2022 VALUE REPORT
Reimagining Care Delivery
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Message from Jeffrey Flaks, Hartford HealthCare President & Chief Executive Officer

We ensure that safety and quality are part of HHC’s culture

Quality and safety are not simply outcomes. They are part of our culture — the manner with which we approach our work combined with the rigor of continuously improving. Whether people come to us for a lifesaving procedure or a routine medical need, they must first trust us. And we must earn that trust every day.

At Hartford HealthCare (HHC), we are proud of our safety journey. Yet we understand there is always room to grow — and we will never be satisfied with excellence when there is an opportunity to do even better.

It is gratifying that our efforts regularly earn national recognition. Independent ratings organizations like the Leapfrog Group, Healthgrades, U.S. News & World Report, The Joint Commission (TJC) and others use clinical outcomes data to verify and recognize our results. But accolades are not why we do this hard work every day. We know that safety and quality are part of our promise to everyone we care for.

In these pages, you will see examples of HHC’s ongoing efforts:

- The ways we measure performance and use data to guide decision-making
- How we are using innovative approaches and technologies to improve care and outcomes
- Our attention to the high-reliability principles of transparency, communication, accountability, continuous learning and improvement to drive excellence

On behalf of my 37,000 colleagues at HHC, thank you for your interest in learning more about our quality and safety journey. It is our ongoing commitment to consistently provide the best, most advanced care with a great experience to those who rely on us.

Sincerely,

Jeffrey A. Flaks
President and Chief Executive Officer,
Hartford HealthCare
Transforming care delivery to drive leading outcomes

We endeavor to be widely recognized for clinical excellence. Transformation by way of reimagined care delivery is going to get us there. In Clinical Affairs, our value proposition is driven by several core pillars of transformation – innovation, quality & safety, clinical expertise, and care logistics, all contributing to care redesigned or reimagined. Such transformative care delivery as outlined in this report is what distinguishes HHC for leading performance and value, especially in an ever-changing landscape most recently characterized by unprecedented challenges.

Focusing on what matters most, the pillars of transformation reimagine care delivery to enhance access, affordability, equity and excellence. We utilize information and technology to drive quality improvement. We deliver the safest, highest quality, most effective, efficient, timely, patient-centered and equitable care. We train the next generation of thought leaders and create new knowledge and care solutions through a growing research and clinical trials portfolio. And we provide the right care, at the right time, in the right place, with the right resources to maximize clinical and system efficiencies and improve the health and healing of the communities we serve.

We demonstrate superior value of care through a balanced reduction of clinical and operational variation and cost with improved outcomes. Our robust Clinical Care Redesign initiatives support HHC in realizing the vision to be “most trusted for personalized, coordinated care,” by reimagining the way clinical teams deliver care.

The programs, initiatives and achievements outlined in this report reflect 2022 activity and performance, and exemplify how HHC defines “value” in new and original ways. The 2022 Value Report highlights HHC’s approach to healthcare transformation along with its best-in-class commitment to continuous improvement, led by a shared mission to deliver superior care and achieve better outcomes for the communities HHC is privileged to serve.

Sincerely,

[Signature]

Ajay Kumar, MD, MBA
Executive Vice President & Chief Clinical Officer,
Hartford HealthCare
PILLARS OF TRANSFORMATION
**Quality & Safety**

A critical component of healthcare quality transformation is the safety culture imperative.

The March 2022 conviction of a former Vanderbilt University Medical Center nurse for criminally negligent homicide due to a fatal medication error represented an alarming wakeup call and momentary stutter step in progress for patient safety. In immediate response to this nation-gripping event, HHC acknowledged the tragic loss of life, a result of many process failures, while simultaneously reinforcing support for our clinical workforce. As the landmark Institute of Medicine report ‘To Err Is Human’ concluded — we believe we should not punish our way to safer medical practices. We must encourage all clinicians to report errors so we can identify mitigation strategies to ensure they don’t happen again.

In concurrence with this thought leadership, a National Institute of Health editorial, *What is “quality improvement” and how can it transform healthcare?*, reported that healthcare will not realize its full potential unless change-making becomes an intrinsic part of everyone’s job, every day, in all parts of the system. It goes on to say, “improvement involves a substantial shift in our idea of the work of healthcare, a challenging task that can benefit from the use of a wide variety of tools and methods” – many of which HHC employs each and every day for continuous tests of change and subsequent proven improvement.

We can only prevent future mistakes by reporting errors and near-misses transparently and in real time; then by putting appropriate systems and processes in place. These solutions can include plans to identify individual and organizational gaps in processes, additional education and training, all the while reinforcing accountability.

Transformation in quality and safety includes our work to reduce variation in best practice across the health system. The How HHC Works (H3W) Operating Model is founded on leadership behaviors and encompasses an organization-wide commitment to high-reliability principles. Lean daily management and standard work supported by daily huddles and visual management boards are pivotal to these efforts. HHC’s improvement approach, as follows, guides overall health system transformation.

1) [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2464920/](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2464920/)
Improvement Approach

1. Establish aims and guiding principles
2. Align with organizational mission, vision, values and operating model
3. Conduct internal assessment of resources and capabilities
4. Conduct environmental scan; i.e., local, regional, national assessment
5. Analyze organizational practice and performance
6. Develop strategic priorities and roadmap

### Quality and Safety 3-Year Strategic Plan

<table>
<thead>
<tr>
<th>FY2021</th>
<th>FY2022</th>
<th>FY2023</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Leadership for Improvement</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Maximize leadership and governance bodies’ ability to influence 
  sustainability of a strong culture of safety | | |
| Leadership and Board education in quality & safety key concepts and initiatives | | |
| Optimize HHC operating model to drive transparency, safety, improvement and culture | | |
| Safety, equity, quality, data literacy, skills/competency assessment and improvement training | | |
| Ensure new candidate best fit with safety culture | | |
| Transparency in sharing of outcomes and performance metrics | | |
| Grow regional/national presence and reputation | | |
| | | Expand the voice of patient and family advisors |
| **Culture and Environment** | | |
| Optimize the culture of Hartford Healthcare to be just and fair based upon high reliability principles | | |
| Systemwide MRC training program for all HHC employees | | |
| Prioritize workforce harm through partnering with the Wellness department | | |
| Regularly assess culture of safety by leveraging standard processes to ensure sustainable growth and maturity of the organization | | |
| Promote transparency to improve safety outcomes, culture and learnings | | |
| Embed the training program in the new employee orientation | | |
| | | |
| **Data Infrastructure & Management** | | |
| Optimize Hartford HealthCare’s performance in quality and safety through efficient data mining, visualization and analytics | | |
| Reduce variation and improve efficiencies in data abstraction/registry submission | | |
| Optimize data analytics efficiencies | | |
| | | |
| **Public Reporting** | | |
| Optimize Hartford HealthCare’s Public Reporting for Quality and Safety | | |
| Increase the Leapfrog Safety Grades for all HHC entities to As & Bs through targeting key areas of improvement | | |
| National recognition for performance through U.S. News and World Report | | |
| | | |
| **Learning Systems** | | |
| Ensure best-in-class knowledge reaches our teams to understand opportunities in the system to improve. Commit to continuous learning by strengthening internal processes that promote transparency and reliability. | | |
| Partner with Institute of Healthcare Improvement for a health equity collaboration to create and sustain an equitable health system | | |
| Engage with external learning networks such as, but not limited to, Institute of Healthcare Improvement, Connecticut Health Association, Androa Labs and Premier, to learn best practices around the quality and safety goals | | |
| Continued focus on quality and safety improvement initiatives outside of the annual improvement priorities, e.g., maternal mortality & mortality | | |
| Develop a residency program or professional growth pipeline for emerging leaders | | |

Core competencies of high-reliability, accountability, transparency, communication, agility, and continuous learning and improvement will strengthen and evolve HHC’s reputation for clinical excellence and position HHC to lead the way and serve as a model for reimagined care delivery.
Innovation

Healthcare is changing at an increasing velocity and organizations that do not innovate will be left behind. Innovation is embedded in HHC’s DNA with extraordinary resident intellectual property of employees and assets. Innovation accelerates HHC’s digital transformation through the deployment of emerging digital technologies including artificial intelligence, machine learning, enterprise cloud solutions, biometric devices, automation, simulation, 3D printing and virtual health. These technologies improve operational efficiency and care delivery, create transformative patient and provider experiences, redefine excellence in quality and safety outcomes, decrease friction to access and delivery of care, diversify revenue, reduce waste and variability and manage costs effectively.

HHC recognizes the importance of leveraging current and future technology to clinically transform and has set goals for innovation to:

- Create an efficient and frictionless healthcare innovation ecosystem and platform to accelerate ideas to market
- Catalyze a culture of innovation to attract and retain world class entrepreneurs
- Create an environment where all stakeholders extract commensurate value
- Create, preserve and enhance an alternative revenue-generating portfolio
- Economic development in Hartford and State of Connecticut
- Drive strategic imperatives

HHC is committed to precision innovation that aligns and drives HHC’s value equation to improve patient and customer experience, provide safe and high-quality care, provide more access to timely care, ensure the financial health of our organization and build a culture of health and racial equity, diversity, inclusion and belonging across our system of care.

HHC’s strong H3W leadership culture, coupled with an agile and lean-driven operating model, has a force-multiplying effect on healthcare innovation and transformation. By accelerating differentiated clinical transformation through digital health platform layers, HHC is developing the capabilities to be most trusted for personalized coordinated care. A seamless patient journey leads to clinical excellence. If technology is utilized appropriately, change can be driven exponentially and far more impressively than any social or economic change.
The value proposition of our Innovation ecosystem is strategic capital. The five pillars or guiding principles of HHC Innovation are Ecosystem, Portfolio, Governance, Communication and Continuous Learning.

The Innovation and Clinical Informatics operating model has allowed HHC to pivot from implementation to clinical transformation mode by maintaining the integrity of the patient care chain, optimizing clinical translation, collective genius workgroups and the power dynamic of work design. The HHC operating model allows clinicians and clinical business units to drive what matters most. The Informatics team meets clinicians where they are – embedded in the Regions, Institutes and Councils – to ensure support and guidance across all segments of the organization. This is the Ideation loop, where issues are discussed and potential solutions developed. By partnering closely with the clinical leaders, Informatics teams understand, support and translate real-world clinical issues and ideas into clear problem statements for action.

Once defined, the Informatics Leader moves the work effort into the Execution loop. The appropriate Collective Genius Workgroup works with the subject matter experts, Informatics, Information Technology Services (ITS) and Operations to crystalize the problem statement, clarify ambiguity and develop clear next steps to execute. Once the next steps are clear, Informatics partners with ITS to guide execution. Any ambiguity that arises is sent back to the Collective Genius Workgroup for clarity – the process is reiterated until execution is complete.

This methodology of prioritization, clear problem statements and reiteration allow for flawless execution—the move from transactional to relational transformation.
Who are HHC’s Innovation Partners?

With its Innovation Ecosystem partners, HHC has developed and applied emerging digital technologies to improve clinical outcomes and drive improved operational efficiency.

- HHC formalized its partnerships with Morningside Group and Connecticut Innovations — to accelerate the development of these organizations’ portfolio digital health companies.
- Connecticut-based Cytoveris, a Connecticut Innovations portfolio company, is working with HHC to validate its AI/ML driven technology to improve outcomes for some of the most common cancer procedures.
- Connecticut-based Wellinks, backed by Morningside Group and Connecticut Innovations, has entered into an innovation collaboration agreement with HHC to accelerate its digital health portfolio companies and achieve mutually-beneficial clinical, strategic milestones in exchange for milestone-based equity upside for HHC.
- HHC is close to completing a collaboration agreement with Connecticut-based startup, NourishedRx, a Connecticut Innovations portfolio company that participated in the Hartford Health Equity Accelerator.
- HHC joined Mayo Clinic and Jefferson Health as one of only three U.S. healthcare systems with a partnership with the Israel Innovation Authority (IIA), an agency that provides research, development and funding support for Israeli digital health startups to obtain the evidence and assistance they need to enter and be successful in markets outside of Israel. HHC is in the midst of evaluating five potential startups in our second cohort.
- HHC completed a pilot with Israel Innovation Authority-funded startup, Ibex, which offers AI-powered diagnostics for pathology. Ibex utilizes AI/ML to detect abnormalities on digital pathology slides, providing accurate, timely, personalized cancer diagnosis.
- HHC and Dimitris Bertsimas, Dean of Business Analytics at Massachusetts Institute of Technology, co-developed Holistic Hospital Optimization (H20), an analytics platform leveraging advanced analytic methods (AI/ML) to optimize hospital operational efficiency including OR block scheduling, staffing efficiency and improving length of stay.
- HHC invested in Lineus Medical, one of the initial startups from the Digital Health Accelerator CT (launched by HHC, Trinity College and Launch Hartford), and served as the pilot site to improve the product and develop data for the company’s device's successful FDA submission.
Center for Education, Simulation & Innovation

The Center for Education, Simulation and Innovation (CESI) focuses on creating novel educational programs that target specific clinical gaps identified within HHC. Traditionally, a bulk of the education within CESI has been topic-driven to support a set curriculum, such as that for a residency program. In addition, CESI has successfully partnered with stakeholders across HHC and regional clinical affiliates to deliver customized, innovative programs that address patient safety and satisfaction, care standardization, provider performance and strategic Balanced Scorecard initiatives.

In short, we are problem solvers. The following represent a few specific examples demonstrating our value.

**Sterile Technique**

HHC Medical Group identified an opportunity to improve sterile practice during in-office procedures throughout the system, impacting patient safety and quality and provider performance. CESI partnered with the Tallwood Urology & Kidney Institute to pilot a Sterile Technique training program.

CESI discovered that a medical assistant (MA) is typically responsible for preparing the treatment room, patient and surgical tray, assisting the physician during the procedure, caring for the patient postoperatively and cleaning the treatment room, including reusable surgical equipment after the procedure. Onboarding and training for this important role and associated responsibilities were inconsistent and each office had their own processes, dependent on space and physician preferences.

To address this issue, CESI partnered with the Hartford Hospital OR staff to complete an in-depth needs assessment to learn where gaps in sterile technique may occur. They also worked with physician leadership to establish standard best practice to be rolled out to each office. The workgroup created a standardized video-based learning module in the CloudCME learning platform to be completed by the MA team. After they completed the module, the MAs came to CESI for hands-on simulation to practice appropriate sterile techniques in a procedural setting.

Feedback received from the team has been extremely positive and other teams across HHC are interested in implementing the training.

**International Nursing**

In the current staffing climate, it is difficult to recruit and retain nurses. The system has partnered with Shearwater Health to address nurse staffing shortages by bringing in nurses from around the world for longer agency contracts.

Recognizing that nurse roles and responsibilities are not standardized globally, CESI worked with HHC’s nursing leadership to standardize best practices systemwide and build a customized curriculum for international nurses.

In addition to knowledge and skills application, this course focuses on communication, which was a concern directly expressed by nurses. Through simulation, the nurses are able to practice their communication skills in a safe learning environment.

The program also includes education on the additional roles in the clinical setting, such as respiratory therapy, patient care assistants, phlebotomy, etc., as these roles may not exist consistently around the world. This custom-built program is designed to help international nurses onboard more effectively and efficiently within HHC culture in CESI’s safe learning environment before caring for actual patients.

The feedback has been positive; the program has expanded from one to two days in order to incorporate more skills practice and simulation training.
Memorial Sloan Kettering

Currently, many medical schools and surgical residency programs across the country focus more on minimally-invasive and robotic techniques. Memorial Sloan Kettering Cancer Center (MSK) identified a gap in education for open surgical procedures, potentially impacting patient outcomes and provider performance, and partnered with CESI to create a customized curriculum for their urology fellows.

CESI hosted six urology fellows in June 2022 for an extensive four-day open surgical program. CESI and HHC physicians partnered to provide the fellows with an immersive surgical program, including two and a half days in the pre-clinical lab, lectures, skills training utilizing task trainers and tissue, and simulation. CESI created a customized assessment tool to establish baseline metrics and the fellows were reassessed after the four-day program with astounding results.

Due to the value of these realistic educational modules, the open surgical skills trainers developed for this program are now incorporated into the Hartford Hospital Urology Residency Program and the New England American Urology Association’s Annual Residency Conference.

Educational Playbook

Many healthcare systems around the world approach CESI for guidance on how to incorporate simulation training into clinical education. Building a state-of-the-art facility with high fidelity manikins and procedural trainers is a small piece of the puzzle and CESI has long advocated for more expansive adoption of this teaching modality.

CESI has developed The Educational Playbook – a resource developed to support medical educators and serve as a step-by-step guide to construct higher-level training programs. It provides guidance on how to complete a formal needs assessment and gap analysis, best practice for curriculum development, coaching for successful scenario debriefing and tips for data analysis and reporting. Through the system’s relationship with Quinnipiac University, CESI partnered with a software engineering class to develop an electronic intake platform to streamline the process.

By building innovative and customized curricula to address safety metrics and by expanding our ability to teach others across the HHC system and across the world how to incorporate simulation into clinical education, we hope to see a positive impact on patient safety, provider performance, risk mitigation and overall patient and employee satisfaction.

We are problem solvers who are transforming healthcare one customized program at a time.
Clinical Training & Research

HHC is committed to education and research as foundational strategic drivers of our mission and vision as they are essential ingredients to improve quality, promote growth and spark innovation.

Especially in light of heightened workforce challenges, the division of Academic Affairs is leading the charge to strengthen and grow partnerships with universities to create a sustainable workforce for years to come.

In January 2022 HHC President and CEO Jeffrey Flaks and Quinnipiac University (QU) President Judy Olian announced a unique, university-wide strategic partnership focused on building the healthcare workforce of tomorrow and growing student pipelines across a wide range of disciplines to address long-term talent needs for the state and beyond. The collaboration centers around three core areas: (1) redefining healthcare education, (2) providing the university community with high-quality, coordinated health and wellness services and (3) developing and growing the state’s workforce. This represented a model for future new and strengthened existing academic partnerships.

The presence of students in an organization is transformative as it improves medicine by fostering a spirit of curiosity, inquiry and openness to new ways of providing care. Strong and strategic relationships with university partners are essential to our ability to recruit the best of graduating medical students. HHC created a system leadership structure for Academic Affairs to ensure a strategic and coordinated approach to establishing and maintaining key academic relationships with universities such as QU, the University of Connecticut (UConn), Sacred Heart University and the Connecticut State Colleges and Universities System. These relationships ensure a pipeline of prepared and qualified students to build the next generation of healthcare workers.

Medical Education

Undergraduate (UME) and Graduate Medical Education (GME) are critical to HHC’s identity. For generations, HHC hospitals have trained medical students and residents and hosted fellowships. Hartford Hospital and The Hospital of Central Connecticut host nearly 300 residents on any given day. In 2022, HHC partnerships with the UConn School of Medicine and the Frank H. Netter School of Medicine at QU increased the number of residents and allowed expansion into other HHC hospitals such as St. Vincent’s Medical Center and Charlotte Hungerford Hospital. Over 400 HHC physicians have an academic appointment at UConn, over 100 at QU.
Research

Research is a critical element of innovation and transformation, allowing HHC to bring the latest advanced technologies and treatments to our patients. HHC investments in innovation require a strong research infrastructure and support early adoption as an essential factor in HHC’s growth.

Research conducted by our HHC clinicians continues to drive advances in clinical care. HHC research capabilities are being used to identify and address health care inequities. HHC also continues to support innovation initiatives as early stage companies partner with our organization to bring new therapies and approaches to clinical problems forward.

The HHC Health Equity Group, led by Dr. Rocco Orlando, Chief Academic Officer, continued its work to study the prevalence of disparities in our own system, the development of interventions to address the disparities and the outcome of those interventions. Understanding the importance of this work, the Hartford Hospital Medical Staff provided funding for an internal grant competition to support health equity research across the system. The eight projects below were chosen to receive funding and represent work that will be conducted in many of our Institutes and hospital programs. Additional health equity studies have led to wide distribution of findings through presentations and publications.

<table>
<thead>
<tr>
<th>Principal Investigator</th>
<th>Institute/Department</th>
<th>Project Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jared Bieniek, MD</td>
<td>Tallwood Urology and Kidney Institute</td>
<td>Racial, Ethnic and Sexual Orientation Representation in Male Sexual Dysfunction Educational Materials</td>
</tr>
<tr>
<td>Gretchen Diefenbach, PhD</td>
<td>Behavioral Health Network</td>
<td>Reducing Disparities in Suicide Prevention Treatment in Transgender People</td>
</tr>
<tr>
<td>Kent Kilbourn, PA-C</td>
<td>Ayer Neuroscience Institute</td>
<td>Utilization of a Health Corps Force to Achieve Equitable Access to Care in an Urban Comprehensive Stroke Center</td>
</tr>
<tr>
<td>Alvaro Menendez, MD</td>
<td>Cancer Institute</td>
<td>Assessing Barriers to Underrepresented Populations’ Participation in Oncology Clinical Trials</td>
</tr>
<tr>
<td>Oscar Serrano, MD</td>
<td>Transplantation</td>
<td>Evaluation of the influence of limited English proficiency on access to care for patients with liver cancer in Connecticut</td>
</tr>
<tr>
<td>Trevor Sutton, MD</td>
<td>Heart and Vascular Institute/Anesthesiology</td>
<td>Improving utilization of cardiovascular procedures by African American and Hispanic populations at HHC: A health equity initiative at the Hartford Hospital Community Health Center</td>
</tr>
<tr>
<td>Vijay Yanamadala, MD</td>
<td>Ayer Neuroscience Institute</td>
<td>The Effect of Patients’ Socioeconomic Status and Geographical Location of Spine Clinics on Spine Surgery Outcomes in the HHC System</td>
</tr>
<tr>
<td>Aiyeat Zalzala, PhD</td>
<td>Behavioral Health Network</td>
<td>Critical Reflection in Supervision: A conceptual framework for difficult conversations</td>
</tr>
</tbody>
</table>

Our research program and innovation group continue to work collaboratively to support our external partners – both established companies and start-ups. Any successful product launch requires evidence-based information that demonstrates a successful outcome. Research studies have been developed in collaboration with our clinician investigators, innovation team, and research staff. Examples include our support of a study to evaluate the use of an intravenous catheter device that decreased the need for IV reinsertion. The study conducted at Hartford Hospital was instrumental in the company receiving FDA approval to bring the device to market. Other successes have included research studies evaluating the use of artificial intelligence to screen pathology specimens for suspected cancer, and an innovative outpatient program for COPD patients which may reduce the incidence of their readmission to the hospital.
**Continuing Education**

Continuing Education is essential, as it helps ensure clinicians, including physicians, athletic trainers, dietitians, nurses, physician assistants, pharmacists, psychologists and social workers are keeping up-to-date with the latest advances in treatment and procedures. Continuing Education at HHC also supports providers in maintaining their licenses and certifications.

We have increased capabilities to provide more opportunities for on-site education and maintenance of certification for our clinical colleagues. Continuing education activity increased dramatically following the 2020 pandemic year.

*Number of Continuing Education Activities*
Care Logistics Center

The HHC Care Logistics Center (CLC) is transforming the way patients and providers access the quality services offered in our acute care hospitals. Prior to the opening of the CLC, providers were responsible for calling multiple people and departments in order to admit a patient to an HHC hospital. The NASA-style CLC created an innovative, one-stop shop which allows providers to rapidly speak to a highly-trained nurse who connects them to the necessary clinical and system resources. The CLC has quickly become the nerve center for all HHC hospitals, helping staff coordinate care, drive efficiency and improve the way patients move into and across the system.

The CLC co-locates acute care and behavioral health nurses who use physician-reviewed algorithms and decision trees to assure the patient is provided the right care, at the right time, in the right place, with the right resources to maximize clinical and system efficiencies. Patient placement and bed assignments for all admissions into HHC acute care hospitals is done in the CLC using the Epic electronic health record. The nurses act quickly, apply expert clinical judgement and help facilitate patient movement. Using Lean methodology, the standard work is broken down into sequenced, organized elements allowing patients to be placed based on specialty diagnosis and level of care. Emergency Medical Services (EMS) facilitators coordinate ground ambulance and air transportation for patients transferring into and out of the hospital, communicating in real time with our state-wide ambulance providers and LIFE STAR critical care helicopter service. The CLC patient support team coordinates bed cleaning and transport within each hospital. The unified team approach cuts across communication barriers by allowing the cohesive unit to share information in real time with the shared goal of best supporting the patient.

Using predictive and advanced analytics, capacity management dashboards have transformed patient placement allowing for real-time monitoring of expected demand, current occupancy and predictions of future occupancy across the system. State-of-the-art telecommunications and data collection software allows for immediate review of all calls for quality and safety compliance and improvement.

The transformative work of the CLC has resulted in HHC becoming well-known as a New England referral center for acutely ill patients. Physicians from across the region are turning to the HHC CLC when unable to place their patients with the right care within their own state.
Since the CLC opened its doors in October 2017, 43,460 behavioral health and acute care transfers have been accepted into HHC; 758,170 bed requests have been completed by the CLC bed managers and transfers denied into the HHC system have decreased by 58%. Fiscal year (FY) 2022 transfers into HHC increased by 996 over FY2021.

The CLC represents an innovative and transformative view of what is meant by ‘logistics,’ creating more convenience for patients, families and providers as well as more efficiencies and better outcomes for HHC and our partners. Whether monitoring patients at home, providing remote monitoring for high-risk patients or triaging in-demand resources such as MRIs and cardiograms, the HHC CLC is redesigning what it means to be a healthcare system.

### 2017V – High Level Capacity Management Metrics

<table>
<thead>
<tr>
<th>Location</th>
<th>Patients in the ED</th>
<th>Occupancy</th>
<th>Today's Expected Discharges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hartford</td>
<td>143 Total Overall</td>
<td>769 Current Census</td>
<td>125 # of Patients Today</td>
</tr>
<tr>
<td></td>
<td>39 Total Bed Requested</td>
<td>115 Current Open</td>
<td>40 / 125 # w/ DC order Today</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 Open</td>
<td>1803-11:37 AM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>39 Open</td>
<td>12 / 25 # w/o DC order Today</td>
</tr>
<tr>
<td></td>
<td></td>
<td>53 Open</td>
<td>2 Conf Sig DC Today</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40 / 125 # w/ DC order Today</td>
<td></td>
</tr>
<tr>
<td>HDOC</td>
<td>62 Total Overall</td>
<td>238 Current Census</td>
<td>70 Open</td>
</tr>
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<td>16 Total Bed Requested</td>
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<td>70 Open</td>
<td>25 # of Patients Today</td>
</tr>
<tr>
<td></td>
<td></td>
<td>125 Open</td>
<td>2 / 14 # w/o DC order Today</td>
</tr>
<tr>
<td></td>
<td></td>
<td>70 Open</td>
<td>14 # of Patients Today</td>
</tr>
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<td>1803-11:37 AM</td>
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<tr>
<td>MedState</td>
<td>40 Total Overall</td>
<td>121 Current Census</td>
<td>25 Open</td>
</tr>
<tr>
<td></td>
<td>32 Total Bed Requested</td>
<td>27 Current Open</td>
<td>159 Current Census</td>
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The CLC represents an innovative and transformative view of what is meant by 'logistics,' creating more convenience for patients, families and providers as well as more efficiencies and better outcomes for HHC and our partners. Whether monitoring patients at home, providing remote monitoring for high-risk patients or triaging in-demand resources such as MRIs and cardiograms, the HHC CLC is redesigning what it means to be a healthcare system.
Care Redesign

Simply put, the aim of care delivery transformation is to increase value for the patients, families and communities we serve. This is achieved by reducing the cost of healthcare services, improving quality and prioritizing the patient experience.

At HHC, the Clinical Care Redesign (CCR) program represents the series of internal best practices and standard procedures, supported by our strategic framework and operating model, that are driving care transformation and ultimate value optimization.

Specific clinical transformation aims include aligning best practice, reducing variation, improving outcomes, including length of stay and readmission, and reducing cost. The guiding question behind CCR initiatives are, are we thinking differently about use of our resources?

Also, by targeting traditionally high cost diagnosis-related groups (DRG) for CCR, such as congestive heart failure, chronic obstructive pulmonary disease, pneumonia and treatment of diabetic ketoacidosis, to name a few, we align with Centers for Medicare and Medicaid Services (CMS) performance priorities around reducing length of stay, readmissions and complications.

Developing tools that enable us to review quality and cost data side-by-side facilitates our ability to identify practice trends and thereby opportunities for targeted education to close gaps, eliminate care variation and improve clinical practice. Any realized savings from identified care variation and process inefficiency is reinvested back into the system propelling our ability to grow and improve care provided to our patients and communities.

Lastly, we have socialized the clinical transformation, care redesign, care reimagined framework and mindset across the organization. In our Provider Leadership Development Institute, we train high-potential future leaders to think differently about healthcare delivery and best use of resources. Starting there, we ensure we are all speaking the same language and the principles permeate across HHC and become ingrained in our culture.

Since we began this dedicated effort to revitalize and prioritize CCR across the organization it has been widely embraced and the engagement has produced hundreds of potential initiatives for reimagined care delivery with positive anticipated outcomes.
During 2022 the Central Region began a journey to improve the safety, value and quality of care provided to our community by redesigning throughput, the process by which patients are admitted to the hospital, cared for and transitioned to home or rehab. There are several goals of this program. One is to decrease the need for emergency room boarders, which is associated with increased medical errors, decreased patient satisfaction, and poorer outcomes. The second is to remove barriers that keep patients in the hospital longer than medically necessary, which increases the risk of infection and can delay recovery and lead to decreased patient satisfaction.

A Director of Throughput was hired to review current workflow and drive the improvement process. They started by obtaining insights on the allocation of resources and prioritization of opportunities. One immediate change has been improving communication between ordering physicians and ancillary services through the use of technology and secure texting. This allows tests to be prioritized if they are delaying a potential transition. There is an ongoing evaluation of progression rounds, which are multidisciplinary rounds including care coordination, physicians, nurses and rehabilitation specialists that review a patient’s current clinical course and barriers to transition. The estimated date of transition is reviewed and updated in Epic. During these rounds, core quality measures such as need for VTE prophylaxis, the presence of central lines and the use of a Foley catheter are also reviewed to reduce the risk of harm.

Technology is being leveraged to improve patient care. A brief afternoon form of progression rounds driven by an Epic report is being piloted to help mitigate barriers for patients thought to be going home the next day. An Executive Leadership Team dashboard is used that shows emergency department boarders, pending transitions of care, and census at each hospital, enhancing leadership decision making.  

Early returns on the pilot floors have shown significant improvement with the new process. Length of stay has decreased with no signs of increase in readmission rates.

Quality & Operational Outcomes

During 2022 the Central Region continued to focus on reducing preventable harm by analyzing our observed to expected mortality ratios. A number less than one means fewer people die in our hospitals than expected based on how ill a person is. For nine of the months we met our target of less than 0.8.

The Central Region has also focused on reducing the number of falls in the hospital. Our hospitals met their respective targets for the year. The Hospital of Central Connecticut (HOCC) is in the top 25% of liked-sized hospitals and MidState Medical Center (MMC) is in the top 50%.
HOCC FY 2022 Inpatient Falls Rate per 1000 pt Days | Target 1.63

MidState FY 2022 Inpatient Falls Rate per 1000 pt Days | Target 2.51

Continued on next page
Awards & Accolades

• **HOCC achieved recognition as a Level 3 trauma center**
  This new service for our community shows the hospital’s commitment to providing high-quality care including 24/7 assessment, resuscitation, surgery and critical care for critically-injured individuals. It also requires monitoring for quality improvement.

• **Baby Friendly**
  – The Family Birthing Center at HOCC received recognition as a Gold Level Safe Sleep hospital. This requires a hospital-wide education/quality program and community outreach on the importance of infant safe sleeping positions to reduce the risk of sudden infant death syndrome.
  – Both MMC and HOCC have been certified as Baby-Friendly through Baby-Friendly USA, a national accreditation agency that focuses on evidence-based and culturally sensitive care for the mother and baby. It has criteria for skin-to-skin contact, proper feeding of the infant and rooming of the baby with the mother.

• **Healthgrades**
  – HOCC received the America’s 250 Best Hospitals Award, America’s 100 Best Hospitals for Spine Surgery Award, Critical Care Excellence Award, and Pulmonary Care Excellence Award
  – MMC has received the Healthgrades Outstanding Patient Experience award four years in a row.

• **HOCC Bradley campus received accreditation through the American College of Radiology for breast ultrasound.**

• **MMC received the Women’s Choice Best Hospital Award for stroke care, bariatric surgery, obstetrics and mammogram.**

• **Aetna Institutes of Quality® Spine and Total Joint Replacement Designations for MMC**

• **Both HOCC and MMC received recognition for Stroke Care with the Gold Plus Award for inpatient care and the Target Stroke Elite awards for timeliness of administering clot busting medication.**
Evidenced-based research has shown that unnecessary days in the hospital can lead to hospital-acquired complications (infections or falls), and often decrease patient experience. Patients who have an extended length of stay in the hospital can also experience barriers to transition, such as planning difficulties, organization and communication challenges, authorization barriers and transportation delays. Traditional improvement projects aimed at reducing length of stay have focused on targeting improvements in interdisciplinary communication and collaboration, but the logistical barriers remain. By initiating and building technology partnerships, the East Region is providing innovative care and creative solutions to improve patient care and experience.

The East Region remains focused on ensuring the appropriate hospitalization length for each patient and this past year partnered with the Massachusetts Institute of Technology (MIT) to trial a Clinical Predication Optimization (CPO) initiative on two inpatient units at Backus Hospital. This innovative project utilized Artificial Intelligence (AI) to help clinical staff evaluate patients’ medical risk and readiness for transition. These predictive analytics improve the precision of transition planning, analyze the risk of clinical deterioration, evaluate disposition predictions and changes and monitor mortality risks. These more accurate estimated transition dates allow for the provider, nurse and care management team to proactively anticipate and mitigate barriers.

After launching this tool on the pilot floors, our local clinician, nurse and care management teams continued to partner with the team from MIT to improve the accuracy of the data model. Leaders found the tool to be more successful in medical patients and recommended optimization for surgical patients. The team also provided feedback suggesting that electronic health record (EHR) integration would further drive efficiency for providers and team members. Throughout this process, the team continued to monitor readmissions and patient experience as important markers ensuring transition success. With the improved accuracy of estimated transition dates on the piloted floors, the East Region will continue to expand utilization of the AI tool.
Awards & Accolades

- **Healthgrades**
  - Backus Hospital received the Top 250 Hospitals in the United States award from Healthgrades, placing it in the top five percent of hospitals in the country and an overall leader in clinical excellence.
  - Backus earned Healthgrades’ Excellence Award in Critical Care for the second year in a row as well as Five-Star awards for treatment of Heart Failures, Stroke, Pneumonia, Bowel Obstruction and Upper Gastrointestinal Surgeries.
  - Windham Hospital earned Healthgrades awards in a number of categories for orthopedics, including the Joint Replacement Excellence Award and Five-Star awards for Total Knee Replacement, Total Hip Replacement and Spinal Fusion Surgery.
- Backus and Windham hospitals both earning TJC’s Gold Seal of Approval for Advanced Certification for Total Hip and Total Knee Replacement. The hospitals are the first two in eastern Connecticut to receive the certification.
- Backus Hospital was recognized with the “High Performing for Maternity Care” award from U.S. News & World Report as part of their 2022-23 Best Hospitals for Maternity report.
- Backus Hospital was re-certified as a level III Trauma Center, continuing our designation as the only trauma center in New London and Windham counties.
- Backus received an “A” grade and Windham a “B” for safety by the Leapfrog Group. This national distinction recognizes a longitudinal commitment to patient safety and the priority that holds within the region.
- The East Region participated in two unannounced TJC surveys for both Backus and Windham in 2022 with full three (3) year accreditation. Backus was also re-certified as a stroke center by TJC.
The Perioperative (periop) area is high-risk, often complex, and challenging, in which many disciplines work collaboratively to reduce the potential for patient harm. The frequent addition of new team members, procedures, technology and equipment can result in increased likelihood of adverse outcomes.

Creating and sustaining a highly reliable team and organization is foundational to safety. The Regional Periop Safety Committee and High Reliability Project was inspired by an increase in surgical site infections (SSI), specifically Spine SSI. An interdisciplinary team including physicians, nurses, scrub techs, sterile processing, infection prevention and quality initiated a performance improvement project to identify opportunities, barriers and countermeasures. Interdisciplinary observational audits were used to identify opportunities and then apply root cause analysis to identify root causes for breach in aseptic practices in the operating room (OR).

Opportunities and rapid cycle improvements utilizing the Plan-Do-Study-Act (PDSA) methodology for improvement addressed the top variations in practice including surgical site prep, hand hygiene and scrub along with surgical attire, OR traffic and breaches in the sterile instrument table.

Weekly data was assessed and subsequently shared during OR daily safety huddles. SSI prevention and strategies to reduce SSI remained as key drivers on the safety huddle board. In addition to reinforcing evidence-based practices to address these variations, opportunities in awareness, training and application of high reliability behaviors and tools became another actionable item. Colleagues’ participation in the ‘HRO Safety Starts with Me’ virtual training was identified as a barrier. In order to accelerate the training, live in-person training was conducted for the periop team. Three credentialed trainers provided the on-site, in-person training to over fifty surgical services colleagues. The training concluded with a round of Periop HRO Jeopardy using examples from periop safety events reported in Riskonnect. The periop team was encouraged to increase their reporting of safety events to identify opportunities to improve.

Over the course of FY2022, safety event reporting for periop services increased by 57%. The key driver for the Regional Periop Safety Committee and High Reliability Project was the increase in surgical site infections specific to spine surgery. The SSI spine incidence improved the months following the interventions with a sustained rate of zero spine SSI for five consecutive months. The Agency for Health Care Research and Quality (AHRQ) estimates the average cost to be $28,219 per SSI resulting in an estimated cost avoidance of approximately $141,095.
Quality & Operational Outcomes

C-difficile (C-diff), an infection of the gastrointestinal tract is one of the most common causes of hospital-acquired infectious diarrhea often resulting in increased length of stay and cost of care. As a result of focused education and adherence to the testing algorithm, Epic Best Practice Advisories (BPA) for testing, sustained improvements in hand-hygiene, a diarrhea decision tree, antimicrobial stewardship and documentation/ communication regarding bowel changes, improvements have been sustained over six months with an isolated case occurring in October of 2022. AHRQ estimates the average cost of a hospital-acquired C-diff infection to be approximately $17,260. With seven months of zero hospital-acquired C-diff the cost avoidance is estimated to be $120,820.

Central Line Associated Blood Stream Infections (CLABSI) is associated with increased morbidity, mortality, length of stay and hospital costs. There was an 80% reduction in CLABSI in the intensive care unit (ICU) between FY2021 and FY2022. AHRQ estimates the average cost of a CLABSI is $48,000. Applying this estimate results in a cost avoidance estimated at $192,000. To achieve and sustain the reduction in CLABSI, the team recognized the importance of fostering an ongoing dialogue, and practicing a questioning attitude to assess continued clinical indications and alternatives. Practicing effective handoff communication during the shift-to-shift report, and during clinical care rounds, the team focused on evidence-based best practices for the care of indwelling catheters.

Our Nursing and Human Experience Teams have partnered to increase the focus on Purposeful Hourly Rounding (PHR). Providing colleagues with the ‘why,’ targeting falls reduction, improved safety and patient experience has proven to result in increased PHR with an associated decline in patient falls. PHR and falls reduction strategies remain as key drivers on Safety Huddle Boards. A visual cue card has been distributed to all colleagues as a reminder of the elements of the standard work for PHR. This data-driven approach to quality improvement incorporates Lean principles, leadership, accountability and patient experience.
Awards & Accolades

- Leapfrog grade ‘B’. The Leapfrog Group provides consumers with a hospital quality rating to educate consumers about the quality and safety of hospitals in their community.

- The Stroke Program and the Connecticut Orthopaedic Institute achieved advanced disease-specific certification from TJC for Hospital and Health Care Accreditation in Advanced Primary Stroke Center, Advanced Hip and Knee Care, Advanced Spine and Hip Fracture.

- The American Heart Association Get with the Guidelines Gold Plus recognition is an advanced level of recognition awarded to hospital programs demonstrating outstanding performance in clinical care measures for greater than 24 consecutive months. St. Vincent’s was recognized for Stroke; Stroke Honor Roll; Stroke Diabetes Honor Roll; Target Heart Failure Silver PLUS; Target Heart Failure Type 2 Diabetes Honor Roll.

- Aetna Institutes of Quality Orthopedic Surgery Network recognized the Spine Program at St. Vincent’s for achieving clinical quality measures in Spine Surgery.

- High performer designation by U.S. News & World Report in Heart Failure, Stroke, Kidney Failure, Heart Attack and COPD. These lists are data-driven, informing patients about quality of care programs.

- The Women’s Choice Best Hospital Awards recognized St. Vincent’s for Comprehensive Breast Surgery, Best Mammogram Center, Bariatric Surgery, Minimally Invasive Surgery, Obstetrics, Orthopedics, Stroke, Cancer, and Heart Care.

- St. Vincent’s Bariatric Surgery Program is recognized by The Metabolic and Bariatric Surgery Quality Improvement Program (MBSAQIP) for achieving high quality bariatric care.

- St. Vincent’s Mammography Services has been recognized by the American College of Radiology Breast Imaging Center of Excellence and was re-Certified by US Department of Health and Human Services Food and Drug Administration for Mammography Quality Services Accreditation.

- The Laboratory Service achieved College of American Pathology (CAP) Accreditation. CAP accreditation is known as the gold standard for assessing clinical laboratory quality standards.

- Recognition as a leader in LGBTQ+ Healthcare Equity by the Human Rights Campaign Foundation for our commitment to providing high quality individualized care for all patients. The Human Rights Campaign Foundation is the nation’s largest LGBTQ+ advocacy group.

- St. Vincent’s Wound Care centers in Trumbull and Stratford received the Healognics Center of Distinction Award. The award is given to centers that excel in key performance indicators including patient satisfaction, wound-adjusted comprehensive healing rates and outlier rates.
Hartford Hospital, a top regional tertiary/quaternary care center, is committed to the continuous improvement of the care we deliver our patients. Key performance indicators (KPI) are utilized to observe, analyze, optimize and transform processes with direct implications on the care we provide.

During FY2021, an increase in our hospital’s observed (O) compared to the expected (E) mortality ratio was identified. Eliminating preventable mortalities is critical. Preventable mortality refers to avoidable inpatient hospital deaths, those that are not an expected or probable outcome of a patient’s hospital stay.

In response to the noted increase, a multidisciplinary team convened on a weekly basis to review mortalities and assess for quality of care and documentation opportunities. This team included clinical service lines, coding experts, clinical documentation improvement specialists, case coordinators and palliative care/hospice staff. The team has been able to successfully establish the following:

- Standard work for 100% clinical review of all mortalities to identify trends and common factors influencing mortality outcomes
- Review documentation opportunities for all cases with a risk of mortality less than 20% to accurately capture the care delivered
- Monthly clinical documentation education to clinical teams at hospital-wide quality forums
- Leveraging quality analytics for identification of opportunities with development and implementation of mitigation strategies

Hartford Hospital’s FY22 three-month mortality composite O/E ratio was 0.72 compared to the FY21 three-month mortality composite of 0.98, and below the target of 0.95. The data reflects our efforts and our ongoing commitment to improving processes that lead to better patient outcomes.
Quality & Operational Outcomes

Reduction in CAUTI

Catheter-associated urinary tract infections (CAUTI) are one of the most common healthcare-associated infections. During FY22, Hartford Hospital achieved a total of 215 days without a CAUTI, a total of 11 overall infections below the target of 30, and a reduction in the standard infection ratio from 0.586 to 0.220.

The significant reduction is attributed to the following continuous improvement collaborative efforts:

- Unit-based multidisciplinary daily device necessity review
- Implementation and education on post urinary foley catheter removal strategies
- The utilization of clinical decision support on diagnostic stewardship to encourage best practice for specimen collection
- Daily chlorhexidine gluconate bathing for all patients with an indwelling urinary foley catheter
- Focus on evidence-based, back-to-basics fundamentals
- Retrospective review of all cases to identify opportunities
**Patient Safety Indicator 12: Perioperative Pulmonary Embolism or Deep Vein Thrombosis Rate**

Patient Safety Indicators (PSI) were developed for hospitals to screen for healthcare-associated adverse events. PSI 12 captures perioperative venous thromboembolism (VTE), defined as the development of a deep vein thrombosis, pulmonary embolism, or both after a surgical procedure. During FY21, Hartford Hospital had a total of 34 events.

A VTE prevention taskforce was formed from different specialties and disciplines. Our efforts, aligned with the HHC system VTE prevention initiative:

- Performed 100% reviews of all hospital-acquired VTE cases
- Initiated VTE safety huddles at the unit level
- Implemented a refusal algorithm focusing on enhancing patient education and the escalation process for VTE prophylaxis refusals
- Development of evidence-based VTE prophylaxis guidelines
- Optimization of order sets and clinical decision support
- Development of VTE analytical data

**The results**

Hartford Hospital experienced a 56% reduction in PSI 12 for FY 2022, with a total of 19 events.
Awards & Accolades

• Achieved a grade of “A” for both Fall (2021) and Spring (2022) by The Leapfrog Group. This is a significant distinction and evidence of the tremendous transformation in both the quality and safety that has been realized at Hartford Hospital.

• Named a Top Teaching Hospital for second year in a row by The Leapfrog Group. To qualify, hospitals must rank highest among peers on the Leapfrog Hospital Survey, including practices for safe surgery and preventing patient risks. Only 58 top teaching hospitals were named in the country.

• *Money,* in partnership with The Leapfrog Group, named Hartford Hospital to the inaugural list of Best Hospitals in America. Fewer than 150 hospitals in the United States received the distinction. Hartford Hospital is the only hospital in Connecticut to receive the recognition. Data from 39 performance measures in seven different categories from a 2021 hospital survey included: inpatient care management, adult and pediatric complex surgeries, pediatric care, medication safety, maternity care, outpatient procedures and infections.

• For the third year in a row (2021-2023), Hartford Hospital was recognized by Healthgrades as being among America’s 100 Best Hospitals for Cardiac Care Award, America’s 100 Best Hospitals for Coronary Intervention Award, and America’s Best 50 Hospitals for Cardiac Surgery. Also, for the third year in a row (2021, 2022, 2023) it was recognized with America’s 25 Best Hospital Award. Hartford Hospital was also recognized for a second consecutive year (2022-2023) for the Cranial Neurosurgery Excellence Award. This is an award that recognizes hospitals for delivering superior patient outcomes in cranial neurosurgery.

• Named by *U.S. News & World Report* as “No. 1 Hospital in the Hartford Metro Area” and among the best hospitals in Connecticut.

• Recognized as a four-ribbon "Best Maternity Hospital” in Connecticut by *Newsweek* – only one of four hospitals in the state to be named.

• Aetna Institutes of Quality® Spine and Total Joint Replacement Designations
The Pre-Admission Testing (PAT) Program at Charlotte Hungerford Hospital (CHH) is a transformative project that has helped to improve process efficiency, move the care delivery needle and most importantly, improve outcomes for the patients served in the Northwest region. A PAT visit typically includes, but is not limited to, assessment of perioperative risk, medication reconciliation, pre-operative blood sugar optimization, anticoagulation management and coordination of specialty consultations. Prompt identification of high-risk patients, timely interventions, and medical optimization can lead to significant reduction in peri-and postoperative mortality and morbidity and the cancellation of procedures.

PAT has been implemented in many health care organizations around the country including all HHC hospitals. CHH, however, did not have the benefit of having a single entity to medically optimize our patients for same-day surgery. Prior to its initiation at CHH, testing was completed by a patient’s primary care physician or specialty provider, or at times not done at all. Consequently, the need to have the testing completed by a primary care physician or specialty provider often led to medical offices becoming overwhelmed with patient visits for the need to ensure a patient was medically stable for their surgical procedure. Therefore, the need to medically optimize patients prior to their same-day surgical procedures and to improve process efficiency led to the creation of this program.

In December 2021 the PAT program was initially implemented for patients having orthopedic and podiatry procedures, and eventually expanded to include all surgical services and interventional radiology patients. As a result of this implementation, CHH has seen a decrease in peri-operative testing, as well as a reduction in procedure delays and cancellations. In addition, improvement has been seen in patient safety and patient satisfaction as well as increased cost-effectiveness by lowering pre-operative admission time thereby reducing the length of stay and the associated costs.

Quality & Operational Outcomes

**Good Catch:** The Good Catch Recognition program reinforces a culture of patient safety and event reporting by recognizing staff who have prevented patient harm or provided awareness to potential patient harm. Recognitions occur weekly and at the end of the month, all of the awardees are considered for the Good Catch of the Month recognition. The monthly winner is recognized by the regional leadership team and their Good Catch is cascaded upward for recognition at the system level.

In the initial six months of its re-initiation, 32 Good Catches were reported, and by year’s end, 180 Good Catches were reported. The identification of safety events leads to process review and redesign focusing on further harm reduction and reduced clinical practice variation. CHH has been able to identify more near miss events, which do not reach our patients, in FY2022 than in 2021. There was also a reduction in precursor events that reached our patients. Safety event reporting increased over 12% compared with the previous year. During FY2021, 1,940 events were reported compared to 2022 with 2,180 reported events for the Northwest Region.
Eliminate HAI: An area of relentless focus for CHH is on the elimination of hospital-acquired infections (HAI). A HAI can cause extended length of stay and potential for death for our patients in certain cases. Many HAI reduction strategies have been deployed in an effort to decrease incidences of patient harm that can occur as a result. In particular, CHH has seen continuous improvement with the number of Central Line Associated Blood Stream infections (CLABSI) from FY2021 to FY2022. Decreasing the number of CLABSI events not only improves patient outcomes but also decreases additional costs associated with caring for a patient with a CLABSI. In March 2022, multi-disciplinary rounds with nursing, providers and unit leadership were instituted to discuss and track the real-time necessity for and removal of central lines. Additional interventions such as dressing standardization across the hospital for patients who have a central line device and utilizing CHG bathing for all patients with a central line were also implemented. CHH has seen a decrease in the number of CLABSI events since these initiatives began and the trend continues as we look forward into FY2023.

Eliminate Preventable Mortality: The Northwest Region continues to see progressive reduction in the incidences of preventable death among hospitalized patients. This reduction is attributed primarily to safer and higher quality care, improvement in documentation, and hospice conversions. In 2020 the Mortality Review Committee was launched and meets monthly to discuss all in-hospital mortality cases. We continue to look for opportunities for improvement, education and adherence to evidenced-based practices. Careful consideration of any new or emerging safety concerns that could impact the care of other patients is discussed and referred to the appropriate Quality of Care committee and Morbidity and Mortality forum for collaboration and discussion. In FY2022 the addition of a weekly meeting with members of the CHH Executive Leadership team to discuss potential concerns was implemented to ensure support of any initiatives needed to provide the best and safest care possible for the people we serve.

Northwest Region Mortality Rate FY21 and FY22

![Northwest Region Mortality Rate FY21 and FY22](image)
The American Heart Association Get with the Guidelines Silver Plus recognition is an advanced level of recognition awarded to hospital programs demonstrating outstanding performance in clinical care measures for greater than 12 consecutive months. CHH was recognized for Stroke.

The Rural Family Medicine and Behavioral Health residency programs were accredited by The Accreditation Council for Graduate Medical Education (ACGME). The ACGME accreditation provides assurance that a sponsoring institution or program meets the quality standards of the specialty or subspecialty practice for which it prepares its graduates. CHH has not had residents in training in over 50 years. The addition of these residency programs at CHH will help to support the healthcare needs of patients in our community and to expand on services provided.

The American College of Radiology (ACR) accreditation provides assurance that radiology services meet the highest level of image quality and safety. The Mammography, CT scan and Radiation Oncology services at CHH were each re-accredited by the ACR.

The CHH Inpatient Behavioral Health and Outpatient Behavioral Health Services were re-accredited by TJC. This status demonstrates CHH’s compliance with national standards for safety and the ongoing commitment to providing high-quality care.
Chronic subdural hematoma (cSDH) is one of the most common neurosurgical diagnoses, with a recurrence rate ranging from 15-25% in the aging population. In the United States, this disease is projected to be the most common neurosurgical emergency by 2030 and its recurrence is associated with high risk of morbidity, mortality and high cost. The primary pathologic process is manifested by repeated microbleeds from fragile blood vessels supplied by branches of the middle meningeal artery (MMA) which then form a hematoma cavity. There is emerging favorable evidence that MMA embolization is a key alternative or adjunctive treatment for cSDH over surgical evacuation due to its efficacious and minimally-invasive approach. This procedure aims to de-vascularize the subdural membranes and shift the balance from continued leakage and accumulation of blood products toward reabsorption.

The HHC Ayer Neuroscience Institute’s Neuro-Endovascular/Neurosurgical program has been an early adopter of this innovative, minimally-invasive technique. After joining HHC in July 2020, Dr. Tapan Mehta played a pivotal role in starting the MMA embolization program. With guidance from Dr. Inam Kureshi, Dr. Martin Ollenschleger and Dr. Mark Alberts, Dr. Mehta established a guideline for the MMA embolization procedure that focuses on patient safety and excellent outcomes in the cSDH population.

Since the implementation of our guidelines, approximately 150 patients have undergone a successful MMA embolization procedure at Hartford Hospital with a very low subdural hemorrhage recurrence rate of 3.5% (the lowest range when compared to already reported data). Similarly, our adverse event rate is also very low (0% major complications and less than 0.5% for minor complications). Lower recurrence hemorrhage rates in the treated population has been associated with decreased need of open cranial neurosurgical interventions and rapid recovery.

The success of our program has been nationally recognized. Hartford Hospital is now participating in a high impact, multicenter, randomized clinical trial – MEMBRANE – that would hopefully help establish this innovative treatment approach as standard of care. Dr. Mehta and team have successfully published two manuscripts describing our excellent outcomes and procedural success with innovative approach.
Quality & Operational Outcomes

Neurosurgery cases across the Ayer Neuroscience Institute increased by 96 (3%) over a two-year period (FY2021-FY2022) and by 280 (9%) over a three-year period (FY2020-FY2022).

Inpatient and Observation Neuroscience transitions across the system increased by 385 (5%) over a two-year period (FY2021-FY2022) and by 663 (9%) over a three-year period (FY2020-FY2022). Transition volume is primarily attributed to stroke and epilepsy patients.

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<tr>
<td><strong>Inpatient &amp; Observation Neuroscience Transitions</strong></td>
<td>7,200</td>
<td>7,478</td>
<td>7,863</td>
</tr>
</tbody>
</table>
Awards & Accolades

• **Stroke**
  – American Heart Association’s Get With The Guidelines® recognition for Stroke
  – MidState Medical Center received a Best Hospital for Stroke Care Women’s Choice Award
  – The Hospital of Central Connecticut, MidState Medical Center and St. Vincent’s Medical Center rated High Performing for Stroke by U.S. News & World Report Best Hospitals: Procedures & Conditions
  – Backus Hospital received the Healthgrades Stroke Care Excellence Award™ (2023, 2022)

• **Neurosurgery**
  – Hartford Hospital received the Healthgrades Cranial Neurosurgery Excellence Award™ (2023, 2022)

• **Spine**
  – The Hospital of Central Connecticut received the Healthgrades America’s 100 Best Hospitals for Spine Surgery Award™ (2023, 2022)
  – Hartford Hospital, St. Vincent’s Medical Center and MidState Medical Center achieved Advanced Certification in Spine Surgery from TJC
  – Aetna Institutes of Quality® Spine Designation for Hartford Hospital and MidState Medical Center

• **The Chase Movement Disorders Center**
  – Added to the prestigious Parkinson’s Foundation Global Care Network in recognition of the excellent multidisciplinary care its team provides. The only center in the Northeast and only one of 15 globally to be recognized with the Comprehensive Care Center designation.
  – Appointed as an Information & Referral Center by the American Parkinson Disease Association, serving as a resource for those with Parkinson’s disease and their loved ones as well as healthcare providers. One of 22 Information and Referral Centers in the entire country.

• **Neuromuscular Disease**
  – Hartford Hospital’s EEG Lab received the American Board of Registration of Electroencephalographic and Evoked Potential Technologist Accreditation, making it the first lab in CT to receive this accreditation.

• **Neuro-Immunology**
  – Multiple Sclerosis Center designated a Center for Comprehensive MS Care by the National Multiple Sclerosis Society. The breadth of services coordinated by the HHC MS Center earned this prestigious national designation.

• **Sports Neurology**
  – One of only a few programs in the country to offer fellowship training. FY2022 marked the year of our first fellow under the Sports Neurology Program.

• **Epilepsy**
  – Epilepsy Center received Level 4 Accreditation from the National Association of Epilepsy Centers for 2021 and 2022.
The Bone & Joint Institute (BJI) identified an opportunity to improve the pre-incision administration timing of Ancef, an antibiotic used to treat a wide variety of bacterial infections, in the elective orthopedic patient population. In this case, it is used before surgery to help prevent infection.

Preventing surgical site infections is of paramount importance to patients, healthcare providers, and institutions. Pre-operative antibiotics should reach acceptable tissue concentrations prior to the incision time in order to be effective. Our target, based on HHC policy guidelines, is within 60 minutes prior to incision (PTI). With input from infectious disease physician leadership, we synthesized recommendations to identify a new administration goal of 15 to 45 minutes PTI or inflation of the tourniquet for total knee arthroplasty (TKA) surgeries.

Monthly Ancef data for TKA, total hip arthroplasty (THA), spine, and orthopedic trauma/orthopedic surgery patients were reviewed at meetings of our inter-professional orthopedic infection prevention team to improve awareness and implement the Plan-Do-Study-Act model. We added details to the Universal Time-Out checklist – antibiotic name, dose and time administered. Audits of the operating room (OR) Time Out ensured compliance and that gaps were addressed.

Attention to detail in antibiotic administration is one of the many steps in an infection prevention “bundle.” Care “bundles” are simplified sets of evidence-based practice that improve reliability in care delivery and patient outcomes. Identifying Multidisciplinary Champions in the OR was essential to our success. These champions included coordinators, OR nurses, surgeons, and anesthesia providers who contributed to effective communication, data review and gap closure. The use of High Reliability Organization (HRO) Safety Behaviors provided a foundation for improved processes of care. There was no increased cost for this project.

The BJI’s Antibiotic Prophylaxis for Surgical Procedures is now recognized as “Best Practice” and has been incorporated into HHC system policy. Antibiotic delivery to BJI surgical patients at least 15 minutes prior to incision compliance is achieved in close to 98% of total joint replacement patients, 90-95% for spine, and often over 80% for orthopedic/orthopedic trauma patients.

Continuous improvement for infection prevention includes:
- Nose-to-Toes Program: Pre-operative indication for orthopedic patients undergoing implants or hardware. This universal treatment prevents hospital-acquired infections from MSSA and MRSA, antibiotic resistant VRE, and Acinetobacter.
Quality & Operational Outcomes

The Quality and Safety team maintains a robust registry to support performance metrics reporting and quality improvement. Service lines transparently report surgeon-identified data on dashboards that are reviewed monthly. This process promotes teamwork and collaboration for continuous quality improvement, in a “no shame, no blame” environment that focuses on advancing processes of care, not criticizing individuals. Standardizing processes of care across service lines facilitates a data-driven culture, and maintains physician engagement in developing care protocols. Standardized protocols create a unified registry data “baseline” against which any changes can be accurately assessed. Innovations in care are then more easily evaluated and compared to the baseline quality care metrics.

The registry drives reporting for the following initiatives:
- Hartford Hospital/BJI Joint Advisory Council
- Hartford Hospital Quality and Performance Improvement Committee
- TJC Disease-Specific Certification Performance Metrics
- BJI service line quarterly volume and complication reports

The BJI is dedicated to the principle of “Every patient at the top of the pyramid, every day.” From that standpoint, signature clinical programs thrived in FY2022, expanding access to care and improving the patient experience across almost 6,400 surgical cases.

### Total Joint Arthroplasty Service Line (Knee, Hip, Shoulder)

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Surgical Cases</th>
<th>VTE</th>
<th>SSI</th>
<th>PRBC</th>
<th>Readmission</th>
<th>SNF</th>
<th>90-d RTOR</th>
<th>VTE Rate</th>
<th>SSI Rate</th>
<th>PRBC Rate</th>
<th>Readmission Rate</th>
<th>SNF Rate</th>
<th>90-d RTOR Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2022</td>
<td>2662</td>
<td>3</td>
<td>4</td>
<td>8</td>
<td>59</td>
<td>208</td>
<td>25</td>
<td>0.11%</td>
<td>0.15%</td>
<td>0.23%</td>
<td>0.30%</td>
<td>2.21%</td>
<td>7.92%</td>
</tr>
<tr>
<td>FY2021</td>
<td>2423</td>
<td>5</td>
<td>6</td>
<td>5</td>
<td>62</td>
<td>157</td>
<td>23</td>
<td>0.21%</td>
<td>0.25%</td>
<td>0.21%</td>
<td>0.21%</td>
<td>2.56%</td>
<td>7.63%</td>
</tr>
<tr>
<td>FY2020</td>
<td>2058</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>44</td>
<td>157</td>
<td>17</td>
<td>0.19%</td>
<td>0.05%</td>
<td>0.24%</td>
<td>0.24%</td>
<td>2.14%</td>
<td>7.63%</td>
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<tr>
<td>FY2019</td>
<td>2076</td>
<td>3</td>
<td>6</td>
<td>40</td>
<td>48</td>
<td>273</td>
<td>17</td>
<td>0.14%</td>
<td>0.29%</td>
<td>1.93%</td>
<td>1.93%</td>
<td>3.14%</td>
<td>13.15%</td>
</tr>
<tr>
<td>FY2018</td>
<td>1722</td>
<td>5</td>
<td>6</td>
<td>36</td>
<td>49</td>
<td>266</td>
<td>20</td>
<td>0.29%</td>
<td>0.35%</td>
<td>2.09%</td>
<td>2.09%</td>
<td>2.85%</td>
<td>15.45%</td>
</tr>
<tr>
<td>FY2017</td>
<td>2009</td>
<td>5</td>
<td>12</td>
<td>75</td>
<td>66</td>
<td>407</td>
<td>20</td>
<td>0.25%</td>
<td>0.60%</td>
<td>3.73%</td>
<td>3.73%</td>
<td>3.29%</td>
<td>23.23%</td>
</tr>
<tr>
<td>FY2016</td>
<td>1601</td>
<td>7</td>
<td>9</td>
<td>84</td>
<td>43</td>
<td>355</td>
<td>12</td>
<td>0.44%</td>
<td>0.56%</td>
<td>5.25%</td>
<td>5.25%</td>
<td>2.69%</td>
<td>22.17%</td>
</tr>
<tr>
<td>FY2015</td>
<td>1666</td>
<td>29</td>
<td>15</td>
<td>108</td>
<td>62</td>
<td>558</td>
<td>8</td>
<td>1.74%</td>
<td>0.96%</td>
<td>6.48%</td>
<td>6.48%</td>
<td>3.72%</td>
<td>33.49%</td>
</tr>
<tr>
<td>FY2014</td>
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<td>23</td>
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<td>166</td>
<td>43</td>
<td>702</td>
<td>4</td>
<td>1.41%</td>
<td>0.92%</td>
<td>10.19%</td>
<td>10.19%</td>
<td>2.64%</td>
<td>43.09%</td>
</tr>
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### General Orthopedics/Trauma Service Line

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Surgical Cases</th>
<th>Act. Pts</th>
<th>VTE</th>
<th>SSI</th>
<th>PRBC</th>
<th>Readmission</th>
<th>90d RTOR</th>
<th>VTE Rate</th>
<th>SSI Rate</th>
<th>PRBC Rate</th>
<th>Readmission Rate</th>
<th>90d RTOR Rate</th>
</tr>
</thead>
<tbody>
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<td>1720</td>
<td>4</td>
<td>9</td>
<td>153</td>
<td>82</td>
<td>49</td>
<td>0.20%</td>
<td>0.58%</td>
<td>8.18%</td>
<td>8.18%</td>
<td>4.64%</td>
</tr>
<tr>
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<td>1639</td>
<td>9</td>
<td>11</td>
<td>252</td>
<td>117</td>
<td>38</td>
<td>0.55%</td>
<td>0.67%</td>
<td>13.46%</td>
<td>13.46%</td>
<td>7.14%</td>
</tr>
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<td>1700</td>
<td>1</td>
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<td>248</td>
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<td>14.45%</td>
<td>4.06%</td>
<td></td>
</tr>
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<td>1794</td>
<td>1690</td>
<td>6</td>
<td>19</td>
<td>196</td>
<td>83</td>
<td>0.33%</td>
<td>1.06%</td>
<td>10.93%</td>
<td>10.93%</td>
<td>4.63%</td>
<td></td>
</tr>
<tr>
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<td>1808</td>
<td>1710</td>
<td>7</td>
<td>19</td>
<td>191</td>
<td>79</td>
<td>0.39%</td>
<td>1.05%</td>
<td>10.56%</td>
<td>10.56%</td>
<td>4.37%</td>
<td></td>
</tr>
<tr>
<td>FY2017</td>
<td>1598</td>
<td>1569</td>
<td>9</td>
<td>12</td>
<td>205</td>
<td>73</td>
<td>0.56%</td>
<td>0.75%</td>
<td>12.83%</td>
<td>12.83%</td>
<td>4.57%</td>
<td></td>
</tr>
<tr>
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<td>1797</td>
<td>1767</td>
<td>11</td>
<td>12</td>
<td>238</td>
<td>77</td>
<td>0.61%</td>
<td>0.67%</td>
<td>13.24%</td>
<td>13.24%</td>
<td>4.28%</td>
<td></td>
</tr>
<tr>
<td>FY2015</td>
<td>1552</td>
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<td>24</td>
<td>24</td>
<td>182</td>
<td>69</td>
<td>1.55%</td>
<td>1.55%</td>
<td>11.73%</td>
<td>11.73%</td>
<td>4.45%</td>
<td></td>
</tr>
</tbody>
</table>

### Orthopedics Spine Service Line

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Surgical Cases</th>
<th>Act. Pts</th>
<th>VTE</th>
<th>SSI</th>
<th>PRBC</th>
<th>Readmission</th>
<th>90d Neuro Deficit</th>
<th>VTE Rate</th>
<th>SSI Rate</th>
<th>PRBC Rate</th>
<th>readmit Rate</th>
<th>SNF Rate</th>
<th>90d Neuro Def. Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2022</td>
<td>674</td>
<td>634</td>
<td>1</td>
<td>3</td>
<td>7</td>
<td>30</td>
<td>65</td>
<td>22</td>
<td>0.16%</td>
<td>0.15%</td>
<td>1.15%</td>
<td>4.89%</td>
<td>3.98%</td>
</tr>
<tr>
<td>FY2021</td>
<td>630</td>
<td>604</td>
<td>2</td>
<td>1</td>
<td>6</td>
<td>18</td>
<td>86</td>
<td>12</td>
<td>0.16%</td>
<td>0.17%</td>
<td>0.99%</td>
<td>2.98%</td>
<td>14.57%</td>
</tr>
<tr>
<td>FY2020</td>
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<td>454</td>
<td>3</td>
<td>1</td>
<td>6</td>
<td>30</td>
<td>98</td>
<td>12</td>
<td>0.35%</td>
<td>0.31%</td>
<td>1.35%</td>
<td>6.20%</td>
<td>19.47%</td>
</tr>
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<td>497</td>
<td>474</td>
<td>2</td>
<td>4</td>
<td>17</td>
<td>27</td>
<td>72</td>
<td>22</td>
<td>0.40%</td>
<td>0.30%</td>
<td>3.42%</td>
<td>5.43%</td>
<td>14.49%</td>
</tr>
<tr>
<td>FY2018</td>
<td>340</td>
<td>314</td>
<td>2</td>
<td>5</td>
<td>19</td>
<td>20</td>
<td>65</td>
<td>12</td>
<td>0.59%</td>
<td>1.47%</td>
<td>5.59%</td>
<td>5.88%</td>
<td>19.12%</td>
</tr>
<tr>
<td>FY2017</td>
<td>358</td>
<td>332</td>
<td>3</td>
<td>3</td>
<td>17</td>
<td>16</td>
<td>54</td>
<td>12</td>
<td>0.40%</td>
<td>1.21%</td>
<td>1.21%</td>
<td>4.46%</td>
<td>17.61%</td>
</tr>
<tr>
<td>FY2016</td>
<td>268</td>
<td>242</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td>12</td>
<td>31</td>
<td>12</td>
<td>1.49%</td>
<td>1.97%</td>
<td>1.12%</td>
<td>4.84%</td>
<td>11.57%</td>
</tr>
<tr>
<td>FY2015</td>
<td>339</td>
<td>313</td>
<td>1</td>
<td>4</td>
<td>6</td>
<td>9</td>
<td>51</td>
<td>12</td>
<td>0.29%</td>
<td>1.18%</td>
<td>1.77%</td>
<td>2.65%</td>
<td>15.04%</td>
</tr>
</tbody>
</table>

2022 Value Report
Awards & Accolades

• First hospital in New England recognized with TJC’s Gold Seal of Approval in all four Orthopedic Certifications:
  – Advanced Certification in Hip & Knee Replacement
  – Advanced Certification in Spine Surgery
  – Core Certification in Total Shoulder Replacement
  – Core Certification in Hip Fracture Surgery

• Own the Bone Star Performer: Recognized for three consecutive years and published in U.S. News and World Report, reflects more than 75% compliance with bone fracture prevention measures – demonstrating the BJJ’s commitment to helping patients understand their risk for future fractures and prevention.

• Sterile Processing Systems: Achieved more than 45 straight days of “No Bioburden” and awarded Clinical Support Team of the Year at Hartford Hospital.

• Force Therapeutics: Initiated at the height of COVID-19, and now standard of care for Joint Replacement & Spine Preoperative Class. It offers Patient Reported Outcomes (PRO) survey capture, physical therapy videos, and digital communication. Engagement numbers are above the 90th percentile allowing us to measure outcomes that matter most to patients. With at-home care and monitoring capabilities, it provides BJJ care teams with granular actionable clinical metrics beyond standard PRO measures, focusing on potential complications and the need for readmission, pain management, activity level and any patients who are falling off the care pathway. A unique aspect of care at The Bone & Joint Institute is the Level I Orthopedic Trauma surgical care which complements the Hartford Hospital Trauma Center designation.
Cancer patients on chemotherapy are at high risk for experiencing treatment-related side effects. At the HHC Cancer Institute (HHCCI), we are continually reimagining our care delivery to improve outcomes for our patients. Our care extends well beyond in-person interactions within the walls of our facilities. Communication via the phone, computer or the MyChart patient portal is increasingly essential to accessible, comprehensive care.

Nurse triage, which is how our clinical teams assess and respond to patient calls or electronic messages, is a critical component of outpatient oncology care. Optimization of nurse triage and effective medical management in oncology care can improve patient outcomes and prevent many distressing events such as emergency room visits and inpatient admissions.

To improve symptom management for our oncology patients, we implemented an electronic nurse triage system in Epic, our online health record. Using a framework originally developed for primary care, our teams identified the most common and most concerning side effects of cancer treatment and designed clinical pathways to direct care. Using a decision tree with branching logic, a triage nurse is guided to assess patient symptom acuity and identify those patients who need to be seen in the office or who can be managed with advice or other interventions. The team designed the content for oncology patients using national guidelines for symptom management and presented this work at a national conference.

From September 2019 to September 2022, seven sites were live with the triage system and 53,858 total triage calls were fielded. Of those calls, 97% were managed without requiring an emergency room visit or inpatient admission. All calls to the nurse triage line are documented in a systematic way so that we can use the data for quality improvement and for designing innovative clinical interventions.

**Results**

- Time period: September 2019 to September 2022
- 7 sites were live with the system
- 53,858 total triage calls were fielded
- The most common disposition indicating level of care was “See today in the office” (n=858)

**Top three reasons for call across sites**

<table>
<thead>
<tr>
<th>Reason for call</th>
<th>Call count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advice only</td>
<td>11,594</td>
</tr>
<tr>
<td>Medical complaint</td>
<td>5,246</td>
</tr>
<tr>
<td>Medication</td>
<td>4,596</td>
</tr>
</tbody>
</table>

Most frequent triaged symptoms with call count
## Quality & Operational Outcomes

The most recent annual Cancer Quality Improvement Program report, based on 2020 data, illustrates that the Cancer Institute provides care consistent with national standards of care. The report compares quality and outcomes data to more than 1,500 cancer programs accredited by the American College of Surgeons Commission on Cancer (CoC) using the National Cancer Database (NCDB). Data on all types of cancer are tracked and analyzed through the NCDB and used to explore trends in cancer care, as well as identify opportunities for quality improvement. In all categories, the Cancer Institute exceeded the average performance of all other CoC accredited programs.

<table>
<thead>
<tr>
<th></th>
<th>HHC CI</th>
<th>CT</th>
<th>All CoC Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Breast</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First therapeutic breast surgery in a non-neoadjuvant setting is performed within 60 days of diagnosis for patients with AJCC Clinical Stage I-III breast cancer</td>
<td>88.4%</td>
<td>89.7%</td>
<td>83.3%</td>
</tr>
<tr>
<td>Breast radiation after breast conserving surgery</td>
<td>93.2%</td>
<td>93.8%</td>
<td>91.2%</td>
</tr>
<tr>
<td>Combination chemotherapy for hormone receptor negative breast cancer</td>
<td>95.5%</td>
<td>96.2%</td>
<td>93.7%</td>
</tr>
<tr>
<td><strong>Colon</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjuvant chemotherapy for lymph node positive colon cancer</td>
<td>95.3%</td>
<td>91.3%</td>
<td>83.9%</td>
</tr>
<tr>
<td><strong>Gastric</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>At least 15 regional lymph nodes are removed and pathologically examined for resected gastric cancer</td>
<td>83.3%</td>
<td>73.9%</td>
<td>71.8%</td>
</tr>
<tr>
<td><strong>Head &amp; Neck</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time to initiation of postoperative radiation therapy less than 6 weeks for patients with surgically-managed head and neck squamous cell carcinoma</td>
<td>50.0%</td>
<td>46.9%</td>
<td>35.8%</td>
</tr>
<tr>
<td><strong>Non-Small Cell Lung (NSCL)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Systemic chemotherapy administered or recommended for pre or postoperatively resected NSCLC</td>
<td>94.7%</td>
<td>98.7%</td>
<td>90.8%</td>
</tr>
<tr>
<td><strong>Rectum</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Circumferential Margin is greater than 1mm from the tumor to the inked, non-serosalized resection margin for rectal resections</td>
<td>100.0%</td>
<td>93.5%</td>
<td>89.8%</td>
</tr>
<tr>
<td>Chemo and Radiation therapy is administered or recommended for resected rectal cancers</td>
<td>90.9%</td>
<td>87.3%</td>
<td>88.5%</td>
</tr>
</tbody>
</table>
**Improving Cancer Outcomes**

While the majority of cancer care is delivered in the outpatient setting, the highest acuity care is provided in an inpatient, hospital environment. The risk-adjusted Observed over Expected methodology (O/E), illustrated in the graph below, considers many patient-specific factors such as age, other chronic conditions and stage (progression) of the cancer. The observed value is what actually happened and the expected value is the calculation including the many factors. The lower the value, the better. A ratio of less than one (<1) means the outcomes were better than expected. From July 2021 through June 2022, the Cancer Institute’s O/E ratio improved and trended to below the expected rate in the following KPIs.

<table>
<thead>
<tr>
<th>Measure O/E</th>
<th>Annual Rate</th>
<th>Previous Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality</td>
<td>.88</td>
<td>1.25</td>
</tr>
<tr>
<td>Readmission</td>
<td>.89</td>
<td>.93</td>
</tr>
<tr>
<td>Length of Stay</td>
<td>.89</td>
<td>.92</td>
</tr>
<tr>
<td>Complications</td>
<td>.99</td>
<td>1.05</td>
</tr>
</tbody>
</table>

**Fertility education for cancer patients**

Many treatments for cancer can affect a person’s ability to have children, even after treatment is complete. It is important that patients with reproductive capability are educated about the impact of treatment on fertility. Data from 2021 indicated that while information was often being shared, documentation of patient education regarding potential long-term and short-term effects of chemotherapy on fertility occurred only 35% of the time. The clinical team developed standard patient education, a consistent method for sharing it with patients and an efficient way to document that interaction. As a result of the collaborative effort, documentation improved to 70% by the end of November 2022 and efforts are continuing to ensure all patients are aware of fertility complications and understand what options may be available to them to preserve future fertility.
Awards & Accolades

**QOPI® Certification Program**
In FY2022, the Cancer Institute’s medical oncology sites received a three-year accreditation from the QOPI® Certification Program, LLC, through the American Society of Clinical Oncology. QOPI certification reflects a commitment to quality of care that leads to fundamental changes in the clinical practice of oncology. The HHC Cancer Institute practices demonstrated competency in QOPI’s core standards across all areas of care, including:

- Treatment planning
- Staff training and education
- Chemotherapy orders and drug preparation
- Patient consent and education
- Safe chemotherapy administration
- Monitoring and assessment of patient well-being

This recognition demonstrates a commitment to excellence and ongoing quality improvement in our medical oncology practices and infusion centers.

**The American College of Surgeons’ (ACS) Commission on Cancer Accreditation**
The HHC Cancer Institute remains accredited by the Commission on Cancer (CoC), a quality program of the American College of Surgeons (ACS), and undergoes an on-site review every three years. Through its Cancer Committee, led by Dr. Christine Bartus, there is regular monitoring of compliance with the 34 quality care standards across the full spectrum of cancer care including prevention, early diagnosis, cancer staging, optimal treatment, rehabilitation, life-long follow-up for recurrent disease, and end-of-life care. The accreditation demands a multidisciplinary approach which results in improved patient care that is associated with better patient outcomes in diverse settings. Additionally, the standards require patients have access to information on clinical trials and new treatments, genetic counseling, and patient centered services including psycho-social support, a patient navigation process, and a survivorship care plan that documents the care each patient receives and seeks to improve cancer survivors’ quality of life.
The American College of Radiology’s (ACR) Radiation Oncology Accreditation

Hartford HealthCare Cancer Institute maintains accreditation in radiation oncology through the American College of Radiology (ACR). This accreditation focuses on ensuring radiation oncology and medical physics meet the highest standards for technical quality and practice guidelines in order to provide the highest level of quality and patient safety. The process includes a self-assessment and peer review component that assesses patient care and treatment, patient safety, personnel qualifications, adequacy of facility equipment, quality control procedures, and quality assurance programs.
The Connecticut Orthopaedic Institute (COI) at HHC delivers state-of-the-art, high-quality care to all orthopaedic patients in two locations: MidState Medical Center (MMC) and St. Vincent’s Medical Center (SVMC). COI’s mission is to improve the orthopaedic health, healing and quality of life of the people and communities we serve. Our vision is to provide an exceptional patient experience while providing world-class quality and safe care driven by data-proven, research-based orthopaedic best practices.

As healthcare transitions to value-based payments, optimization of work processes while improving clinical outcomes and patient satisfaction is essential. COI implemented an online patient engagement platform "Force Therapeutics," monitored by our navigator team of patient advocates and liaisons to enhance communication with the patients throughout the entire surgical experience. This platform provides patient education, virtual rehabilitation and collection of patient-reported outcomes (PRO). This technology helps the team track our patients throughout the continuum of care from pre-op to one-year post-op. Patients are automatically enrolled once their surgery is scheduled, receiving a welcome email from their surgeon to enroll in this platform.

The goal of this initiative was to improve outreach for our patients, collect PRO data, maximize staff bandwidth, increase patient satisfaction, and mitigate possible post-op issues. This technology helps us stay engaged with patients after transitioning home through patient education and recovery monitoring. After patients leave the hospital, a navigator makes a follow-up phone call to our patients within 48-72 hours and continues up to 90 days after surgery with touch points at 10 days, 23 days, 37 days and 65 days.

Based on the patient’s responses to the touchpoint questions, the navigator team can call back and address the patient’s concerns. Following up with patients is a proven method to increase compliance, outcomes and satisfaction.

### Procedure Preparedness (Knee and Hip Replacement)

<table>
<thead>
<tr>
<th></th>
<th>MMC</th>
<th>SVMC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepared</td>
<td>95%</td>
<td>96%</td>
</tr>
<tr>
<td>Not Prepared</td>
<td>5%</td>
<td>4%</td>
</tr>
</tbody>
</table>

### Procedure Satisfaction (Knee and Hip Replacement)

<table>
<thead>
<tr>
<th></th>
<th>MMC</th>
<th>SVMC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfied</td>
<td>92%</td>
<td>90%</td>
</tr>
<tr>
<td>Neutral</td>
<td>5%</td>
<td>7%</td>
</tr>
<tr>
<td>Dissatisfied</td>
<td>3%</td>
<td>3%</td>
</tr>
</tbody>
</table>

*MMC, SVMC*
In addition, 90% of our patients were reached pre-operatively to successfully capture PRO surveys. The goal of capturing PROs is to measure improvement in patients’ self-reported pain and functional status prior to and after their elective, primary total hip/knee replacement. The interval score ranges from 0 to 100 where 0 represents total knee/hip disability and 100 represents perfect knee/hip health. Patients’ functional status collected at different intervals shows continued progress with their mobility and ability to perform activities of daily living. (*1 yr. interval only contains 4 months of patient volume)
Quality & Operational Outcomes

Since the inception of COI in 2017 at MMC and SVMC in 2019, our case volume continues to grow year over year suggesting that patients and surgeons value the high-quality care provided at our Institute. Patients are becoming aware of the importance of selecting surgeons and hospitals recognized nationally for their experience of providing high-quality care. Research shows that higher surgical volume is associated with superior performance for both institutions and surgeons. COI has seen a 457% volume increase since opening in 2017. COI is committed to leveraging our high case volumes to attain improved outcomes for our patients.

Patient-centered care is fundamental in our programs and individualized to each of our patient’s needs. COI is committed to providing an exceptional patient experience and is evident by the feedback received from our patients. Based on the FY2022 Press Ganey survey results, MMC was ranked in the 99th percentile for Inpatient Top Box Likelihood to Recommend and SVMC was ranked in the 92nd percentile.

With the implementation of clinical care redesign and development of evidence-based guidelines at COI, there has been a positive impact on our patient outcomes. Overall, the surgical site infection (SSI) rate, venous thromboembolism (VTE) rate and 30-day readmission rate are below the national average.

### FY22 Quality Data

<table>
<thead>
<tr>
<th>Knee and Hip Replacement</th>
<th>SSI</th>
<th>Transition Home</th>
<th>Average Length of Stay</th>
<th>VTE Rate</th>
<th>Readmission Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>COI</td>
<td>0.18%</td>
<td>96.20%</td>
<td>1.17</td>
<td>0%</td>
<td>2.23%</td>
</tr>
<tr>
<td>National Average</td>
<td>&lt; 1.00%</td>
<td>93.00%</td>
<td>1.20</td>
<td>&lt; 1.00%</td>
<td>&lt; 3.6%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spine Surgery</th>
<th>SSI</th>
<th>Transition Home</th>
<th>Average Length of Stay</th>
<th>VTE Rate</th>
<th>Readmission Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>COI</td>
<td>0.51%</td>
<td>89.78%</td>
<td>2.59</td>
<td>0.07%</td>
<td>3.38%</td>
</tr>
<tr>
<td>National Average</td>
<td>&lt; 1.00%</td>
<td>94.00%</td>
<td>2.93</td>
<td>&lt;1.00%</td>
<td>&lt;3.68%</td>
</tr>
</tbody>
</table>
Awards & Accolades

COI has received and maintained national recognition for the exceptional care provided to our patients.

**COI at MMC & SVMC**
- America’s Best Hospitals for Orthopedics by the Women’s Choice Award
- TJC Advanced Certification for Knee and Hip Replacement and Advanced Certification for Spine Surgery
- Aetna Institutes of Quality® (IOQ) Orthopedic Surgery network - Spine Surgery designation

**COI at MMC**
- BCBS+ Distinction for Knee and Hip Replacement Surgery and Spine Surgery
- Aetna Institutes of Quality® (IOQ) Orthopedic Surgery network - Total Joint Replacement
- Healthgrades - Five-Star Recipient for Total Knee Replacement, third consecutive year and Five-Star Recipient for Spinal Fusion Surgery
- TJC Certification for Shoulder Replacement Surgery
- Comprehensive Care for Joint Replacement Bundled Payment Model – PY5.2: 19.4/20 Quality score

**COI at SVMC**
- TJC Certification for Hip Fracture
In late 2022, HHC announced the formation of its newest and seventh institute, the Digestive Health Institute, bringing years of work culminating in FY2022 to fruition. The Institute is led by Co-Physicians-In-Chief, Bret Schipper, MD and Jeffry Nestler, MD in partnership with Vice President of Operations, Lindsey Meehan, PA-C. HHC’s Digestive Health Institute promotes physician collaboration across multiple specialties including: Gastroenterology, metabolic and bariatric surgery, obesity medicine, general and colorectal surgery, complex hernia and abdominal core health, hepatopancreaticobiliary surgery, GI oncology, nutrition, behavioral health and others.

Foundational to our Institute model will be the expansion of specialty-specific, physician-led Clinical Quality Councils. Using H3W Operating Model tools and Lean management methodology, these councils will be the vehicle to establish a standard for clinical excellence, quality and safety data management and quality improvement benchmarking ourselves against the top centers in digestive disease management.

All HHC endoscopy units participate in the GI Quality Improvement Consortium (GIQuIC) registry, a national GI endoscopy data repository that provides national benchmarks for endoscopic quality indicators. Through the analysis of GIQuIC data, a quality and safety opportunity was identified related to instructions provided to patients for the resumption of blood thinners after endoscopic procedures. The Institute’s GI Quality Coordinator, Pravina Khant, MSN, RN, created an electronic hard stop requiring the provider to articulate the instructions before discharge can be finalized. This ensures patients are provided clear instructions as well as improving efficiency in the discharge process. We have now achieved 100% compliance, performing significantly better as compared the national average. In addition, standardized postoperative instructions have now been implemented across the system for the most common endoscopic procedures in both English and Spanish language with plans to expand this library to other common languages based on our patient populations.

### Anticoagulation Instructions % at Discharge

![Anticoagulation Instructions Graph]

*Graph shows data for Upper Endoscopy and Colonoscopy with categories for National Avg, HHC Baseline %, and HHC After Hard Stop.*
Quality & Operational Outcomes

Colorectal cancer is the second-leading cause of cancer-related fatalities in the United States. Studies have shown that the incidence of colon cancer is on the rise in young people, even without a significant risk factor such as family history. Due to these trends, in 2022, the U.S. Preventative Services Task Force updated their guidelines and now recommends colon cancer screening beginning at age 45. Most colorectal cancers start as a growth (polyp) on the inner lining of the colon or rectum. Over time, some polyps may turn into cancer, but not all polyps become cancer. Removing polyps before they turn into cancer during a colonoscopy is one of the most powerful tools against colorectal cancer. The measurement that best reflects the quality of a colonoscopy is a physician’s adenoma detection rate (ADR). National benchmarks for ADR are 25% overall (30% in men and 20% in women). Digestive Health Institute physicians have consistently performed well above national benchmarks for adenoma detection rate.

ADR Age 50-75

![Graph showing ADR Age 50-75](image-url)
MBSAQIP Accreditation
FY2022 marked a successful year in programmatic development throughout all of our Digestive Health service lines including Metabolic and Bariatric Surgery. This program remains a premier program for the HHC Digestive Health Institute. In 2022, the American Society for Metabolic and Bariatric Surgery (ASMBS), along with the International Federation for the Surgery of Obesity and Metabolic Disorders (IFSO) issued new expanded guidelines for Metabolic and Bariatric Surgery. DHI's Director of Research and Education, Dr. Pavlos Papasavas, was a key author of these new guidelines, enhancing access to this safe and effective treatment for obesity. Hartford Hospital, MidState Medical Center and St. Vincent's Medical Center continue to be accredited as an American College of Surgeons MBSAQIP Comprehensive Center, now with Obesity Medicine Qualifications. We are amongst the first programs in the nation to have the additional designation of obesity medicine qualifications. Dr. Devika Umashanker continues to lead the Obesity Medicine arm of the program. This program is well-integrated into the center to allow for comprehensive multimodal care of the bariatric patient. Recently, the Hartford Region was accredited as an obesity medicine fellowship site and is looking forward to our first obesity medicine fellow commencing in July, 2023.

NAPRC Accreditation
The Digestive Health Institute, in partnership with the Cancer Institute, recently earned a three-year accreditation from the National Accreditation Program for Rectal Cancer (NAPRC), a quality program of the American College of Surgeons. Fewer than 80 hospitals nationwide have achieved this prestigious recognition.

To achieve voluntary NAPRC accreditation, we demonstrated compliance with the NAPRC standards addressing program management, clinical services and quality improvement for patients. We established a multidisciplinary rectal cancer team and met standards addressing the clinical services that the rectal cancer program provides, including Carcinoembryonic Antigen (CEA testing), Magnetic Resonance Imaging (MRI), and Computerized Tomography (CT) imaging for cancer staging which allow patients to start treatment within a defined timeframe. Rectal cancer programs accredited by the NAPRC undergo a site visit every three years and are also accredited by the American College of Surgeons Commission on Cancer.
Homegrown TR Band Application and Removal Protocol

Diagnosing and managing coronary artery disease has changed over the years. The femoral artery has been the main approach for vascular access, but as technology and technique improved, the radial artery has become the preferred route. Over the past decade, the rate of radial access for coronary angiograms increased steadily due to better procedural outcomes and patient experience. During recovery, patients can sit up in bed, take a walk, use the restroom, and even eat a meal. This is a big patient satisfier.

The radial approach is much more easily managed and associated with fewer complications such as significant vascular injury and bleeding. Achieving hemostasis at the access site includes hand-applied pressure, mechanical compression and arterial puncture closure devices. The TR Band is a compression device designed to assist hemostasis of the radial artery after a transradial procedure-diagnostic catheterization and/or percutaneous coronary intervention. Our Institute developed our own TR Band application and removal protocol incorporating the best-known practices and information available. After implementation, the new protocol significantly reduced diagnostic catheterization patient recovery by shortening the mechanical compression time from six to under two hours. This results in same day transitions – patients going home sooner, improving patient throughput, satisfaction, outcomes and lab efficiency.

On-Demand Mobile Bedside Loop Recorder Implant Program

Ischemic strokes account for 85% of all strokes, and about 25% of these are cryptogenic, with no clear cause. Work-up for stroke includes imaging of the brain and heart, assessing blood flow to the brain and evaluating rhythm abnormalities. The diagnosis of cryptogenic stroke is often made late in the patient’s hospitalization once all necessary testing has been completed. The Heart & Vascular Institute (HVI) and the Ayer Neuroscience Institute collaborated on an initiative to classify fewer strokes as cryptogenic and help to prevent future strokes.

Atrial fibrillation is an irregular heart rhythm that is a common cause of ischemic strokes. Electrophysiology (EP) at SVMC and Hartford Hospital developed an On-Demand Mobile Bedside Loop Recorder Implant Program. When the EP Lab is unavailable, the implant team mobilizes quickly and brings the required expertise and equipment directly to the patient. This program provides timely, safe and coordinated care for our cryptogenic stroke patients. The implantable loop offers continuous heart monitoring when patients transition home.

Previously, these patients would often have to wait for an opening in the EP Lab schedule adding to length of stay and patient dissatisfaction. Patient satisfaction is improved, length of stay is reduced, and lab utilization is better. Since the program start at SVMC, 25% of all loop recorders (280) are being implanted by the mobile team without any infectious issues or other adverse events. The program at Hartford Hospital launched in January 2023.
Quality & Operational Outcomes

Cerebrovascular disease is the fifth leading cause of death in the United States. Carotid Endarterectomy (CEA) is a surgical procedure to remove plaque buildup which cause the restriction of blood flow to the brain. Transcarotid Revascularization (TCAR) is a more minimally-invasive option to treat carotid artery disease.

The HHC Heart & Vascular Institute is consistently recognized for innovative approaches and resulting outcomes of the safe, high-quality care provided.

- The Mitral Valve Repair Reference Center Award identifies the nation’s best hospitals and surgeons for mitral valve repair surgery based on objective performance measures, such as superior clinical outcomes and commitment to measuring quality and performance metrics specific to mitral valve repair.

Hartford Hospital continues to be one of the 22 programs recognized in the United States. This list of recognized, elite programs allows patients to make more informed decisions about where to seek their care.
• Twice a year, the Society of Thoracic Surgeons (STS) provides cardiac surgery performance ratings of hospitals in the United States. Hartford Hospital has achieved the maximum 3-star rating in four out of five categories for the past consecutive 5 years. Achievement of the 3 STAR rating for any one of five categories places a hospital in the top performing 4-9% of all hospitals participating in the STS National Database, placing Hartford Hospital among the most elite cardiac surgery centers in the country.

• The Society of Thoracic Surgeons (STS) and the American College of Cardiology (ACC) collaborate to monitor quality outcomes for patients who undergo transcatheter valve replacement and repair procedures. The Transcatheter Valve Therapy (TVT) Registry collects clinical data for transcatheter aortic valve replacement (TAVR) and provides quarterly reports comparing current performance against national benchmarks. Ratings are based on a TAVR 30-day mortality and morbidity composite score. In 2022, our TAVR program was awarded with the maximum 3 Star rating, ranking Hartford Hospital in the top 10% of programs nationally, and the only hospital in Connecticut to achieve these quality outcomes.

• Awarded the maximum “Three Stars” Vascular Quality Initiative (VQI) Participation Award by the Society for Vascular Surgery’s VQI, a result of participation in actions that led to better patient care. At HHC, VQI data is used to measure performance outcomes, support quality improvement initiatives and long-term patient care.

• The Comprehensive Cardiac Center (CCC) Certification is a newer certification offered by TJC. Success achieving this certification required compliance with national standards of cardiac care, an effective integration of evidence-based medicine and an organized approach to performance improvement including data collection and analysis. Hartford Hospital was the first in New England to achieve certification.

• The American Heart Association (AHA) recognizes Hartford Hospital with the 2022 Mission: Lifeline – STEMI Receiving Center – GOLD PLUS Award. AHA recognizes Hartford Hospital for applying the most up-to-date evidence-based treatment guidelines to improve patient care and outcomes for the community we serve.

• The AHA Get With The Guidelines (GWTG) Heart Failure Program recognized SVMC with the 2022 GWTG Heart Failure Gold Plus, Target: Heart Failure and Target: Diabetes recognition. This represents the maximum recognition.

• Hartford Hospital received Cardiac Specialty Excellence Awards from Healthgrades. Healthgrades specialty excellence awards help consumers evaluate and compare hospital performance. These awards determine and communicate a hospital’s superior performance compared to other eligible hospitals.
Recognizing an opportunity to reimagine our delivery of care to patients in our care, Tallwood Urology & Kidney Institute’s (Tallwood) Pelvic Health Clinical Council created a warning in the electronic medical record to identify patients with an implanted artificial urinary sphincter (AUS). The warning alerts providers of the need to deactivate the sphincter device prior to the insertion of a urinary catheter. Male patients with an AUS must have their sphincter device deactivated prior to urethral catheterization to prevent urethral injury and/or artificial urinary sphincter erosion. Any provider who orders or inserts catheters (e.g. nurses, residents, advanced practice providers, physicians) will receive this best practice alert (BPA). This initiative was raised during a Pelvic Health Clinical Council meeting, as an opportunity to prevent harm to this patient population. The population is low in volume but the error is high-risk in nature and led us to develop this critical BPA. The BPA became active on March 1, 2022 and since then the BPA has provided alerts for 123 unique patients in 6 months. We have utilized this model to expand to other devices within our Institute.

Number of Sphincter Warning – Distinct Impacted Patients
Between 3/1/2022 and 9/30/2022 by month

Number of distinct impacted patients from March 1, 2022 through September 30, 2022 by month of sphincter warning activation. Source: Epic Reporting
Quality & Operational Outcomes

**Observed/Expected for complications for patients who had surgery and had an urology attending**

<1 is better than expected

<table>
<thead>
<tr>
<th>Department</th>
<th>Observed/Expected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pelvic Health</td>
<td>0.52</td>
</tr>
<tr>
<td>Kidney</td>
<td>0.61</td>
</tr>
<tr>
<td>Men’s Health</td>
<td>0.66</td>
</tr>
<tr>
<td>General Urology</td>
<td>0.78</td>
</tr>
<tr>
<td>GU Oncology</td>
<td>0.95</td>
</tr>
<tr>
<td>Stones</td>
<td></td>
</tr>
</tbody>
</table>

Patients having surgery at an HHC hospital and receiving care from a urology attending had better than expected outcomes for complications for each of our programs. Source: Premier Inpatient Quality Data

**Observed/Expected for length of stay by Tallwood program**

<1 is better than expected

<table>
<thead>
<tr>
<th>Department</th>
<th>Observed/Expected</th>
</tr>
</thead>
<tbody>
<tr>
<td>GU Oncology</td>
<td>0.87</td>
</tr>
<tr>
<td>Pelvic Health</td>
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<tr>
<td>Stones</td>
<td>0.87</td>
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<tr>
<td>Men’s Health</td>
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<tr>
<td>General Oncology</td>
<td>0.95</td>
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<tr>
<td>Kidney</td>
<td>0.98</td>
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Patients having surgery at an HHC hospital and receiving care from a urology attending had better than expected outcomes for length of stay for each of our programs. Source: Premier Inpatient Quality Data
Tallwood Men’s Health serves more than 20,000 unique male patients each year. The value of clinical integration between men’s health specialties is supported by the threefold increased rate of referral over the last two and a half years. Source: Creating Access with a Novel Men’s Health Model Utilizing Preventative Care Checklists and a Nurse Navigator. By: Jared Bieniek, Ashley Bodamer, Ilene Staff, Tara McLaughlin

<table>
<thead>
<tr>
<th>Interval</th>
<th>Dates</th>
<th>Unique male patients</th>
<th>Referrals made via Nurse Navigator</th>
<th>Rate of referral (95% CI (confidence interval))</th>
</tr>
</thead>
<tbody>
<tr>
<td>1yr pre-launch</td>
<td>10/2017-9/2018</td>
<td>20,258</td>
<td>168</td>
<td>0.83% (0.71-0.96%)</td>
</tr>
<tr>
<td>1yr post-launch</td>
<td>10/2018-9/2019</td>
<td>23,518</td>
<td>347</td>
<td>1.48% (1.32-1.64%)</td>
</tr>
<tr>
<td>2.5yr post-launch</td>
<td>3/2021-2/2022</td>
<td>20,308</td>
<td>610</td>
<td>3.00% (2.77-3.25%)</td>
</tr>
</tbody>
</table>
The model of care delivery in the Behavioral Health Network (BHN) is integrated across all five HHC regions and thus spans the entirety of the state of Connecticut with care provided in seven inpatient settings and over 30 ambulatory outpatient locations. While safety has been a core priority of the BHN in alignment with High Reliability practices, safety initiatives and interventions have historically been facilitated locally in each region or within each entity. In 2022 the BHN introduced a network-wide Safety Huddle. Launched in January, the BHN Safety Huddle brought together internal stakeholders, including medical and administrative leaders along with executive institute leadership, quality, and risk management. The benefit has been an increase in awareness of safety events occurring in behavioral health areas as well as increased systemization of countermeasures to prevent future events.

One significant discussion topic presented in huddles has pertained to environmental design and patient access to potentially dangerous items. More than 15 safety alerts are now cascaded throughout the BHN and a rapid improvement project was initiated, focused on standardization of patient belonging searches to reduce patient access to potentially dangerous items on inpatient units. Safety events pertaining to potentially dangerous items decreased by 31% as a result of standardized interventions implemented across the network and increased awareness.

A second positive outcome originating from the BHN Safety Huddle was implementation of a recommendation to increase the emergency Narcan® (naloxone) supply on hand in ambulatory settings of the BHN. By increasing the emergency supply of naloxone on hand in all ambulatory and residential settings, colleagues are better prepared to respond in an emergency situation should a patient experience an overdose while on site.

Lastly, a consultation service was initiated to improve responsiveness to assaultive incidents. This consult service, aligned with one of the network’s improvement priorities to reduce harm events related to assaultive incidents, provides additional interventions that may be needed when providing clinical care to patients who are experiencing multiple and/or frequent safety events. In the first consult provided, patient care recommendations resulted in a significant decrease in safety events prior to (n=30) and following the consult service (n=1).

The BHN is increasing patient access to naloxone as a life-saving medication

During 2021, the BHN kicked off the Zero Opioid Overdose Death initiative as an improvement priority focused on ensuring high quality and safe care for individuals with opioid use disorder. An early goal of the initiative was to ensure patient access to naloxone, as a means of preventing adverse overdose events. As of the end of the year, the BHN has ensured that over 4,000 patients with opioid use disorder have the ability to access naloxone. As the BHN moves into the next year and future iterations of this work, access will be expanded to all individuals with substance use disorders, not only opiate use disorders, to address ongoing public health emergencies related to the prevalence of fentanyl in many substances.

During 2022, pilot research funding approximating $15,000 was awarded to the BHN to take this work one step further. The project entitled, “Improving availability of intranasal naloxone rescue for opioid overdose,” will study whether enhanced overdose education delivered in the emergency department setting results in patients having a higher fill rate of naloxone prescriptions received.
Quality & Operational Outcomes

During 2021, the BHN initiated network-wide improvement work aimed at reducing patient and colleague harm through reduction of assaultive incidents. The BRIGHT initiative, aptly named as it represents key goals of the initiative, Behavioral Regulation; Integrated Goals; Humanistic Treatment, implemented best practices from an environmental, clinical practice, and colleague engagement point of view to reduce harm events. One outcome achieved during 2022 as a result of the BRIGHT initiative was a reduction in workers compensation costs due to injuries sustained from assaultive incidents or restraints. Between 2021 and 2022 there was an 88% decrease in workers compensation costs and a 54% decrease in total claims of this type across BHN entities.

The BHN was awarded $2.5 million in new grants during 2022. The success of the BHN’s research enterprise is evidenced by grants awarded, the dissemination of findings through peer-reviewed papers and panels at major scientific meetings and the synergy between research efforts and training and clinical programs. Researchers and scholars published 73 articles, book chapters, and books. BHN colleagues delivered more than 25 national and international presentations.

The Olin Neuropsychiatry Research Center, hubbed at the Institute of Living, is focused on translational neuroscience and clinical studies of major psychiatric disorders, using brain imaging and electrophysiological techniques along with genetic analysis. During 2022, Olin received two new National Institute of Mental Health R01 awards – one uses biological markers to track patients who have recently developed a psychotic illness over time to determine clinical course and treatments and the second will examine people who have had psychotic illness for many years to determine the extent to which social isolation impacts the course of illness later in life.
Also, in 2022, the Institute of Living celebrated its bicentennial. Founded in 1822 as the Hartford Retreat for the Insane, and now known as the Institute of Living on the campus of Hartford Hospital, the IOL has a long history and is one of the oldest and foremost mental health institutions in the nation. 2022 was the first year of a two-year anniversary celebration commemorating the IOL bicentennial.

- The IOL launched a new Bicentennial Lectureship, an award which will be given annually, to a junior psychiatrist who has demonstrated innovation, advocacy, and patient-centeredness in mental health service design, delivery, and approach to care.

- The IOL was the proud recipient of the Hartford Hospital Black & Red gala during 2022, raising more than $2 million for the IOL.
HARTFORD HEALTHCARE COMMUNITY NETWORK
Homecare

Inspired by the recognition that there may be a delay in a patient’s transition to hospice care, HHC at Home’s hospice team has partnered with the HHC Cancer Institute to create and evaluate a program targeted at improving patient and oncologist experience.

The hypothesis was that this delay may be due to a perception that the physician-patient relationship may be disrupted, resulting in a sense of abandonment. While oncologists and patients can stay in communication once the hospice transition has occurred, this project aimed to formalize and evaluate the effects of regular telemedicine visits between patients and the friends/families who are their caregivers, their physician and the hospice nurse. The goal has been to better understand the transition to hospice, the sense of connection or abandonment through the transition, and the satisfaction of all those involved over time. We have been measuring our progress and outcomes using the Edmonton Symptom Assessment System (ESAS) tool for symptom assessment and surveys of patients, caregivers and providers.

The team has leveraged telehealth technology and the shared electronic medical record to improve the connection and experience for all. The patient, caregiver, physician and hospice nurse are jointly participating in video visits with the goals of ensuring a continued connection and mechanism to address concerns. This workflow construct has been outside the traditional model of the hospice nurse being the primary connection between the patient and oncologist.

Preliminary findings suggest improved experience for the patients, caregivers, oncology and hospice providers relative to the use of telemedicine. Patients, caregivers, as well as oncology and hospice providers report feeling more connected after transition to hospice than at baseline with the inclusion of regular telemedicine visits.

Quality & Operational Outcomes

**Intensive Homecare Pilot:** COVID-19 Care at Home Intensive (CCAHI) is a program where an HHC hospital physician and telemedicine nurse round “virtually” on a discharged COVID-19 patient in their home. The patient would otherwise have remained in the hospital. This way we increase hospital capacity, decrease COVID-19 length of stay, increase patient satisfaction and decrease overall cost of the total episode of care.

Learning from the positive outcomes of CCAHI, we have looked to expand this program to other diagnoses and create better outcomes, cost savings for our patients and a better patient experience.

As COVID-19 numbers decrease pilot teams are moving to chronic obstructive pulmonary disease (COPD) and congestive heart failure (CHF) patients. COPD patients make up 12.2% of the total Connecticut inpatient population and CHF patients 12.8%. HHC’s current readmission rate for COPD patients is 20% and for CHF patients it is 19%. We aim to achieve similar outcomes from the CCAHI program.
We duplicated efforts from COVID intensive model for patient experience and satisfaction with transitions from the hospital to home for patients with COPD. Initial results from the preliminary patient surveys show (13 patient surveys completed):

**Positive rating (Excellent or Good) provided for all 8 questions**

- Your **likelihood to recommend** this program to others (100.0% Very Likely)
- The **helpfulness** of the nurse’s teaching and care provided during the first visit in your home (100.0% Excellent)
- The level of support you felt by the homecare and respiratory team after the doctor virtual visits ended (100.0% Excellent)
- The **communication and planning** between your hospital and home care teams to get you home safely (92.3% Excellent)
- The **confidence** level you had that the homecare team could treat your symptoms and answer questions (92.3% Excellent)
- The **helpfulness** of the therapist’s teaching and exercises in your home (92.3% Excellent)
- The **amount of contact** with the doctor supporting your care at home (84.6% Excellent)
- The **contact** you had with the telemonitor nurse (84.6% Excellent)

---

**COVID-19 Program Outcomes**

**Key Takeaways**

- Increased hospital capacity by **110.2 inpatient days**
- The expansion of program to other diagnosis would have more payors from Medicare
- **COVID 16.56%** re-admission rate for all HHHC patients.
- **COVID Pilot readmission rate 8.1% (3 patients out of 37)**
- Average length of stay in acute care center **8.2 days** for patients being transitioned to pilot program.
- Average length of stay on COVID Pilot **2.9 days**
- Patient Satisfaction scores likelihood to recommend **91.3%**
- Oxygen discontinued **2.6 days sooner** then in the acute settings
- The payor mix will shift to Medicare and Managed Medicare with COPD and CHF
Senior Services

A performance improvement project was initiated due to the skilled nursing home’s lag in performance on the CMS quality measure, Residents Who Declined in Locomotion. The A3 problem-solving and continuous improvement approach was started and continued through FY2022. The project captured a vast amount of data from staff who perform the work, identifying the top area of opportunity for staff education around terminology and documentation.

The team was able to provide detailed education to staff on how accurate documentation and communication attributed significantly to the quality measure and how the quality measure affects resident-centered care and quality of life. Re-education of existing staff, as well as new hire orientation education was developed and was foundational to improvement. Data revealed that missed documentation for the first four months of the FY prior to re-education averaged 3.25 missed entries per resident. Post-education resulted in the remaining eight months of the FY showed a decrease in missed entries averaging 1.25 per resident. Various interventions that contributed to the successful decrease in missed documentation included continuous auditing of documentation, one-on-one education for direct care staff and consistent staffing versus agency staffing.

Quality & Operational Outcomes

At the beginning of 2021 Southington Care Center embarked on a culture of safety promotion at its skilled nursing facility (SNF). The prevalence of falls with major injury was higher than the 2021 Connecticut and national average based on CMS data, and contributed to higher cost, higher risk and most importantly decline in quality of life. A combination of High Reliability Organization (HRO) training for all staff, huddle board slides, and near miss reporting in Riskonnect contributed to a decline in falls with major injury and can be correlated with better outcomes in 2022. From 2021 to 2022 there was an 80% decrease in falls with major injury, a 132% increase in near miss reporting, and an 85% increase in colleagues trained in HRO.

<table>
<thead>
<tr>
<th>Residents Who Declined in Locomotion</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2021 YTD Target</td>
</tr>
<tr>
<td>FY2021 YTD Average</td>
</tr>
<tr>
<td>FY2022 YTD Target</td>
</tr>
<tr>
<td>FY2022 YTD Average</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Correlation between HRO trained/Near Miss Reporting/ Falls with Major Injury – FY2021/FY2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Falls w/Major Injury FY2022</td>
</tr>
<tr>
<td>Falls w/Major Injury FY2021</td>
</tr>
<tr>
<td>Near Miss Reporting FY2022</td>
</tr>
<tr>
<td>Near Miss Reporting FY2021</td>
</tr>
<tr>
<td>HRO Trained CY2022</td>
</tr>
<tr>
<td>HRO Trained CY2021</td>
</tr>
<tr>
<td>Near Miss Reporting FY2022</td>
</tr>
<tr>
<td>Near Miss Reporting FY2021</td>
</tr>
<tr>
<td>Falls w/Major Injury FY2021</td>
</tr>
<tr>
<td>Falls w/Major Injury FY2022</td>
</tr>
<tr>
<td>HHCSS 18 120 0 132 10 2</td>
</tr>
</tbody>
</table>
Rehabilitation

HHC Rehabilitation Network (HHCRN) dedicated time in FY2022 to plan and prepare for a pivotal and transformative project that redesigned how our patients access their care.

New patients calling the clinic to schedule a therapy appointment are now routed to a Patient Service Liaison (PSL) in the Access Center. The PSLs are trained in the rehabilitation specialties, including medical terminology, they know who the therapists are, what types of conditions are treated, possible scheduling scenarios, and more. This transformative project goes well beyond scheduling. It also closes gaps in our continuum of care, ultimately leading to lower call abandonment, lower appointment lags, decreased no-shows, and a more efficient use of a clinic’s appointment capacity.

The driving forces behind Access Center integration included getting the right patient to the right provider at the right time, with the best customer experience. This approach also creates a consistent Rehab Network scheduling experience, offers a multitude of appointment options, and reduces phone pressure on clinic front desks, allowing our staff to be in the moment.

**Key metrics:**

**Baseline:**
- Access to care in <3 days for new evaluations consistently under 20% (Goal is >30%)

**Initial results demonstrate positive practice impact:**
- Access to care has improved
- <3 days to access increased to over 30%

**Other positive impacts:**
- One mode for patients to schedule
- Customer service consistency
- Call monitoring

**HHCRN’s Access Center Journey:**
This visual depicts the 10-month preparation journey for October 2022 go-live
Quality & Operational Outcomes

STarT Back Training: Lumbar spine pain is the most common complaint within HHCRN’s Outpatient Physical Therapy clinics and an opportunity to optimize the care of these patients utilizing evidence-based standards was identified for FY2022 and 2023. The Keele STarT Back Screening Tool is designed to screen patients with low back pain and match them with the proper treatment as early as possible. The utilization of the STarT Back Tool in clinical practice can assist with getting patients the right care at the right time, improved access to care, and lead to an improvement in the value (cost/efficiency) of care. In 2022, the main focus for this large knowledge translation project was focused on current state assessment of functional/pain outcomes and developing a comprehensive education and implementation plan.

The current state assessment identified an opportunity within HHCRN to decrease the average number of visits for patients in the low and high-risk categories of the STarT Back Tool. Both were at greater than eight visits. The average visits for these risk categories are recommended, per evidence-based literature, to be 3-4 visits per episode of care. A data review from 2020-2022 demonstrated that if the average visits for the low risk group was decreased to an average of four visits this would have allowed for a potential of 19,829 access points for patients across the HHCRN outpatient clinics.

The first step in the implementation plan involved a selected group of clinicians going through STarT Back Tool Training from the creators of the evidenced-based tool at the University of Keele and their impact accelerator team from the United Kingdom. The training consisted of three half days over a three-week time period, which occurred virtually. The next step in the process is to educate all HHCRN outpatient clinicians who treat lumbar spine patients. The training will consist of self-learning via the University of Keele and one live three-hour training session lead by the HHCRN Spine Program Council.

<table>
<thead>
<tr>
<th>Acute &amp; Chronic: STarT Back Patients per Risk Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
</tr>
<tr>
<td>2468</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Acute &amp; Chronic: Average Visits per Risk Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
</tr>
<tr>
<td>8.2</td>
</tr>
</tbody>
</table>
Patient experience (Press Ganey)
In FY2022, Outpatient Rehabilitation exceeded the target of 90.7% for Likelihood to Recommend. This was the second year in a row Outpatient Rehabilitation achieved such high ratings, which has shown to increase the probability of patients returning for additional care and recommending services to others. In Outpatient Rehabilitation, the success of Likelihood to Recommend has also been connected to the extent to which the providers have earned the patients’ trust, established effective communication, and developed care journeys that are grounded in empathy and compassion.
HARTFORD HEALTHCARE
AMBULATORY CARE
This sentiment is something we at Hartford HealthCare Medical Group (HHCMG) have taken to heart as we continue on our journey to transform the healthcare landscape. A well-trained and competent clinical support staff with a solid leadership structure will yield greater stability, higher level quality care and safety, leading to a positive impact on retention of this critical workforce. Several initiatives have been put into place to achieve these goals.

In October of 2021, HHCMG launched a new clinical colleague education, orientation and training program for clinical support staff led by a team of nurses.

All new medical assistants, licensed practical nurses (LPN) and RNs are required to attend an orientation program that provides standardized training on expectations, baseline competency and skills assessment. This four-day program offers specific education and training tailored to the needs of the specialty division.

In its first year, 240 colleagues completed the orientation program, starting with our primary care division and expanding to include the divisions of endocrinology, geriatrics and cardiology. The goal is to offer the program to all divisions in HHCMG, including more than 30 other specialties.

The clinical colleague education team rolled out the American Heart Association’s Resuscitation Quality Improvement (RQI) in the spring of 2022. RQI was adopted by HHC in 2021 as a quality improvement initiative to the traditional CPR training. RQI utilizes an interactive training kiosk that assesses individuals quarterly for BLS, ACLS and PALS certification. HHCMG partnered with HHC Community Network in sharing and rotating 10 kiosks through more than 150 locations.

HHCMG has introduced an externship program for medical assistants to complete their clinical hours. This helps provide a talent stream of medical assistants to our practices. In FY2022, nearly two dozen students came through the program.

To support the continued growth of the clinical colleague education program and to develop a nursing leadership structure, in April 2022 HHCMG created a Director of Nursing position. Since then, a clear delegation structure for LPNs and RNs has been established and a formal annual competency program has been introduced.
Quality & Operational Outcomes

Building on the success achieved in 2021, HHCMG has continued the journey of improving care for patients with diabetes and hypertension. This year HHC included the Adult Primary Care clinics at both Hartford Hospital and Hospital of Central Connecticut and Physicians Alliance of Connecticut, a partner of HHCMG. We provided support and guidance to these practices by sharing best practice and clinical guidelines.

Despite having an increased population to manage, we saw improvements year-over-year as illustrated in the graphics below.

Additionally, we heightened our focus on the diabetic population, specifically where there are disparities. Applying the Centers for Disease Control and Prevention (CDC) Social Vulnerability Index (SVI) to zip codes in Connecticut, we identified communities that may need more support. We found that these priority zip codes have a four percent higher risk of patients either not getting an A1c or having an A1c that is not controlled. This is a disparity that we are confident we can improve and in FY2023 our sights are set on turning the tide.
With 2023 bringing the long-anticipated and significant change in the payment paradigm, 2022 was the year of preparation for Integrated Care Partners (ICP). ICP was able to leverage its culture of quality performance and care coordination to engage in a new partnership with Optum to create a risk-bearing entity, Advantage Plus Network-CT, to participate in full risk payments for Medicare Advantage. The partnership enhances the work HHC has been engaged in, creating a system of care that offers more diverse sites of care to improve access, affordability and equity with consistent high quality. Optum has great experience and capability in managing outcomes-based full risk payment models and will support the providers and clinicians in the participating networks that beginning in January 2023 will be managing 30 to 40 thousand members.

In addition, the preparation included collaboration with the Hartford HealthCare Medical Group (HHCMG) to redesign primary care with the goals of offloading nonessential tasks from providers, offering annual wellness visits for Medicare patients through telehealth, and enhancing education about disease management through accurate diagnosis capture to best describe the demographics of our attributed population. This has also stimulated innovations in the model of care such as collaborative practice agreements with pharmacists, who are piloting an algorithm based on the HHC Balance Scorecard (BSC) pathways for the management of uncontrolled diabetes. With the Advantage Plus Network launching for business on January 1, 2023, it is anticipated that this initiative will continue to stimulate advancements in access to care and patient-centered clinical pathways, better utilization of resources and drive HHC toward the quadruple aims of population health.

There is no true quality without attention to equity of health outcomes. We are striving to promote and provide equitable access to care and achieve of equity in outcomes across all subpopulations, factoring in social determinants of health, as well as measures of patient experience. A recently-created service line, in its second year, HHC Neighborhood Health, today brings care to the underserved in three of the five HHC regions.

The primary focus of this health equity initiative is to provide access to quality care and services in the zip codes identified as a priority for access and equity in the State of Connecticut. Working collaboratively with the HHC Regional Community Health teams, Neighborhood Health leverages community partner relationships to provide preventative and treatment services to people residing in shelters, congregate housing, and other low-income housing sites. To date, the team has served over 5,500 people with plans to expand services to the other regions in FY2023 and 2024.
Quality & Operational Outcomes

In 2021 and 2022, the Quality and Population Health teams of ICP worked very closely with their HHCMG counterparts and the adult primary care clinics at the Hospital of Central Connecticut and Hartford Hospital to implement quality improvement strategies in the care of large populations. The focus for these strategies was on the BSC metrics of controlling hypertension and diabetes mellitus (A1C), including patient recall and tracking, provider, patient, and office staff education, and coordination between primary care and specialists, on a system-wide scale not done before.

HHCMG uses Healthy Planet, Epic’s accountable care and population management system module, to track continuous improvement, therefore ICP chose key performance indicators (KPI) reflecting the payer or claims data view across all value-based Medicare Advantage (MA) payer plans. These KPIs show the month and year-over-year trend of quality metrics based on payer claims data across MA plans, highlighting the impact of the BSC work on the BP and A1C control for this large population, with expectations of achieving the top-tier performance – MA’s "5 Stars."

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**Diabetes A1C Controlled**

![Graph showing Diabetes A1C Controlled from 2019 to 2022 with 4 Star and 5 Star indicators.]

**Controlling Blood Pressure**

![Graph showing Controlling Blood Pressure from 2019 to 2022 with 4 Star and 5 Star indicators.]

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Since 2020 and in preparation for the first measurement year of CarePartners of Connecticut, ICP and the HHCMG population health team have remained hyper-focused on all the ‘Stars’ metrics – the quality outcomes and preventive screening metrics that Medicare uses to assess the quality of care across MA plans. These metrics, such as screening for breast cancer and colon cancer and assessing for kidney disease in patients with diabetes, are clinically excellent and relevant measures for population health management. ICP has utilized another tool to track the quality performance across all the value-based MA plans we participate in. These show year-over-year improvement across most measures. Despite the pandemic, as a result of several quality initiatives over the past two years such as the 2021 HHC Diabetes Toolkit, 2021 Clinician Toolkit, and deployment of CPT II codes, we are now realizing these processes and have achieved the following results.

**Year-Over-Year Star Performance**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Weight</th>
<th>Prior Total Gaps</th>
<th>Prior Closure Rate</th>
<th>Prior Stars</th>
<th>Current Total Gaps</th>
<th>Current Closure Rate</th>
<th>Current Stars</th>
<th>Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast Cancer Screening</td>
<td>1</td>
<td>9,030</td>
<td>81.1%</td>
<td>★★★★★</td>
<td>11,108</td>
<td>82.4%</td>
<td>★★★★★</td>
<td>↑</td>
</tr>
<tr>
<td>Colorectal Cancer Screening</td>
<td>1</td>
<td>20,106</td>
<td>78.8%</td>
<td>★★★★★</td>
<td>24,968</td>
<td>77.9%</td>
<td>★★★</td>
<td>→</td>
</tr>
<tr>
<td>Controlling Blood Pressure</td>
<td>3</td>
<td>17,603</td>
<td>69.5%</td>
<td>★★★</td>
<td>24,076</td>
<td>74.5%</td>
<td>★★★★</td>
<td>↑</td>
</tr>
<tr>
<td>Diabetes A1C Controlled</td>
<td>3</td>
<td>6,045</td>
<td>78.0%</td>
<td>★★★★★</td>
<td>8,030</td>
<td>74.7%</td>
<td>★★★★</td>
<td>↓</td>
</tr>
<tr>
<td>Diabetes Care Eye Exam</td>
<td>1</td>
<td>6,045</td>
<td>79.4%</td>
<td>★★★★</td>
<td>8,030</td>
<td>79.1%</td>
<td>★★★★★</td>
<td>→</td>
</tr>
<tr>
<td>Osteoporosis Management in Women Who Had a Fracture</td>
<td>1</td>
<td>269</td>
<td>35.7%</td>
<td>★★</td>
<td>334</td>
<td>38.6%</td>
<td>★★</td>
<td>↑</td>
</tr>
<tr>
<td>Plan All-Cause Readmissions</td>
<td>1</td>
<td>1,243</td>
<td>8.4%</td>
<td>★★★★★★★</td>
<td>1,962</td>
<td>10.1%</td>
<td>★★★★★</td>
<td>↓</td>
</tr>
<tr>
<td>Statin Therapy for Patients With Cardiovascular Disease</td>
<td>1</td>
<td>1,794</td>
<td>86.8%</td>
<td>★★★★</td>
<td>2,369</td>
<td>86.5%</td>
<td>★★★★</td>
<td>↓</td>
</tr>
<tr>
<td>Medication Adherence for Cholesterol (Statins)</td>
<td>3</td>
<td>24,231</td>
<td>89.5%</td>
<td>★★★★</td>
<td>33,457</td>
<td>90.2%</td>
<td>★★★★★★★</td>
<td>↑</td>
</tr>
<tr>
<td>Medication Adherence for Diabetes Medications</td>
<td>3</td>
<td>6,600</td>
<td>88.7%</td>
<td>★★★★</td>
<td>9,132</td>
<td>88.8%</td>
<td>★★★★</td>
<td>↑</td>
</tr>
<tr>
<td>Medication Adherence for Hypertension (RAS antagonists)</td>
<td>3</td>
<td>19,562</td>
<td>91.0%</td>
<td>★★★★</td>
<td>26,313</td>
<td>91.0%</td>
<td>★★★★</td>
<td>↑</td>
</tr>
<tr>
<td>Statin Use in Persons with Diabetes</td>
<td>1</td>
<td>5,608</td>
<td>84.7%</td>
<td>★★</td>
<td>7,516</td>
<td>85.5%</td>
<td>★★★</td>
<td>↑</td>
</tr>
<tr>
<td>Overall</td>
<td>N/A</td>
<td>118,136</td>
<td>82.8%</td>
<td>3.86</td>
<td>157,295</td>
<td>83.6%</td>
<td>3.91</td>
<td>↑</td>
</tr>
</tbody>
</table>

*Measures with fewer than 30 gaps are excluded from Overall Star calculations
**Aetna data through 12/31/2022, Anthem data through 12/31/2022, CCI data through 12/31/2022, CPCT data through 11/30/2022, United data through 12/31/2022, Wellcare data through 12/31/2022
The HHC Medicare Shared Savings Program (MSSP) accountable care organization (ACO) has been in existence since the beginning of 2013. Since its inception, multiple providers and practices have been active members of the program with patient attribution for the year ending 2022 of just over 26,000 attributed lives. One of the cornerstones of the MSSP is managing the total cost of care through a focused effort on improving quality outcomes. Currently, there are 10 quality measures by which all ACOs are scored, including three measures that will be scored for all payer populations starting with performance year 2025. The HHC MSSP ACO quality score for performance year (PY) 2021 (data for PY2022 will not be finalized until the summer of 2023) was 93.18/100, placing the ACO in the upper 25% of ACO quality performance in the United States. The table below represents the year-over-year comparison of quality performance for the HHC ACO denoting improved scores in green.

### ACO Quality Score for Performance

<table>
<thead>
<tr>
<th>ACO Quality Measure</th>
<th>HHC ACO 2021</th>
<th>HHC ACO 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>CARE-2: Screening for Future Fall Risk</td>
<td>80.59%</td>
<td>88.14%</td>
</tr>
<tr>
<td>DM-2: Diabetes HbA1C Poor Control (inverse measure)</td>
<td>8.78%</td>
<td>14.53%</td>
</tr>
<tr>
<td>HTN-2: Controlling High Blood Pressure</td>
<td>77.56%</td>
<td>69.22%</td>
</tr>
<tr>
<td>MH-1: Depression Remission at 12 mos (PFR)</td>
<td>5.17%</td>
<td>6.15%</td>
</tr>
<tr>
<td>PREV-5: Breast Cancer Screening</td>
<td>77.53%</td>
<td>78.64%</td>
</tr>
<tr>
<td>PREV-6: Colorectal Cancer Screening</td>
<td>69.45%</td>
<td>73.53%</td>
</tr>
<tr>
<td>PREV-7: Influenza Immunization</td>
<td>85.98%</td>
<td>71.90%</td>
</tr>
<tr>
<td>PREV-10: Tobacco Use: Screening and Cessation Intervention</td>
<td>65.22%</td>
<td>68.52%</td>
</tr>
<tr>
<td>PREV-12: Screening for Depression and Follow-Up Plan (scored in 2022)</td>
<td>48.92%</td>
<td>45.25%</td>
</tr>
<tr>
<td>PREV-13: Statin Therapy for Prevention and Treatment of Cardiovascular Disease (PFR)</td>
<td>83.28%</td>
<td>84.02%</td>
</tr>
</tbody>
</table>

For PY2021, the HHC MSSP ACO also achieved shared savings of $3.6M for the first time in the ACO’s history denoting strong improvements in cost and utilization, improved coding accuracy and documentation, and continued strong quality performance. The shared savings were distributed to the ACO practices based on patient attribution percentage per the final CMS roster for the period ending 12/31/21.
HARTFORD HEALTHCARE LEADERSHIP
Hartford HealthCare Contributing Leadership

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Ajay Kumar, MD, MBA
Executive Vice President & Chief Clinical Officer

Eric Arlia, RPh, MBA
Vice President, Pharmacy Services

Eric Bennett
Manager, Continuing Education

Stephanie Calcasola, MSN, RN-BC, CPHQ
Vice President, Quality & Safety

Candace Carlson
Senior Director of Operations, Informatics

Elizabeth Giotti, RN, MHA
Vice President, Care Logistics Center

Clare Cryar
Manager, Innovation

Stephen Donahue
Director of Operations, CESI

Daniel Kombert, MD
Medical Director, Care Logistics Center

Thomas Nowicki, MD
Medical Director, CESI

Rocco Orlando, MD, FACS
Senior Vice President & Chief Academic Officer

Britta Raczkowski
Operations Manager, CESI

Kristen Ramsay
Director of Operations, Clinical Affairs

Clara Riley
Director, Academic Affairs

Lizabth Roper
Director of Research

Barry Stein, MD, MBA, FSIR, FACR, RPVI
Vice President & Chief Clinical Innovation Officer

Peruvamba Venkatesh, MD, FACP, FRCPEd (Edin-UK)
Vice President & Associate Chief Academic Officer

Regional

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Senior Vice President & Central Region President

Jeff Finkelstein, MD, FACEP
Vice President of Medical Affairs

Karen Fasano, DNP, MBA, RN, NEA-BC
Vice President of Patient Care Services

Brian Byrne, MD
Regional Medical Quality Director

Fairfield Region

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Senior Vice President & Fairfield Region President

Daniel Gottschall, MD
Vice President of Medical Affairs

Teresa Fuller, MSN, RN, CPXP
Vice President of Patient Care Services

Patricia Burnes, MS, LSSBB, RRT
Regional Director, Quality & Safety

Corina Marcu, MD
Regional Medical Quality Director

East Region

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Senior Vice President & East Region President

Abbie Courtemanche, DO
Vice President of Medical Affairs

Colleen Desai, MBA, MSN, RN, CEN
Vice President of Patient Care Services

Maeve Carey, MS, CPHQ, CPPS
Regional Director, Quality & Safety

William Horgan, MD, MB
Regional Medical Quality Director

Hartford Region

Bimal Patel
Senior Vice President & Hartford Region President

Adam Steinberg, DO, MBA, FACOG, FACS
Vice President of Medical Affairs

Laura Bailey, MSN, RN, RNC-OB
Vice President of Patient Care Services

Brenda White, DNP, APRN, ACNP-BC, CPHQ
Regional Director, Quality & Safety

Avital Porat, MD
Regional Medical Quality Director
Regional
Northwest Region

Bimal Patel
Senior Vice President & Northwest Region President

Paul Scalise, MD
Vice President of Medical Affairs

Erinne Houton, BSN, RN, ACM, CCDS
Vice President of Patient Care Services

Trisha Rubbo, MSN, RN
Regional Director, Quality & Safety

Hemal Patel, MD
Regional Medical Quality Director

Institutes

Ayer Neuroscience Institute
Khalid Abbed, MD
Senior Vice President & Co-Physician-in-Chief

Mark Alberts, MD, FAHA
Senior Vice President & Co-Physician-in-Chief

Wendy Elberth
Senior Vice President of Operations

Nidal Kifaieh, MD, MBA-MHA, SSGB, MS
Director, Quality & Safety

Bone & Joint Institute
John Grady-Benson, MD
Physician-in-Chief

Stacey A. Lombardi
Vice President of Business Operations

Emily Nguyen, RN
Director, Quality & Safety

Connecticut Orthopaedic Institute
Andrew Turczak, PA-C
Vice President

Dianne Vye, RN
Director of Quality & Safety

MidState Medical Center
John D. McCallum, III, MD
Co-Medical Director

Adam Ferguson, DO
Co-Medical Director

St. Vincent’s Medical Center
Gerard J. Girasole, MD
Co-Medical Director

John Irving, MD
Co-Medical Director

Heart & Vascular Institute
James Cardon, MD, FACC
Interim Co-Physician-in-Chief

Sabet Hashim, MD, FACS
Senior Vice President & Co-Physician-in-Chief

Wheatley Wentzell
Senior Vice President of Operations

Howard Haronian, MD
Vice President of Operations and Chief Quality & Innovation Officer

Dominick Mariconda, PA-C
Director, Quality & Safety

Tallwood Urology & Kidney Institute
Steven Shichman, MD
Vice President & Physician-in-Chief

Dino Costanzo
Senior Director

Ashley Bodamer
Director, Program Development & Integration

Claudia Martinez
Program Manager
Clinical & Ambulatory Networks

Behavioral Health Network
John Santopietro, MD, DFAPA
Senior Vice President & Physician-in-Chief

James O’Dea, PhD
Senior Vice President

Deborah Weidner, MD, MBA
Vice President of Quality & Safety

Melissa Morgera
Director, Quality & Safety

Community Network
Eric Smullen
Senior Vice President

Lisa Connolly
Vice President, Community Network Services

Chris Carlin
Vice President, Rehabilitation Network

Laurie St. John
Vice President, HHC at Home

Christy Terry
Director of Quality, Rehabilitation Network

Rita Grimes
Director of Quality & Safety, HHC at Home

Pamela Leone
Senior Analyst, Quality & Compliance

Erika Stinson
Director, Communications & Planning

Hartford HealthCare Medical Group
Padmanabhan Premkumar, MD
Senior Vice President & HHCMG President

Cynthia Heller, MD
Vice President & Physician-in-Chief

John Foley, MD
Vice President of Medical Affairs

Susan Barrett
Vice President, Primary Care Operations

Mark Vye
Vice President, Specialty Care Operations

Roxanne Rotondaro
Senior Director of Population Health, Quality & Patient Safety

Integrated Care Partners
James Cardon, MD, FACC
Executive Vice President
Chief Clinical Integration Officer
CEO, Integrated Care Partners

Debra Hayes
Vice President and Chief Operating Officer

David Santoro
Vice President, Business Operations

Naomi Nomizu, MD
Vice President of Medical Affairs

Trish Hasselman
Senior Vice President, Managed Care

Colleen Sullivan
Vice President, Care Management
Hartford HealthCare Board Quality & Safety Committee Membership

The Quality and Safety Committee is a standing committee of the HHC Board of Directors responsible for assisting the Board in ensuring the health and well-being of the communities HHC serves by overseeing the quality of clinical care, patient safety and patient services provided throughout the system and across the entire care continuum; reviewing the effectiveness of the comprehensive system-wide quality and safety program at each of HHC’s acute hospitals and the HHC non-acute clinical Member Organizations; and advising the Board on matters relating to hospital medical staffs.

**Members of the Committee:**

**Patricia Roberts, MD**  
Quality & Safety Committee Chair  
Chair Emeritus, Department of Surgery, Lahey Hospital and Medical Center

**Joseph Abreu, MD**  
Noninvasive Cardiologist and Director of Echocardiography, Charlotte Hungerford Hospital

**Howard Boey, MD**  
Head and Neck/Facial Plastic Surgery Partner, Southern New England Ear, Nose and Throat

**James Carroll, MD**  
Radiologist, MidState Radiology Associates

**Irfan Chughtai, MD**  
Connecticut Nephrology Associates

**Julie Ciucias**  
Patient Family Advisor

**Greg Deavens**  
Hartford HealthCare Board Chair  
President & CEO, Independence Health Group

**Bruce Eldridge**  
Account Executive, H.D. Segur Insurance, Inc.

**John Janco**  
Retired President & CEO, Torrington Savings Bank

**Jeffry Nestler, MD**  
President, Connecticut GI

**Kola Olofinboba, MD**  
Managing Partner, Fairview Capital Partners

**Carl Polifroni, EdD, RN, CNE, NEA-BC, ANEF**  
Professor, PhD Program Director, and Co-director of School & Child Health, University of Connecticut School of Nursing

**Dara Richards, MD**  
Chief Medical Officer, Southwest Community Health Center

**Carina Vora, DDS**  
Dentist, Vora Dental Care