2024 Application Summary for John M. Eisenberg Patient Safety and Quality Award – National Level Achievement

CommonSpirit Health: Innovative Approach to Achieving and Sustaining Clinical Excellence

Executive Summary

CommonSpirit Health (CSH) is one of the largest nonprofit health systems in the U.S., providing care to 20 million patients in 158 hospitals and over 1,000 care sites across 24 states. Improvement on this scale requires an innovative and effective approach; as such CSH has developed an 8-step quality improvement model, adopting principles from improvement science, that provides a comprehensive framework for achieving impactful results. Utilizing this standardized improvement approach, CSH has accelerated the documented 17 year lag for new evidence to translate into clinical practice, achieving topquartile performance nationally across a wide array of quality measures and multiple clinical areas. Reduced harm and improved quality have contributed to a substantial reduction in the overall



organization-wide, risk-adjusted hospital mortality declining from 0.93 in 2021 (72nd percentile in a national database) to 0.64 (34th percentile) in YTD 2024 translating to thousands of patient lives saved each year. Specific projects that contributed to the overall reduction in mortality using the CSH 8-step model for improvement include work on heart failure mortality, perinatal hypertension and hospital-acquired infections.

Describe why the focus area for your initiative is/was important for patient safety and quality.

Hospital mortality is one of the "Big Dot" measures used by CSH to better understand performance across a number of clinical services.

Cardiovascular disease is the leading cause of death globally and the prevalence of Heart Failure (HF) continues to rise. In 2022, the ACC, the AHA and the Heart Failure Society of America updated HF guidelines, providing recommendations for prevention, diagnosis and treatment. Rapid implementation of these recommendations was essential to mortality reduction efforts.

Hypertensive disorders of pregnancy constitute one of the leading causes of perinatal mortality and studies have shown that suboptimal treatment of severe hypertension is linked with adverse maternal outcomes. Scaling evidence-based practices, reducing variation and engaging the community are key to improving the outcomes of hypertensive disorders of pregnancy.

Catheter Associated Urinary Tract Infections (CAUTI) have been associated with increased morbidity and mortality. In addition, bacteriuria commonly leads to unnecessary antimicrobial use and urinary drainage systems are often reservoirs for multi-drug-resistant bacteria. Standardized protocols for managing catheter use are essential to preventing avoidable adverse outcomes.

Describe how the problem was identified within your setting/organization.

Using a benchmarking database, CSH compares performance in a number of measures including hospital observed to expected (O:E) mortality. Opportunities for improvement in mortality are identified and prioritized using a robust set of criteria, i.e., improving care for the underserved, innovations, reducing unjustified variation in practice, and new evidence-based care guidelines. With HF mortality, CSH determined the risk-adjusted O:E mortality rate for HF was higher than the national average. Additionally, the release of the new 2022 guidelines was a clear prompt for CSH to apply its proven improvement science approach to accelerate the documented lag for new evidence to become ingrained into clinical practice.

Adherence with the system-wide maternal hypertension treatment bundle was also identified as an opportunity. Within CSH, bundle adherence rates by facility type at the outset of program activities was over 30% higher for urban maternity centers as compared to the rural maternity centers.

Also, CSH identified a key opportunity to address a lack of access to indwelling catheter alternatives and bladder scanners which was a barrier to implementation of the system Bladder Management protocol aimed at reducing CAUTI.

Explain how the project/initiative was implemented.

Once opportunities are identified, Step 2 entails establishing clear goals. Improvement goals are set at the national level and cascaded to regions, markets and hospitals. To establish these goals, CSH utilizes a number of benchmarking databases; when no national benchmark exists, CSH leverages its size to develop internal benchmarks.

Step 3 Determine Clinical Governance. To guide HF mortality reduction, CSH established a multilevel governance structure. National clinical service line leaders led the initiative, forming a steering committee which developed clinical decision support tools, education and communication pathways. A Quality Improvement Collaborative (QIC) with over 1000 participants was established along with regional and hospital-based quality improvement teams. The QIC focused on expert guest speakers and best practice sharing, while the regional and facility groups emphasized accountability and process standardization.

Step 4 Evidence-based strategies. A comprehensive literature review is completed for all measures. Part of the rationale for selecting HF mortality as a measure was the recently released 2022 AHA Guidelines which drove a number of the key clinical strategies. A 3 element bundle of interventions for women experiencing hypertensive crisis was implemented across 66 maternity hospitals. Bundle element data was collected and tracked using an internal benchmarking system.

Step 5 Toolkits and Resources. The CSH toolkit standard includes an Introduction, Measure Definition, Champion Role description, Key Strategies for Success, Resource links and an interactive Gap Analysis.

Step 6 Tests of Change. Improvement science concepts and tools from well-established Quality Improvement models were applied to improvement opportunities. An interdisciplinary team addressed CAUTI reduction by reviewing products, coordinating facility based PDSA trials and determining a system standard for male and female alternative products. Step 7 Performance Feedback. Supporting all improvement work is robust reporting and analytics (Pg 6 attached). Additionally, provider-level reporting facilitated targeted interventions.

Step 8 Accountability. CSH has a robust accountability system for performance goals, utilizing a cascading Monthly Operational Review (MOR) with weekly reviews at the local level informing the hospital, followed by regional and national MORs. This process ensures that lagging performance is addressed and supported. Pg 3 Attached

Describe your achievements and improved state.

Overall Mortality across all hospitals has declined 30% over the past 3 years. Contributing to this result is a 42% reduction in HF mortality corresponding to the national 86th percentile, Sepsis mortality has maintained a low O:E that compares with the top 15% of hospitals within the comparative database and Percutaneous Coronary mortality that was at the 47th percentile for the 12 months ending 3/31/23 and is now at the 67th percentile for the 12 months ending 3/31/24 in the ACC database. (Pg 4 attached)

Systematic work on Maternal Hypertension demonstrated statistically significant decreases in eclampsia (p<0.01) and improved timely treatment for women of color (p<0.001). These achievements earned CSH the Department of Health and Human Services Office on Women's Health with the Hypertension Innovator Award in April 2023 and in 2024.

Efforts over the past 3 years have contributed to the prevention of over 2,700 harm events moving CSH from worse than the national median to the top one-third or better of national performance (Pg 5 attached).

Overall, these improvements represent over 409,130 lives impacted over a 3 year period and a substantial decrease in overall mortality (Pgs 1-2 attached).

Describe how the project/initiative represents an innovation or novel approach.

Woven throughout all improvement science work is a focus on diversity, equity and inclusion. While there is well documented evidence of disparities in care, there is not an agreed upon standard for Health Equity Quality Measurement. Using comprehensive demographic data (e.g. ethnicity, race, gender, age and language) and the Agency for Healthcare Research and Quality model for statistical determination of disparities, CSH's online Health Equity dashboard provides robust information on disparities across a broad range of acute and ambulatory measures (Pg 7 attached). Analysis reveals that statistically significant differences between demographic groups for any given outcome vary by geographies. For example, with HF there was a notable (18%) performance gap between patients with high and low social vulnerability indices. At the end of the fiscal year, the gap was reduced to 5%. CSH will continue to focus on the metric disparity differences across communities.

Another key CSH innovation is the Virtually Integrated Care (VIC) model, which leverages virtual technology to enhance bedside care and improve outcomes. The VIC model utilizes an experienced virtual nurse seamlessly integrated into the care team, providing support through mentoring new staff, unburdening workload, helping to manage transitions of care and cultivating interdisciplinary collaborative patient care. The Virtual Care Delivery Platform (VCDP), a proprietary software application designed in collaboration with IT, Nursing, and bedside clinical teams, powers the VIC

model. The technology includes in-room hardware with a touchscreen computer, pan-tilt-zoom camera, and speaker/microphone, a patient-facing touchscreen with a virtual nurse call bell, hardware status indicators, and text communication capabilities enabling virtual nurse connection to each patient room. VIC nurses proactively coordinate with care coordination and ambulatory personnel to ensure timely discharge, appropriate patient placement, potential transportation needs, necessary medications, home care needs, and follow-up appointments. The VIC model has demonstrated success in markets with increased staff engagement, improvement in patient experience, and patient safety outcomes. This process has contributed to a reduction in urinary catheter days and CAUTI, as well as a reduction in patient falls. Nursing turnover for units that have implemented VIC is down 62% on average and length of stay is down 13%.

How do you monitor that the improvement is sustained?

To monitor ongoing performance across all measures and care settings, CommonSpirit has developed the Clinical Quality Data Repository (CQDR). The CQDR is a data hub and technology suite that orchestrates the collection and normalization of clinical data from over 40 different sources, including 17 different EHR instances, each documenting patient care in its own way. To normalize data collection into nationally tracked clinical goals, business rules are applied to standardize individual EHR documentation nuances. The primary focus of the CQDR is to support the comprehensive suite of quality and patient safety measures, analytics and standard reports. Via a robust Clinical Scorecard, the CQDR offers dynamic reports, dashboards, and ad hoc analytics to over 1,000 users, with an average of 4,700 views per month. These users, ranging from clinical providers at the bedside to Executive Leadership Team members, leverage the data to monitor progress towards goals, identify areas for improvement and ensure sustained improvement. Integrated into this reporting platform are hundreds of individual analytic pages (Pg 6 attached.) The scorecard also has defined sections for focus measures, maintain the gain measures and pipeline measures.

Describe how the project/initiative has been or could be replicated across departments or organizations. Share experiences or suggestions on how others could implement.

The key to CSH's ability to consistently scale improvement across multiple measures, many geographic regions, diverse populations and care settings lies in its standardized 8 step improvement science approach. These steps are systematic, well-defined and able to be replicated across large organizations. (Pg 2 attached) It is essential to ensure full alignment, transparency and communication between Enterprise wide governance, national, region and local hospital leadership. Key stakeholders at all levels should be involved very early in the goal-setting process to ensure awareness and engagement.

Clinical leadership should be established for each priority with responsibility for co-leading multidisciplinary improvement teams, regularly reviewing and sharing data to identify opportunities for improvement, providing input and leadership for implementation, monitoring and evaluating deployed improvement strategies, coaching and educating providers and staff and celebrating successes. Operational Reviews with senior and regional leadership that are cascaded to hospital leadership is essential for accountability alignment. Regional and local clinical improvement teams are important vehicles to drive change and implement best practices.

Our Excellence: Quality and Patient Safety

LIVES SAVED **Overall**, the efforts of the organization Saved 5.969 lives utilizing have resulted in evidence-based care for improved care for patients with Sepsis and Heart Failure over 409,130 patients. **AVOIDED HARM Surgical Complications** Hospital-Acquired **Hospital-Acquired** Infections **Pressure Injuries** 363 fewer peri- and Prevented 122 hospital-Avoided harm with 2,246 post-operative complications fewer CAUTIS, CLABSIS acquired pressure injuries, of sepsis, hematoma/ and C-diff infections avoiding painful hemorrhage, DVT or skin breakdown respiratory failure



Depression Screening

Ensured potentially life-saving depression screening for **133,934 more** patients

IMPROVED HEALTH



Annual Wellness Reduced risk for 149,588 more patients by ensuring primary care visits focused on preventive care

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Disease Management

Achieved and maintaining top decile performance in Hypertension and Disease Management resulting in better care for **116,908** patients



Overall Mortality Reduction

Control Chart Acute Care - Risk-adjusted Mortality, O/E Ratio (v6.0)





Approach to Performance Improvement

Identify Opportunities	Evidence-based Strategies	Performance Feedback
Review all measures in the 2026 goals Collaborative process with clinical and operational leadership .	 o Use up to date literature o Call upon content expertise throughout the enterprise o Leverage size and scope 	 Detailed, patient and provider level detail for each metric Performance information on best practice strategies (through EMR enhancements and reporting) Reporting and Analytics tools that move from data
Establish Baselines and Goals	Toolkits and Resources	to information to knowledge to insights that lead to real change.
Robust, reliable, valid data source National benchmarks with minimum expectations	 Ensure easy to access templates and policies Address opportunities within electronic health record to standardize care 	Performance Dashboards
Create/Determine Clinical Governance	Performance Improvement Approach	0.52 Dendi bare Dendi bare
 e Ensure Clinical Leadership/Clinical Institute e Establish process for strategy deployment 	 Consistent gap analysis Optimization of teams Model that incorporates LEAN, PDSA and Six Sigma improvement tools 	

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Engagement and Accountability

- $\checkmark\,$ Facility, Division and National committees and review process.
- $\checkmark\,$ Prioritize the CommonSpirit Board of Trustees Annual and Strategic Goals



Acute and Ambulatory Quality Measures Trended Performance (Percentiles^)

Measure	FY21	FY22	FY23	FY24	Trend
Sepsis O:E Mortality	*66 th	72 nd	83 rd	87 th	7
Percutaneous Coronary Intervention Risk-Stratified Mortality	34 th	45 th	6] st	65 th	7
Heart Failure O:E Mortality			*48 th	86 th	7
Maternal Hypertension Bundle	*62%	79%			7
7 Day Readmissions		50 th	4] st	37 th	Ŕ
Diabetes (HgbA1C) Control	67 th	71 st	89 th	89 th	7
Hypertension Management	67 th	72 nd	93rd	94 th	7
ACO Annual Wellness Screening	35 th	47 th	66 th	66 th	7
Depression Screening			62%	77%	7

^Measured and reported as a percentage*Represents prior calendar year performance.



Patient Safety Measures Trended Performance (Percentiles)

Measure	FY21	FY22	FY23	FY24	Trend
Catheter Associated Urinary Tract Infections	38 th	54 th	7]st	79 th	7
Clostridioides difficile Infections	64th	7] st	63 rd	70 th	7
Central Line Associated Blood Stream Infections	38 th	38 th	61st	75th	7
Hospital Acquired Pressure Injury	37 th	44 th	56 th	52 nd	7
Surgical Site Infections	*59 th	61 st	56 th	56 th	⇔
Perioperative Events (PSI 9,11, 12, 13 composite	*67 th	70 th	78 th	74 th	7

*Represents prior calendar year performance.



Clinical Scorecard dashboard displays all national goals compared to their established targets in one snapshot.

CommonSpirit

Performance matrix to view market and facility performance status and highlights focus facilities for targeted improvement opportunities

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Beart Failure Mortality performance page evaluating market and facility comparative performance, volume as well as cumulative and

Patient detail to support focused improvement efforts by hospital provider and patient pursuit lists

Woodland Healthcare

39 🕥

51 🕑

98

80

106 46 48 51

3 279

54 57 59 94



Total

248 125.13

9.87 Not Small N

177.77 Not Small N

CommonSpirit National Quality Goals



Highlights disparities in ethnicityrace groups for 7-day readmissions against a highperforming reference group including trends and comparisons to local community data

Map of readmitted patients by zip code and Social Vulnerability Index to highlight areas of greater social needs

Highlights disparities of age groups screened for depression against a high-performing reference age group

Comprehensive table of health disparity data and trends across multiple markets and measures

CommonSpirit Health Equity & Quality of Care



