CDC) collects data from hospitals via the National Healthcare Safety Network (NHSN)
Psychiatric unit services	Medicare claims data and psychiatric hospital and psychiatric unit chart data
Patients' survey	Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey conducted by hospitals.
Medicare payment	Medicare enrollment and claims data

Source: Hospital Compare July 2021