

Quality & Safety Report 2017



*The right care in the
right place at the right time.*

The Christiana Care Way

We serve our neighbors as respectful, expert, caring partners in their health. We do this by creating innovative, effective, affordable systems of care that our neighbors value.



ON THE COVER: Albert White, with his faithful canine companion, Chi Chi, is a glowing example of how our nationally recognized Carelink CareNow service is helping neighbors overcome barriers to optimal health by linking them with needed support throughout our community. See page 6 to learn how his Carelink CareNow team (pictured above) is traveling the journey with him on the road to good health.

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We serve together

At Christiana Care, our mission is simple, yet profound: We take care of people. Our approach to quality and safety is to put our patients and their families at the center of all we do. We serve our community together as one team, guided by our values, excellence and love.

Providing safe, highly reliable care, an exceptional experience for every patient and reducing the cost of care to deliver excellent value means not only treating people when they are sick, but helping them to stay well. The missing link to optimal health, we know, is addressing the gaps in between.

This year, we earned the John M. Eisenberg Patient Safety and Quality Award, the nation's preeminent acknowledgment of quality and safety in health care, for our patient-centered care coordination service Carelink CareNow. Through Carelink CareNow, we are meeting patients' social and behavioral health needs in addition to their medical needs. We are ensuring the right care in the right place at the right time. This is the road map to better health at lower cost — quality, safety and value.

For neighbors like Albert White, featured on our cover for the life-changing progress he has achieved with the support of his Carelink CareNow team, this innovative approach to care — evidence-based and individualized for success — is changing lives.

So is our multidisciplinary collaboration toward prevention of harm, including infection control and medication safety. Collaboration is paramount in our Journey to Zero to eliminate cases of preventable harm and in our efforts to manage and learn from events with transparency and compassion through our CANDOR program.

In our continuous endeavor to provide care of the highest quality and safety, our move from a department-based clinical structure to a service line structure more closely matches how patients experience us when they come for care. This transformation is achieving measureable and meaningful results for those we serve. Clinical pathways within each service line enable us to reduce variation in care and provide care that is evidence-based — decreasing readmissions, reducing length of stay and making a positive impact that reverberates through our health system and our community.

Our neighbors count on us to anticipate their needs and help with compassion and generosity. We are committed to being exceptional today and even better tomorrow. Our consistent, rapid gains in quality and safety speak to the extraordinary people in our health care workforce who understand what our patients and our community value.



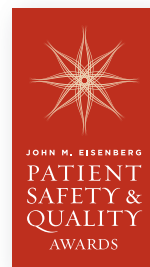
Janice E. Nevin MD

JANICE E. NEVIN, M.D., MPH

PRESIDENT AND CHIEF EXECUTIVE OFFICER
CHRISTIANA CARE HEALTH SYSTEM

Carelink CareNow care coordination service earns Eisenberg Patient Safety and Quality Award

Preeminent recognition for quality and safety in health care honors innovative approach to helping patients manage chronic conditions



Christiana Care Health System's patient-centered care coordination service Carelink CareNow was recognized with a 2017 John M. Eisenberg Patient Safety and Quality Award in the Local Level Innovation in Patient Safety and Quality category.

Presented by the Joint Commission and the National Quality Forum, the Eisenberg Award recognizes innovation and effectiveness in helping patients to manage their health while achieving higher quality health care at lower costs.

Through Carelink CareNow, Christiana Care partners with about 300 primary care physicians to transform the way care is delivered to nearly 75,000 Medicare beneficiaries and health plan members. It accelerates the health system's journey to achieve better quality and better experience at reduced costs.

A robust information technology-enabled network of care coordination support services features a prediction analytics engine that integrates real-time information from the Delaware Health Information Network, along with other health information — admission and emergency department visit information, physician visits, lab results, radiologic reports, pharmaceutical use and claims data, to proactively identify populations most at risk or in need of attention before issues escalate.

A well-connected multidisciplinary network of Carelink CareNow team members supports patients across the continuum of care from hospital to skilled nursing facilities to community-based providers to home care through the Christiana Care Visiting Nurse Association. Outpatient outreach starts as soon as patients return home, with a focus on symptom management, follow-up appointments and access to medications after discharge, all while supporting primary care and sub-specialty physicians in the care of their patients.

Real-time admission alerts on patients from all emergency departments and hospitals through the regional health information exchanges, along with other health information and claims data, allow the team to interact with hospital clinical and care management teams, helping to avoid unnecessary hospitalizations and ensuring appropriate follow-through on clinical plans. The service educates patients on the appropriate sites to access acute care and minimize unnecessary use of the emergency department or hospital. The intensity of outreach is customized to each patient.



“Carelink CareNow's unprecedented predictive analytic capabilities and innovative work in care coordination improve health care safety, quality, value and access to care for all throughout our state and region.”

SHARON L. ANDERSON, MS, BSN, RN, FACHE

CHIEF POPULATION HEALTH OFFICER, SENIOR VICE PRESIDENT OF QUALITY AND PATIENT SAFETY
PRESIDENT OF CARELINK CARENOW

Carelink CareNow supports bundled care

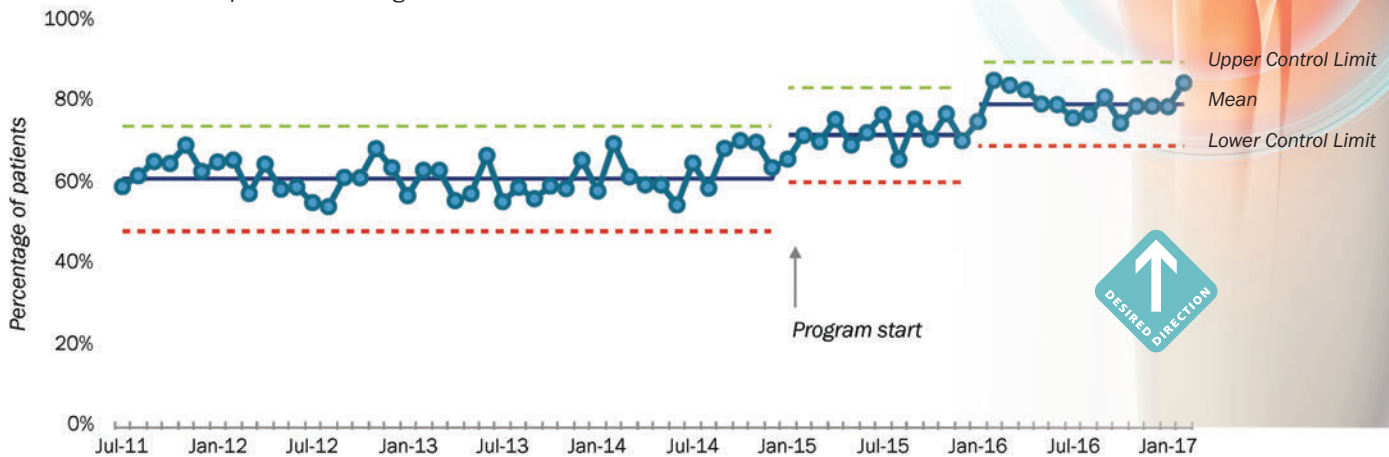
Carelink CareNow supports more than 8,600 patients through participation in the Centers for Medicare & Medicaid Services' Bundled Payment for Care Improvement project. The patients represent several surgical and medical populations, including total hip and knee replacement surgery, cervical spine surgery and congestive heart failure. Through bundles, Christiana Care takes responsibility for the financial and clinical outcomes of Medicare patients in episodes of care, including acute inpatient stays, post-acute care and all related services up to 90 days after hospital discharge.

► Elective joint replacement

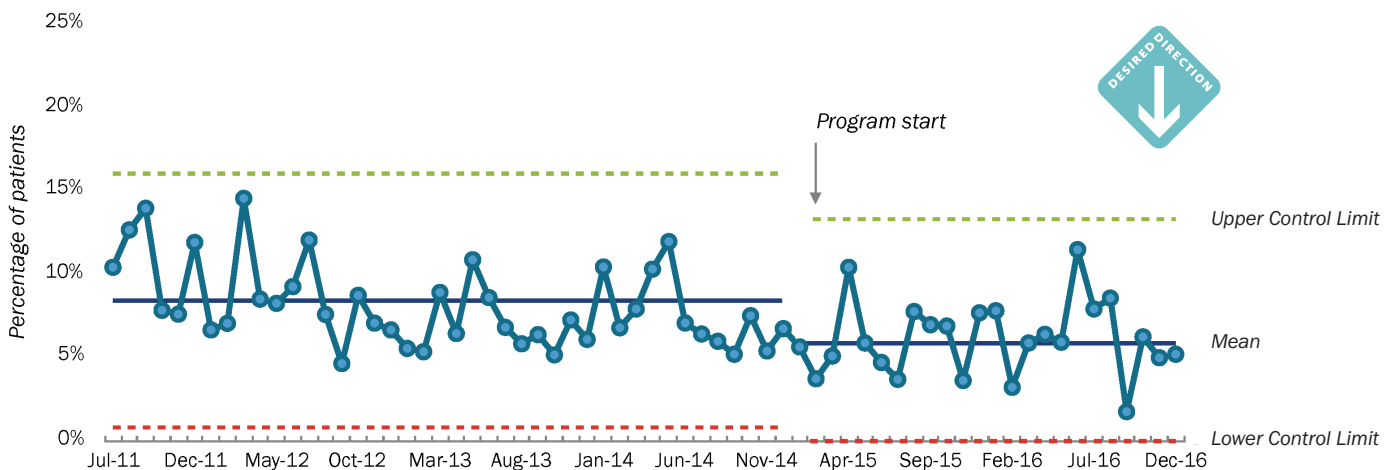
Bundled care increased the number of patients having elective joint replacement who were discharged to their homes with self-care or with home health care by 30 percent. It reduced the number of patients transferred to skilled nursing facilities after total joint replacement surgery by more than 62 percent and created a 30 percent reduction in readmissions after 90 days.

Community Discharge Rate for Patients with Total Joint (Hip or Knee) Replacement July 2011 – February 2017

Percent of patients discharged to home with self care or home health care



90-Day All-Cause Readmission for Patients with Total Joint (Hip or Knee) Replacement July 2011 – December 2016

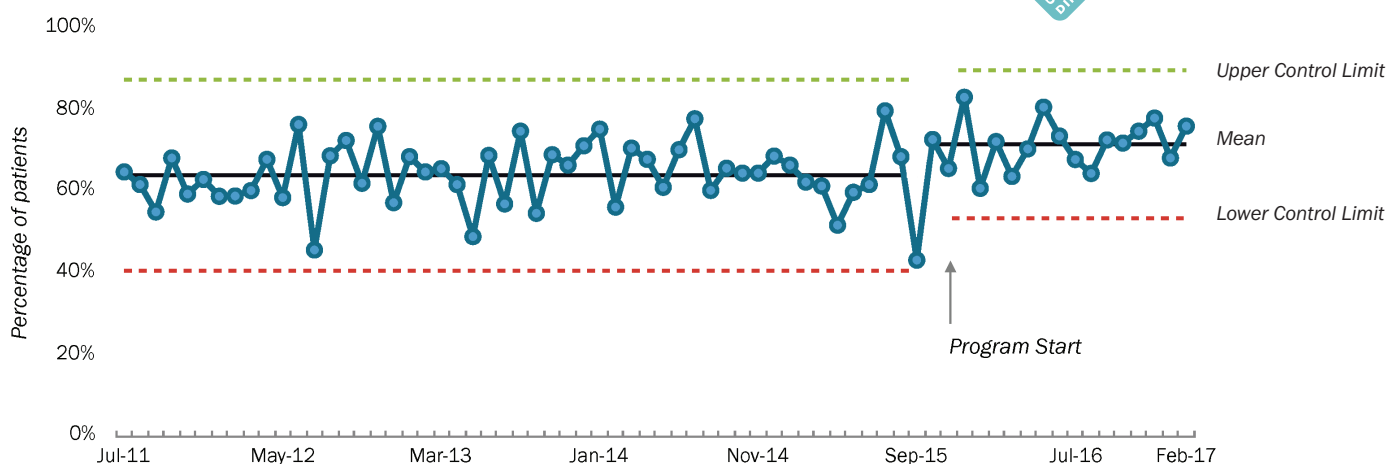


► Congestive heart failure

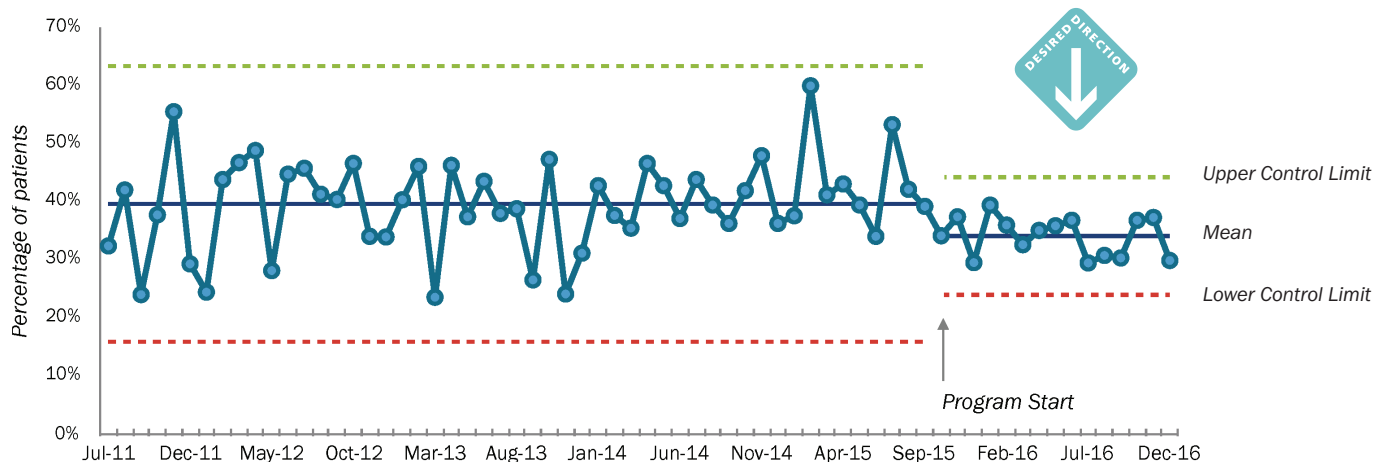
For patients admitted to the hospital with congestive heart failure, the average length of stay decreased by more than 11 percent. The volume of patients discharged to home with self-care or with home health care increased by nearly 12 percent, with a concurrent reduction in the number of patients transferred to skilled nursing facilities by more than 10 percent. The readmission rate to the hospital decreased by almost 14 percent.

Community Discharge Rate for Patients with Congestive Heart Failure July 2011 – February 2017

Percent of patients discharged to home with self care or home health care

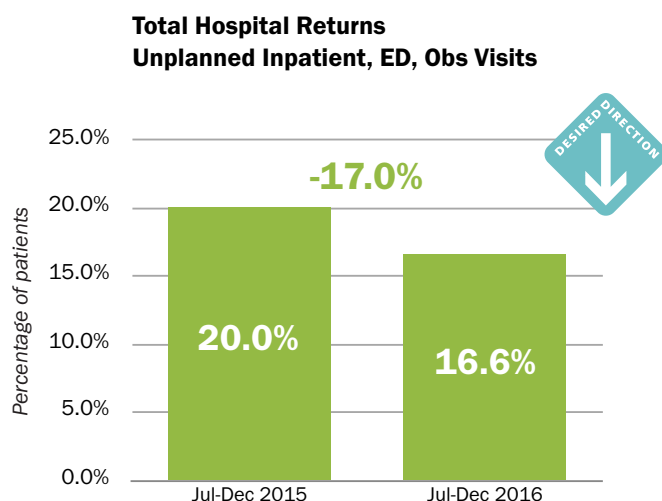
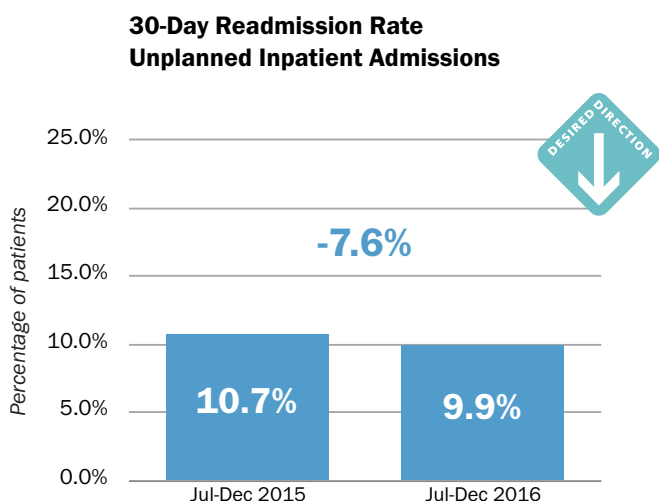


90-Day All-Cause Readmission for Patients with Congestive Heart Failure July 2011 – December 2016



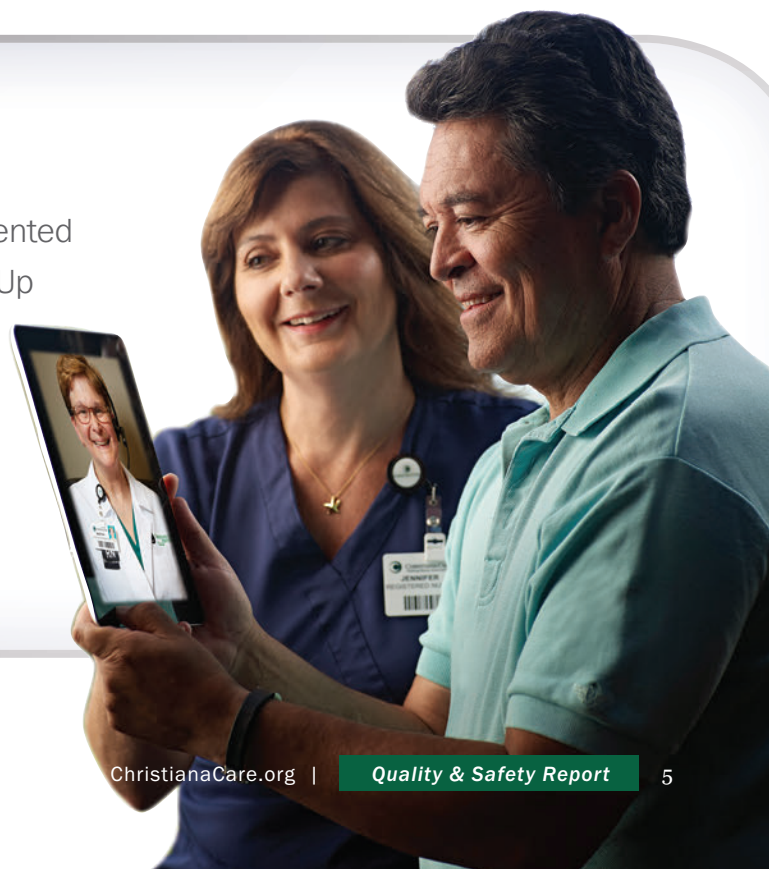
► Skilled nursing facilities

To reduce unnecessary hospital utilization and improve quality of care for patients in skilled nursing facilities, Carelink CareNow teamed with the staff from local and regional facilities. Strategies included weekly interdisciplinary conference-call patient rounds, medication review and reconciliation and social work support. This effort reduced average length of stay by 17 percent, saving an estimated \$821,000, and reduced hospital readmission rates by almost 8 percent.



Christiana Care wins Stand Up for Patient Safety Management Award

The National Patient Safety Foundation presented Christiana Care Health System with a Stand Up for Patient Safety Management Award for the successful implementation of Carelink CareNow. The annual award recognizes an outstanding patient safety initiative led by or created by mid-level management.



*Carelink CareNow team
helps man and his
best friend take steps
toward optimal health*

FROM HIS APARTMENT WINDOW, Albert White not only has a clear view of Christiana Care's Wilmington Hospital; he can see a healthier future full of promise thanks to the care coordination support he has received through Christiana Care's award-winning Carelink CareNow service.

A few years ago, a reliance on prescription pain medication for a painful knee needing replacement turned to "self-medicating" and addiction for the now 73-year-old retired nonprofit director and college instructor. Not only hurting physically, White was grieving the loss of his wife and had lost his home all in the matter of just a few years. Although he used to teach health and wellness courses at a local college and knew what he should be doing to take care of himself, he admittedly ignored the advice of his doctor and "let go."

His knee was getting worse, but he had reached the point of just not caring anymore — until he met Kristina Lauderback, MSS, MLSP, LCSW, and Alicia Smalls, MSN, MPH, RN of the Carelink CareNow community program.

White is on the path to recovery. It's a path he travels with his faithful canine companion, Chi Chi, who rides along on the seat of his walker. The two have made regular trips to Christiana Care's Wilmington campus this past year for White to see his Project Engage engagement specialist and his primary care physician, and to fill prescriptions through the onsite retail pharmacy. What he isn't doing as often at Wilmington Hospital these days is relying on the emergency department for uncontrolled pain. Soon he won't even need the walker, now that his Carelink CareNow team has helped him get well enough for knee replacement surgery.

"Finding a place to live and getting healthy enough for surgery was hard, but they stuck with me and kept calling to make sure I was doing all right," said a grateful White of his Carelink CareNow team. "I feel very comfortable with them. They are like family to me. Chi Chi likes them, too!"

In fact, Chi Chi likes her best friend's care coordination team so much that she stayed with Lauderback during White's recuperation from his knee replacement.

"My whole life is different right now."

"They showed up and everything in my life just turned around," White said. "They told me how to do what I already knew, but I just didn't care. I had given up, but they stuck with me and I was able to get the treatment and housing help I needed because of them."

White credits Lauderback's professionalism and persistence in making all the difference in addressing the social and behavioral barriers that stood in the way of his achieving optimal health.

"I didn't have much to work with, but she stood by me and coordinated everything, including helping me get into this apartment. It would have been rough without her help. She did what others couldn't."

Today, with the help of Christiana Care's Project Engage early intervention program for substance-abuse disorders, facilitated by his nurse and social worker,

It was over and above for any social worker's job description, perhaps, but not beyond the steps that Lauderback was willing to take to help White and Chi Chi travel the road to optimal health.

"My whole life is different right now," White said. "I plan to keep doing what I should do. Before I met Kristina and Alicia, I was my worst enemy. Now I have good people around me and I can relax a little bit. I may not have many people around me, but I am fortunate to have good people."

Mr. White continues to be supported throughout his recovery from joint replacement by Lauderback, Smalls and a team from the Christiana Care Visiting Nurse Association to make sure he is able to ambulate safely at home and remain on the path to good health.

Innovative IT-powered population health care management improves outcomes and reduces hospital readmissions and emergency department visits

Sharon Anderson, BSN, MS, RN, CPHQ; Michele Campbell, MSM, RN, CPHQ; Donna Mahoney, MHCD; Katie Muther, MSN, RN; Janice Nevin, M.D., MPH; Patty Resnik, MBA, MJ, RRT-NPS, CPHQ; Tabassum Salam, M.D., CHCQM; Terri Steinberg, M.D., BA.

Background:

Patients with chronic conditions are often the most frequent utilizers of health care. Moreover, adapting to developments in one's illness, understanding how to self-manage a chronic illness and share information between primary care and specialty providers, can be a full-time job for someone with a chronic illness. In response to these challenges, Christiana Care Health System developed an IT-enhanced care management support to enable populations of patients to achieve better clinical outcomes at lower cost.

Methods:

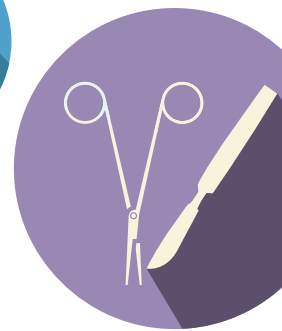
In 2012, Christiana Care received a grant to design a generalizable, scalable, and replicable IT-driven care model that would integrate disparate clinical and registry data generated from routine care to support longitudinal care management for patients with ischemic heart disease. The single-disease care management program was expanded beginning in mid-2015 to serve risk-based models for many diseases and chronic conditions.

Results:

More than 8,600 patients in several surgical and medical populations, including joint replacement, cervical spine surgery, and congestive heart failure, have been supported. For example, preoperative assessment of patients with elective joint replacement to predict post-acute care needs led to an increase in the volume of patients discharged to home with self-care or with home health care by 30 percent — from 61 to 80 percent.

Conclusion:

Next steps are to continue to increase the number of patients served throughout the region and to expand the scope of care management programming.



Clinical pathways eliminate unnecessary variation in care to enhance quality and safety, drive value

Christiana Care's growing library of clinical pathways — a population health approach that creates robust collaboration among service lines and essential services to eliminate unnecessary variation in care — is bringing greater value in care by optimizing clinical outcomes, improving patient experiences and reducing the cost of care.

Built on an established body of research, these medical roadmaps guide physicians and provider teams as they partner with patients in implementing evidence-based standards of care. They include algorithms for screening, evaluation, diagnosis and treatment; answers to common questions or concerns; recommendations for patient-education materials; information about resources available to patients and their families; and recommendations for follow-up management and prevention of disease complications, as well as palliative and end-of-life care. The complete clinical pathway library is now accessible to Christiana Care providers from any PC or mobile device.

One of the key indicators of how pathways are improving care is a downward trend in emergency department visits and 30-day readmission rates for a number of chronic conditions.

By helping patients and their physicians more effectively manage chronic conditions at home or in the doctor's office, the need for repeat emergency department visits and rehospitalizations is decreased, and the value of the care experience is enhanced.

"One of the keys to the pathways' success is that they eliminate unnecessary variation in care to ensure that all patients receive the right care, at the right time, with the right team involved, 100 percent of the time," said Ken Silverstein, M.D., MBA, chief clinical officer.

Using the interactive Tableau data visualization tool, clinical teams are now able to monitor pathway compliance and assess in near real-time whether the pathways are improving clinical outcomes, reducing length of stay and reducing costs of care. Tableau dashboards replace static reports by allowing providers to drill down to automatically updated reports for a snapshot of whether the pathway is making a difference.

"When we reduce variation, we achieve better outcomes for our patients," said Mike Eppehimer, MHSA, FACHE, senior vice president for service line operations. "Being able to give patients a more predictable pathway and engaging them as partners in their care improves overall patient experience because they understand what's happening now, what's happening next and what their role is," he said. "There's a tremendous amount of momentum around these pathways, an energy around it that makes it different from anything we've done in the past."

“

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MIKE EPPEHIMER, MHSA, FACHE

SENIOR VICE PRESIDENT FOR SERVICE LINE OPERATIONS



Clinical Pathways

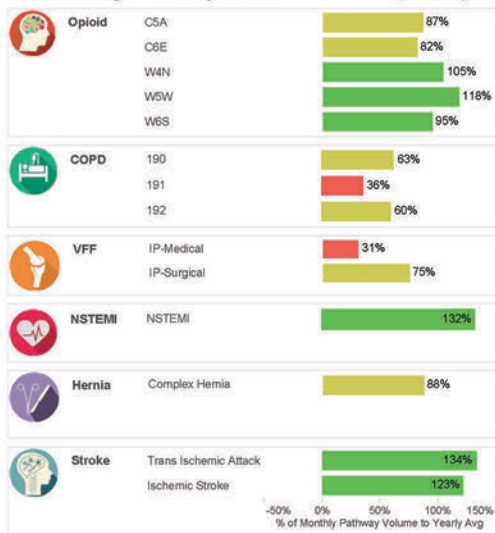
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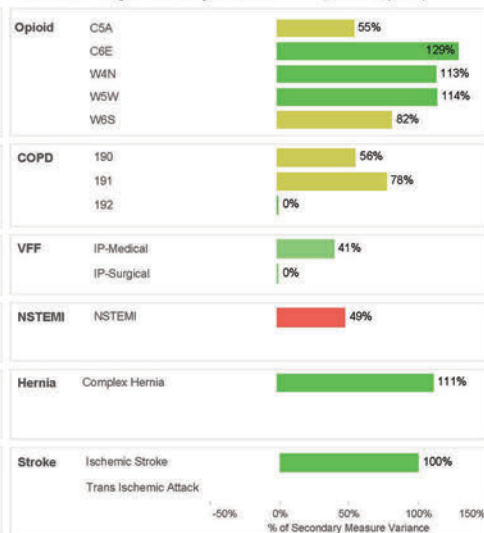
Clinical Pathway Summary

Select a Measure: Volume Month Start: 9/1/2016 Month End: 9/30/2016 Year Start: 1/1/2016

Percent to Target - Pathway Volume (Month / Avg Year)



Percent to Target - Primary Measure (Month / Avg Year)



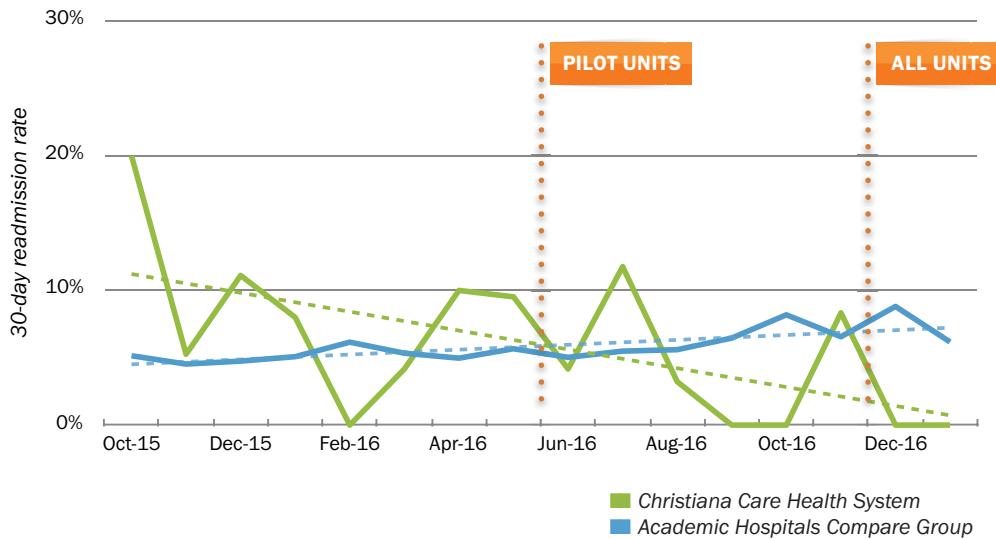
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► 30-day readmissions for opioid withdrawal down 30 percent

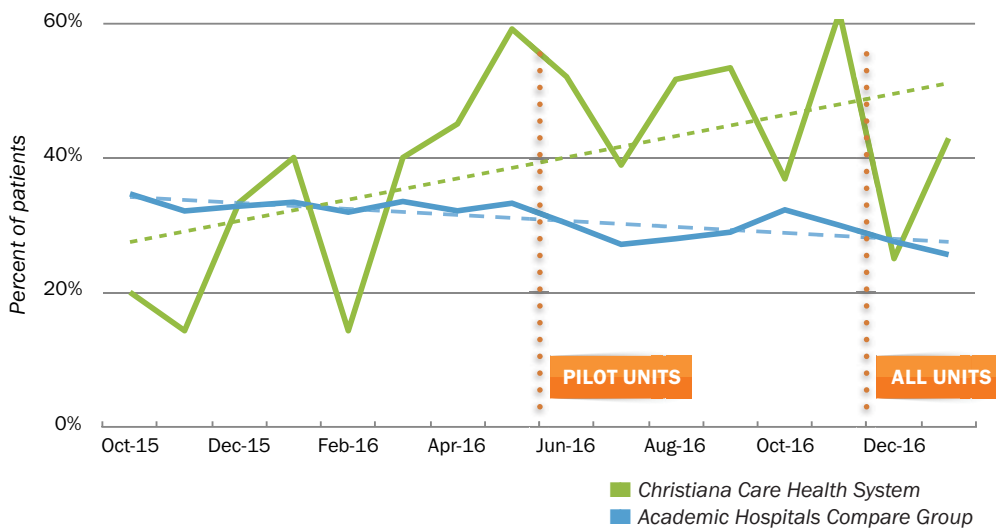
A clinical pathway to standardize screening, identification and treatment of patients at risk of opioid withdrawal and reduce variation in care for opioid addiction has led to a reduction in both length of stay and the 30-day readmission rate. Key to the improvement is an increase in the number of patients prescribed Suboxone, which helps relieve symptoms of opiate withdrawal.



Percentage of Opioid Withdrawal Patients Readmitted within 30 Days



Percentage of Opioid Withdrawal Patients Prescribed Suboxone



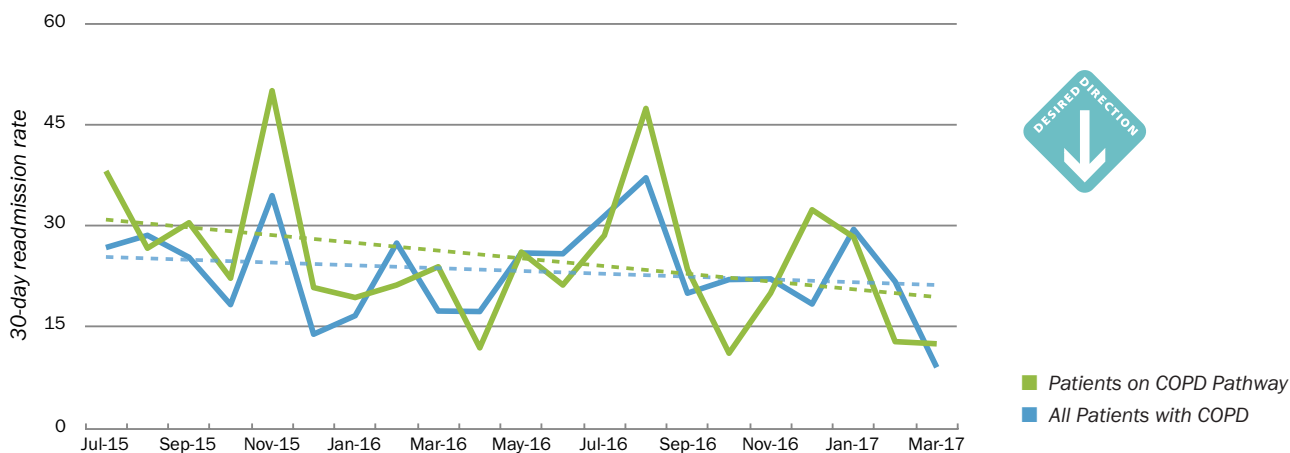
Opioid Withdrawal Pathway: 30 percent decrease in 30-day readmission rate (baseline = 8.1 percent, pathway go live = 5.6 percent). Length-of-stay and 30-day readmission rates for patients with a medical DRG and a diagnosis of opioid withdrawal are decreasing, while the percentage of patients prescribed Suboxone has increased when compared to baseline.

► COPD pathway reduced readmissions by 31 percent

A clinical pathway that outlines evidence-based care for patients with chronic obstructive pulmonary disease has helped decrease the 30-day readmission rate by 31 percent. This pathway involves a checklist for providers to ensure that all elements of care are being delivered, including smoking cessation classes and home health care, and making sure patients can afford medication. Patients meeting certain criteria are followed 90 days after leaving the hospital through the Carelink CareNow care coordination service and have access to a one-stop discharge clinic for follow-up care in the immediate post-hospitalization period.



Decrease in 30-Day Readmission Rate for Patients on COPD Pathway



COPD Pathway helped decrease the 30-day readmission rate by 31 percent (baseline = 32 percent, pathway go live = 22 percent).

30-day readmission rates for COPD patients with a COPD checklist have shown a downward trend when compared to baseline data.

“

Pathways are not static documents; they are ever-evolving, guided by new research and experience, always with the potential to support coordinated leaps forward in delivering optimal health and an exceptional experience to the people we serve.”



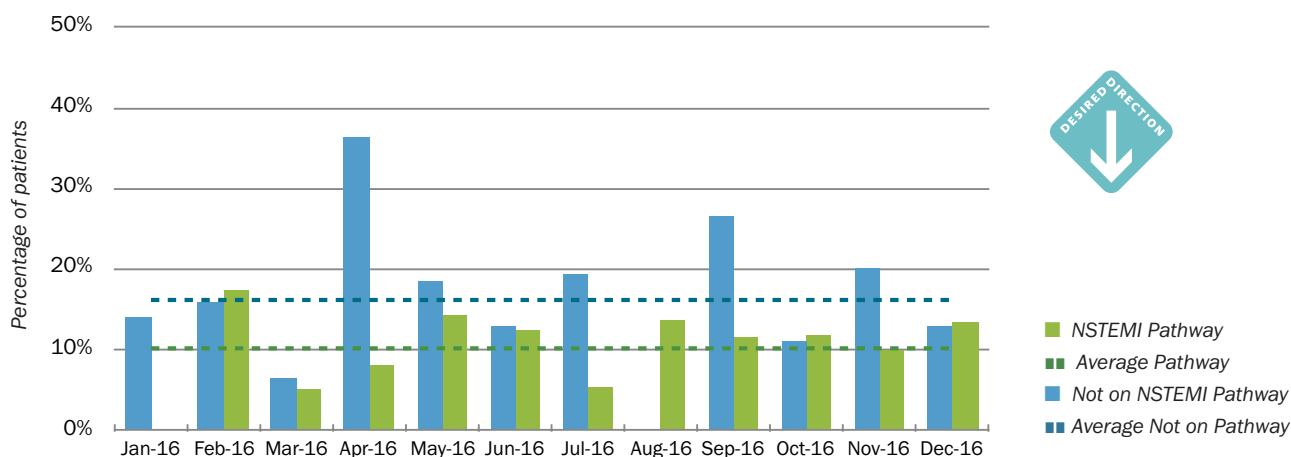
KEN SILVERSTEIN, M.D., MBA
CHIEF CLINICAL OFFICER



► **Patients on NSTEMI pathway less likely to return to ED or for additional inpatient care**

Readmission rates for patients presenting to the hospital with the most common type of heart attack — a non-ST-segment elevation myocardial infarction, or NSTEMI — are notably lower, both for 30-day emergency department revisits and inpatient readmissions, when the treatment plan follows the NSTEMI clinical pathway. Key accomplishments include an improved patient intake and identification process, including risk-scoring to identify patients who qualify for the pathway and a reduced turnaround time to obtain clinical labs. Other improvements involve optimized orders, which facilitate guideline-recommended medications and therapies; streamlined nursing plans of care, including education to help patients comprehend their diagnosis and encourage engagement; and collaboration with the pharmacy for both patient education and an outpatient pharmacy discharge program to fill initial medications upon discharge.

**30-Day Inpatient Readmissions for Patients Coded NSTEMI:
Pathway versus Non-Pathway**



NSTEMI pathway leads to lower 30-day readmission rate when compared to patients coded with an NSTEMI who are not on the pathway during calendar year 2016.

Clinical pathways are a tangible result of Christiana Care's new operating structure, which builds care around patients and their experiences across the continuum. The maturing pathway process, now in its third year, is governed by the Clinical Value Council and Clinical Value Council Executive Committee. A Pathway Integration Team supports systemwide implementation, and a Project Manager Forum supports the integrated practice teams tasked with developing and monitoring the pathways for their respective service lines.

While the clinical pathways are currently being used primarily in Christiana Care's hospitals and outpatient practices, they have the potential to support better coordinated and optimized care for patients throughout the community as physicians and other care providers leverage the pathways throughout the continuum of care.

continued

Clinical Pathways Quick Facts

1.

19 pathways currently active in guiding care.

2.

6,730 patients placed on clinical pathways since FY 2016 launch.

3.

“Flags” built into electronic medical record alert providers when a patient is on a pathway or when the pathway has not yet been initiated.

4.

Patient and family advisers play key role in helping ensure “voice of the customer” in all pathways.

5.

New Tableau interactive dashboard allows providers to track progress on key outcomes with links to pathway-specific dashboards for more detailed information.



Christiana Care Library of Clinical Pathways

PATHWAY	SERVICE LINE	YEAR	PRIMARY GOAL
COPD	Acute Medicine	FY16	Reduce 30-day readmissions.
Opioid Withdrawal	Behavioral Health	FY16	Improve identification and treatment of patients at risk for opioid withdrawal.
Operable Stage 2 Non-Small-Cell Lung Cancer	Cancer Care	FY16	Improve compliance with evidence-based care.
NSTEMI	Heart & Vascular Health	FY16	Improve compliance with evidence-based medications and reduce 30-day readmissions.
Vertebral Fragility Fracture (VFF)	Musculoskeletal Health	FY16	Increase percentage of patients having bone density scans within six months.
Acute Ischemic Stroke	Neurosciences	FY16	Improve primary/comprehensive stroke measure compliance and functional outcomes at 90 days.
Type 2 Diabetes Management	Primary Care & Community Medicine	FY16	Improve compliance with diabetes evidence-based care.
Recurring Ventral Hernia	Surgical Services	FY16	Reduce length of stay.
Gestational Diabetes	Women & Children's Health	FY16	Increase two-hour glucose tolerance testing for at-risk patients.
Lower GI Bleed	Acute Medicine	FY17	Reduce length of stay, costs and readmissions.
Suicide Assessment	Behavioral Health	FY17	Increase percentage of patients screened for suicide risk.
Supportive Care of Oncology Patients	Cancer Care	FY17	Decrease emergency department visits and hospital admissions.
Syncope	Heart & Vascular Health	FY17	Reduce costs of care.
Hip Fracture	Musculoskeletal Health	FY17	Reduce length of stay and decrease costs.
Lumbar Disc Herniation and Radiculopathy	Musculoskeletal Health	FY17	Improve outcomes and patient experience, and reduce cost of care.
Uncomplicated Seizure	Neurosciences	FY17	Reduce inpatient admission rates.
Practice Transformation	Primary Care & Community Medicine	FY17	Improve care coordination and access for high-risk patients.
Periop Evaluation and Treatment Services (POETS)	Surgical Services	FY17	Improve patient optimization for surgery.
Triple I to Manage Early-Onset Sepsis	Women & Children's Health	FY17	Reduce term-newborn admissions to NICU.

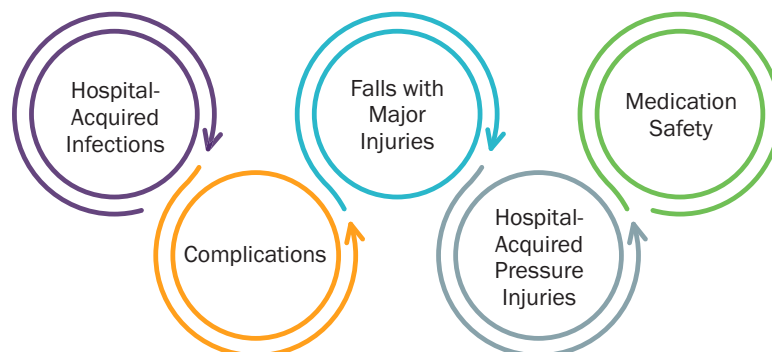
Moving the needle on preventable harm

Focused, robust efforts on advancing a Journey to Zero based on just culture principles are helping to continuously improve Christiana Care's preventable harm rate, decreasing it nearly 50 percent since fiscal year 2015. The launch of a new operating structure in July 2015, in which accountability for eliminating harm shifted to the nine service lines, has already resulted in 560 fewer patients harmed.

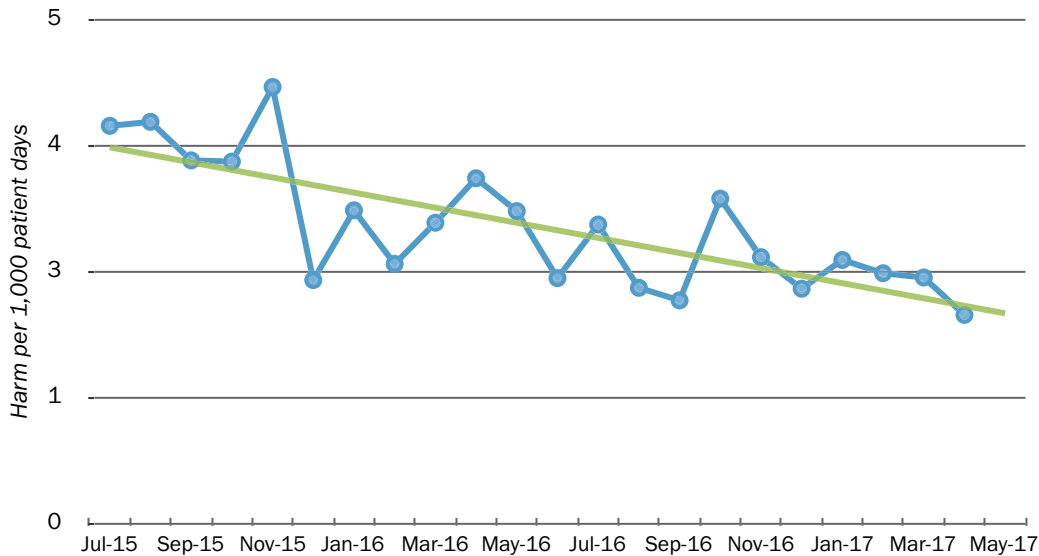
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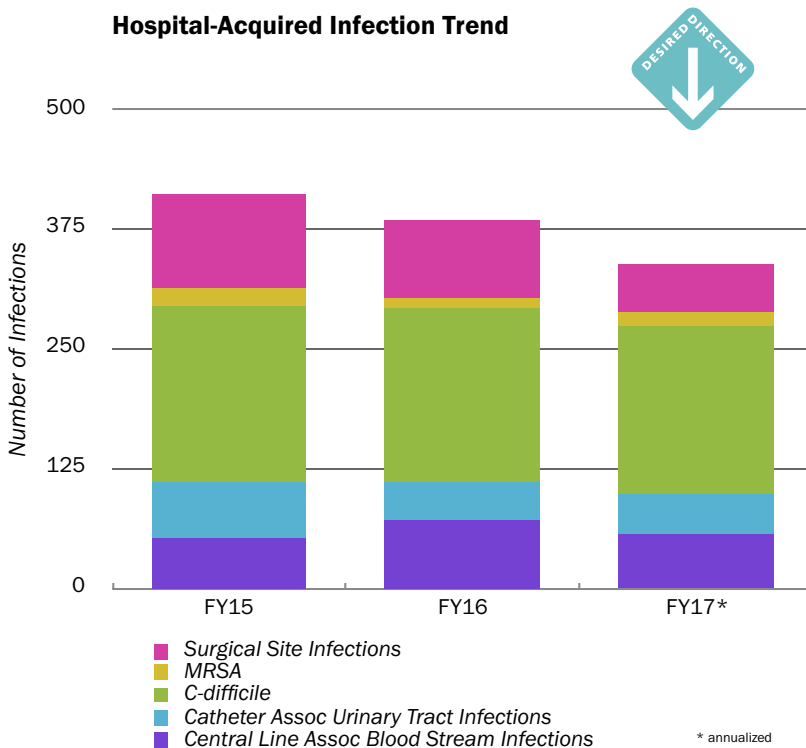
Since launching the Journey to Zero, Christiana Care has focused on eliminating preventable patient harm in five key areas:



Preventable Harm Rate



Hospital-Acquired Infection Trend



► **Hospital-acquired infections decrease by 18 percent**

Hospital-acquired infections, which lead to increased mortality and morbidity, prolong hospital stays, raise the cost of care and place us at financial risk for more than \$7 million under the Centers for Medicare & Medicaid Services pay for performance programs, remain our highest systemwide priority. Through the collaborative efforts of the Infection Prevention Committee, service line and essential service leadership and the patient care units, there have been 74 fewer cases of hospital acquired infections since fiscal year 2015, an 18 percent decrease.

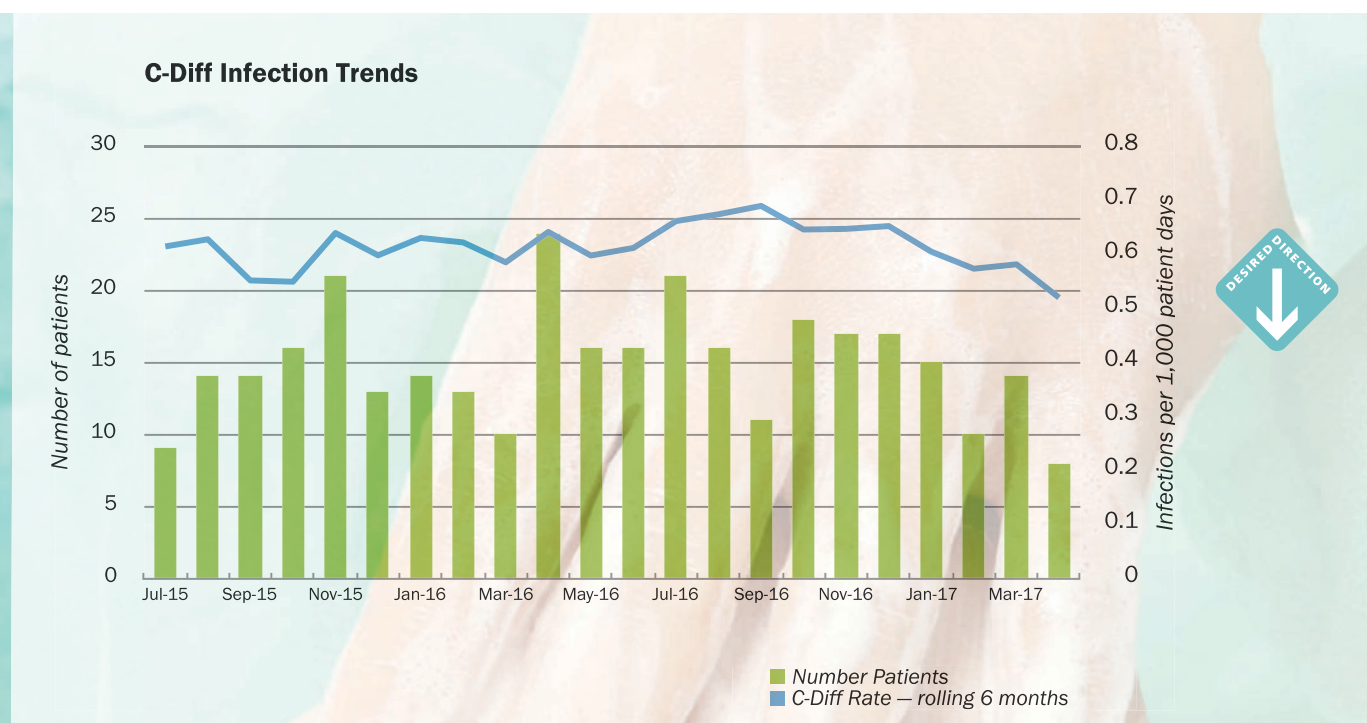
► **Tiger team drives C-diff decrease**

The incidence of Clostridium difficile (C-diff) infections continues to decrease due to an intervention bundle that includes environmental monitoring of room cleaning, improving staff awareness of C-diff rates, hand hygiene compliance, antibiotic stewardship, minimized use of proton pump inhibitors, and flags in the electronic health record to indicate a patient's history of C-diff and alert physicians about recent laxative use (which can lead to misclassifying a patient as having C-diff).

A C-diff “tiger team” was convened in March 2017 to address increased rates compared to FY 2016 and higher-than-expected rates at Wilmington Hospital. In accordance with the Society of Hospital Medicine’s Choosing Wisely

initiative, which encourages physicians to discuss the value of tests, treatments or procedures with patients before ordering them, the team zeroed in on testing stewardship, offering two recommendations:

- Do not perform urinalysis, urine or blood cultures or C-diff testing unless patients have signs or symptoms of infection, as false positive tests can lead to overdiagnosis and overtreatment. Source: Society for Healthcare Epidemiology of America
- Avoid testing for a C-diff infection in the absence of diarrhea. Source: Infectious Diseases Society of America



Since the beginning of this fiscal year, the C-diff infection rate has decreased by 62 percent.

► **Duke Protocol helps reduce surgical site infections following colon procedures by 67 percent**

After an increase in surgical site infections (SSI) for colon procedures was identified in 2015, an interdisciplinary team led by Surgical Services and Infection Prevention implemented a series of action steps, including an evidence-based preventive bundle known as the Duke Protocol:

► PRE-OPERATIVE:

- Mechanical bowel prep and oral antibiotics.
- Incision site cleaning with chlorahexidine cloth.
- Improved IV antibiotic prophylaxis.

► INTRA-OPERATIVE

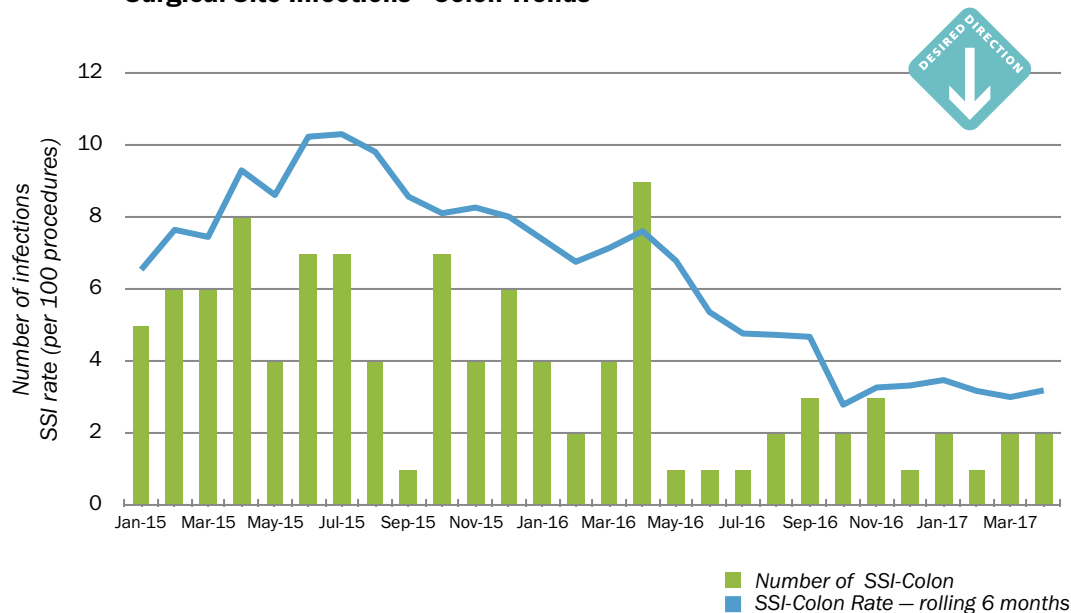
- Fascial wound protectors.
- Prior to fascial closure:
 - Glove & gown change.
 - Re-drape.
 - Clean instruments.

► POST-OPERATIVE

- Do not remove surgical dressing for 48 hours.
- Daily CHG wound cleansing until discharge.

The interventions were piloted at Wilmington Hospital in February 2016, and expanded to Christiana Hospital in May 2016. In the 12 months since full implementation, the number of surgical site infections following colon procedures decreased 67 percent, from 65 in calendar year 2015 to 21 in calendar year 2017 to date.

Surgical Site Infections - Colon Trends





► Zero Harm Awards

Christiana Care's Zero Harm Award recognizes the achievement of a patient care unit successfully reaching 12 consecutive months without patient harm in six key patient safety measures, including: central-line-associated bloodstream infection (CLABSI), catheter-associated urinary tract infection (CAUTI), Clostridium difficile (C-diff), falls with major injury, hospital-acquired pressure ulcer and methicillin-resistance Staphylococcus aureus (MRSA). In fiscal year 2017, 50 Zero Harm Awards were presented. Fifteen units achieved 24 consecutive months with zero harm.

CLABSI:

WILMINGTON HOSPITAL: 4N (Medical), 8S (Acute Care for the Elderly Unit, formerly 5N), Intensive Care Unit.

CHRISTIANA HOSPITAL: 5B (Medical), 5D (Medical).

CAUTI:

WILMINGTON HOSPITAL: 8S (*Acute Care for the Elderly*); Extended Stay Unit. **CHRISTIANA HOSPITAL:** 2C (Surgery), 4E (Cardiac Stepdown), 5A (Medical), 5D (*Medical*), 6E (*Medical*), Medical Intensive Care Unit, Transitional Medical Unit, Transitional Surgical Unit.

MRSA:

WILMINGTON HOSPITAL: 4W (*Surgical*), 6S (*Intensive Care*).

CHRISTIANA HOSPITAL: 2C (Surgery), 4A *Christiana (Pediatrics/GYN)*, 5A *Christiana (Medical)*, 5B (Medical), 5C (Medical Teaching), 5D (Medical), 5E (Heart Failure), 6B (Oncology), 6E (Medical); Bone Marrow Transplant Unit; *Neonatal Intensive Care Unit*, Neuro Critical Care Complex, *Surgical Critical Care Complex*, Transitional Surgical Unit, *Transitional Medical Unit*.

CLOSTRIDIUM DIFFICILE:

WILMINGTON HOSPITAL: 4W (*Surgical*), 7S (*Center for Advanced Joint Replacement*). **CHRISTIANA HOSPITAL:** 4C (Surgery/GYN), 5B (Medical).

HOSPITAL-ACQUIRED PRESSURE ULCER – STAGE 2+:

WILMINGTON HOSPITAL: 4W (*Surgical*), 7S (*Center for Advanced Joint Replacement*). **CHRISTIANA HOSPITAL:** 4C (Surgery/GYN), 5B (Medical).

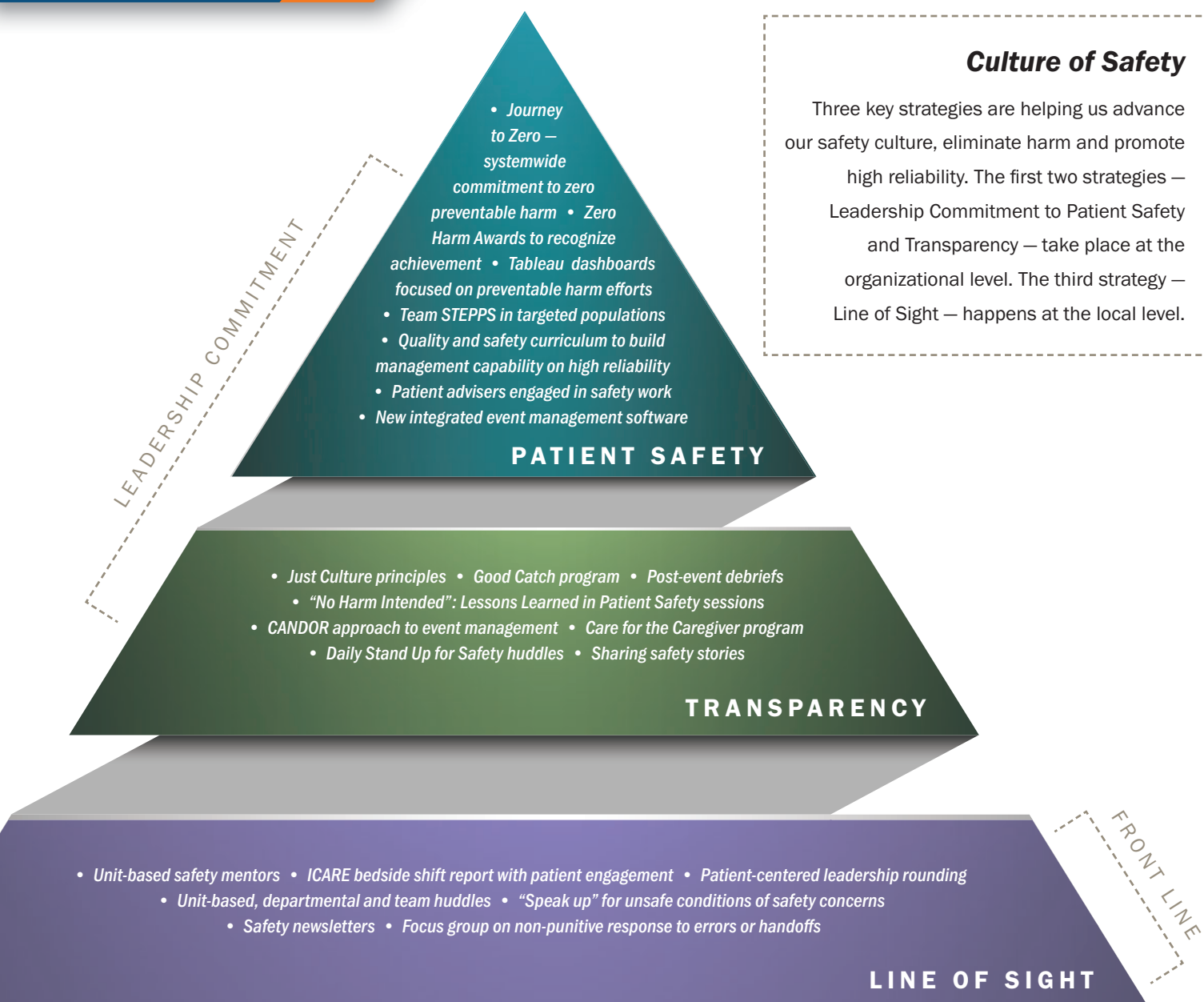
FALLS WITH MAJOR INJURY:

WILMINGTON HOSPITAL: 4N (Medical), 6S (*Intensive Care*).

CHRISTIANA HOSPITAL: 2C (Surgery), 3B/3C/4B *Christiana (Well Mom and Baby)*, 5B (Medical), 5C (*Medical*), 5D (Medical), 5E (*Heart Failure*), Emergency Department.

MIDDLETOWN EMERGENCY DEPARTMENT.

italic = 24 consecutive months with zero harm.



“

Our safety culture evolves from the daily actions — and interactions — of each and every member of the team. We must individually and collectively live up to The Christiana Care Way in our values and behaviors, and look for ways we can make the care we provide our patients safer and the culture in which we work even more strongly grounded in high reliability and just culture principles.”



MICHELE CAMPBELL, MSM, RN, CPHQ, FABC
VICE PRESIDENT, PATIENT SAFETY AND ACCREDITATION

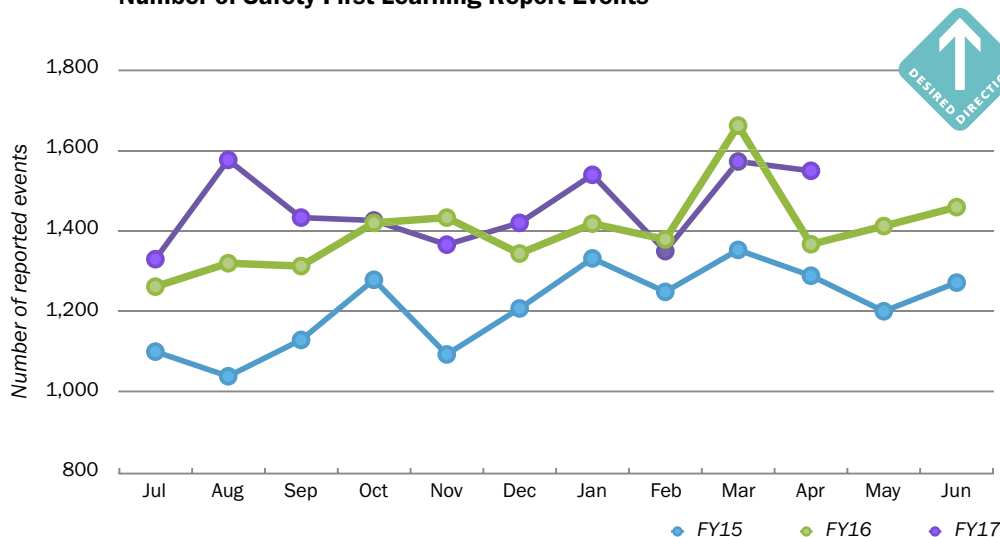
CANDOR approach supports patients, families and caregivers following unexpected harm

The integrated Communication and Optimal Resolution (CANDOR) approach following unexpected permanent harm or death has enhanced the timeliness and coordination of event review and analysis and increased transparency through reporting of Safety First Learning Reports by 23 percent since implementation in September 2015.

CANDOR is an Agency for Health Care Quality and Research (AHRQ) initiative to help hospitals be more transparent with patients and their families who experience patient safety events that contribute to or cause permanent injury or death. The approach includes candid, empathetic communication and timely resolution for patients and their family members. Christiana Care was one of just three health systems in the nation to partner with AHRQ and the Health Research & Education Trust of the American Hospital Association in a demonstration project to develop nationwide educational resources and tools for CANDOR implementation.

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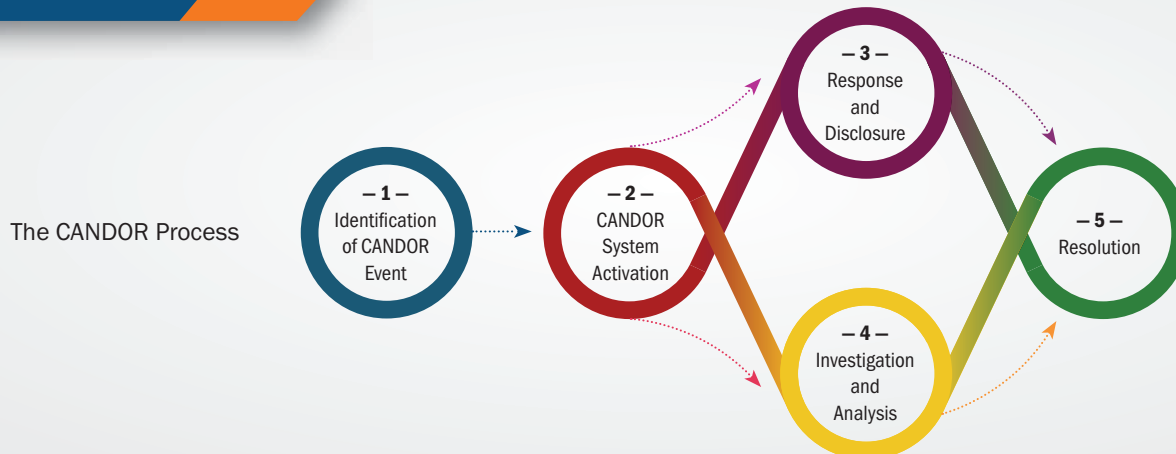
Number of Safety First Learning Report Events



KEY CANDOR IMPROVEMENTS TO EVENT MANAGEMENT:

- A more integrated approach to managing patient safety events.
- 23 percent increase in reporting through Safety First Learning Reports.
- Enhanced timeliness and coordination of event review and analysis.
- Formalized training on disclosure for the Medical-Dental Staff, residents, administrative and support staff.
- Physician-led disclosure to patient or family supported by communication coach.
- More patient engagement in the process.
- Earlier offer of compensation for care if care was determined unreasonable.
- Robust process to support staff involved in events.





Now in its second year at Christiana Care, the CANDOR process involves four main components:

► Event Reporting and Analysis

Use of the event reporting system or a phone call to Risk Management by staff is imperative when there is an unexpected event contributing to permanent harm or death. Enhanced education of event reporting led to a 23 percent increase in Safety First Learning Reports over the last year. The departments of Risk Management and Patient Safety collaborate with members of the health care team to gather facts about the event and the patient condition. This work may include a post-event debrief, one-on-one interviews, medical record reviews and other types of event analysis.

► Communication

A physician liaison and communication coaches are now trained to guide physicians through challenging discussions with patients and families to promote early disclosure of an event that contributes to patient harm. The goal is to initiate conversations with the patient or family within one hour of learning of the event.

► Care for the Caregiver

A formal Care for the Caregiver program has provided trained peer support for more than 275 “second victims” — medical personnel experiencing emotional distress related to an unanticipated patient safety event. Peer support is in addition to a tiered response plan drawing on additional resources such as the Employee Assistance Program and mental health professionals. Assessment for the need for Care for the Caregiver resources is now integrated into the organizational post-event debrief process.

► Resolution

Once event analysis is complete, a team of clinicians reviews the medical record and facts learned during the post-event debrief, including the patient and family perspective gleaned from interviews to determine whether the generally accepted practice standard was met. If it is determined that the care contributed to or caused harm, the Legal/Risk Management Department works with adjusters from the health system’s third-party administrator to develop a plan that may include compensation to the patient or to his or her family.



“

The CANDOR process provides more structure and framework to our previous disclosure policy regarding harm.”

STEPHEN PEARLMAN, M.D., MHSQS

QUALITY & SAFETY OFFICER, WOMEN & CHILDREN’S HEALTH SERVICE LINE

Employee recordable injury rate continues to decline

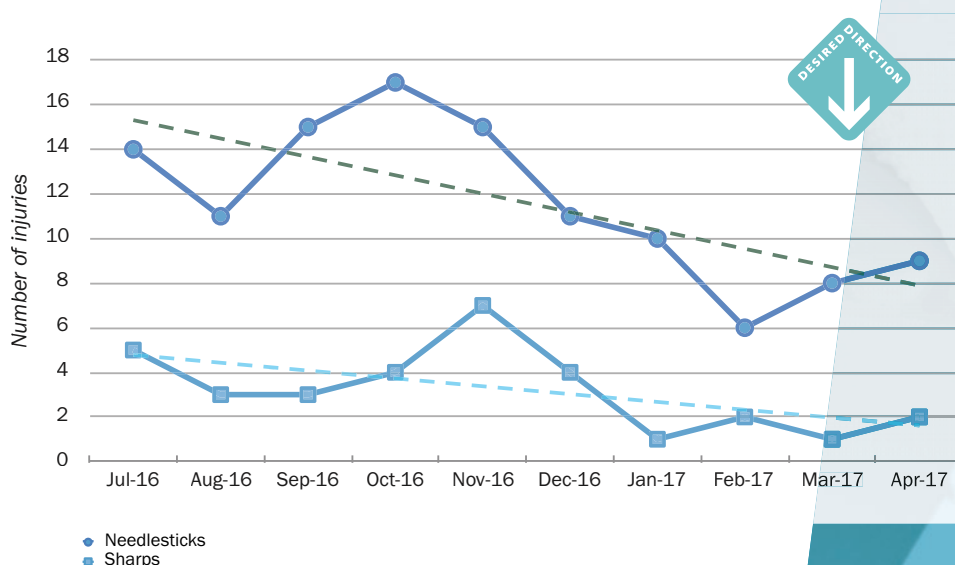
Needlesticks and sharps injuries decrease nearly 7 percent

Christiana Care's recordable injury rate continues its decline, decreasing from 4.48 injuries per 100 full-time equivalents in fiscal year 2016 to 4.23 as of May 2017. The health system also continues to come in well below the Bureau of Labor Statistics national recordable injury rate average of 6.0 for hospitals.

Although the number of needlestick and medical sharps injuries has declined nearly 7 percent over the last three years, further reduction remains a key priority for employee safety, as every percutaneous needle stick and sharps injury carries a risk of infection from blood-borne pathogens. Of particular focus in FY 2017: reducing needlestick injuries associated with butterfly blood-collection devices. While the butterfly shape of these winged infusion needles allows for greater flexibility when performing blood draws on "difficult" veins, they are difficult to dispose of in sharps collection containers and account for approximately 20 percent of needlestick and medical sharps-related injuries.

continued

Needlestick and Sharps Injuries Trend



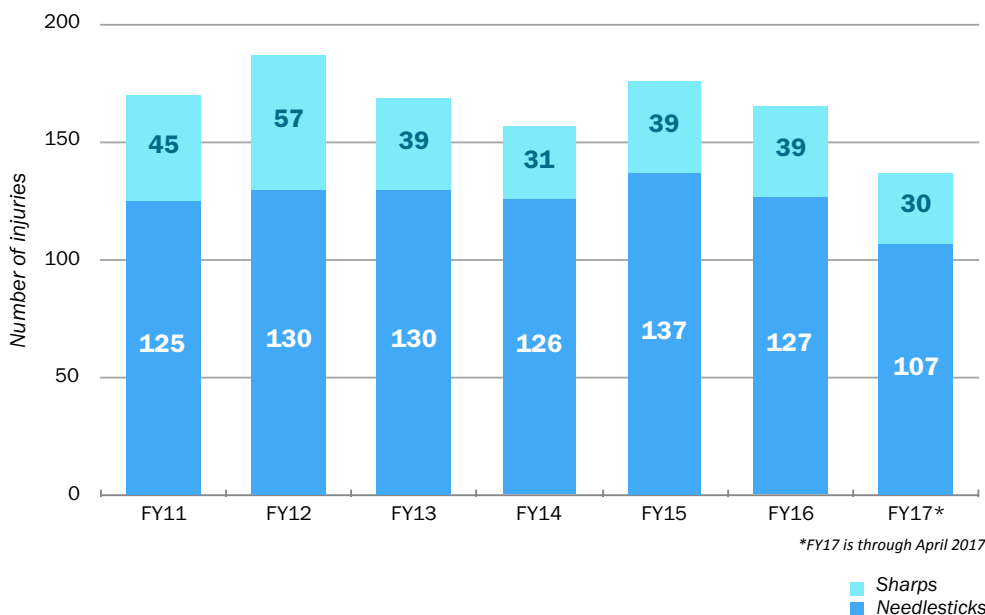
Interdisciplinary workgroups representing the Resident Quality and Safety Council, Perioperative Services and Nursing invested significant time toward identifying unique aspects related to needlestick injuries in specific practice environments and identifying various areas of opportunity. One effort was a trial of a more intuitive butterfly collection system. While it did not lead to frontline staff endorsement of a replacement device, the resulting ongoing education, communication and subsequent knowledge did help sustain a decrease in needlestick injuries from this type of blood draw.

These teams also focused on educating staff on proper disposal of needles and medical sharps and reinforcing safe behaviors associated with responsible handling of needles.

They developed a nonprocedural needlesticks presentation shared widely at staff meetings, during safety rounds and at the Stand Up for Safety huddles. A needlestick prevention video that captures the human aspect of needlestick injuries is being created to provide staff immediate, actionable items that can be incorporated into daily practice to reduce the risk of needlestick injuries.

Work continues on developing standards for passing needles and medical sharps, in addition to creating standardized communication that transcends all practice areas and captures the key behaviors associated with safer handling of needles and medical sharps.

Total Needlesticks and Sharps Injuries





Algorithm, streamlined business plan improve patient access to physical therapy for safer transitions to next level of care

Efforts by Rehabilitation Services to increase the completion rate of prescribed physical therapy (PT) plans of care for acute-care patients on medical/surgical units at Christiana Hospital are helping to improve mobility for patients as they prepare to safely transition from the hospital to a skilled nursing facility, inpatient rehabilitation or home for the next level of care in their recuperation. Over a 15-month period, the completion rate for physical therapy plans of care has already increased by 6 percent.

Key to the improvement was the creation of an algorithm for physical therapists to use during the initial patient consultation and after every therapy visit to determine the appropriate frequency of physical therapy sessions. The algorithm helps reduce variability in clinical decision making by standardizing recommended PT frequency based on best practices as determined by a team of therapists and Rehabilitation Services leadership. It takes into account the patient's level of function and ability to participate in physical therapy, mobility and safety needs to transfer to the next level of care.

By reducing the number of patients receiving higher than the recommended, clinically necessary frequency of physical therapy, Rehabilitation Services is able to more appropriately

schedule, and complete, the appropriate number of physical therapy sessions as indicated in the plan of care.

A revision to the consult policy reprioritizes physical therapy consultation requests received after noon to the following morning unless the patient is pending discharge and requires an immediate physical therapy assessment.

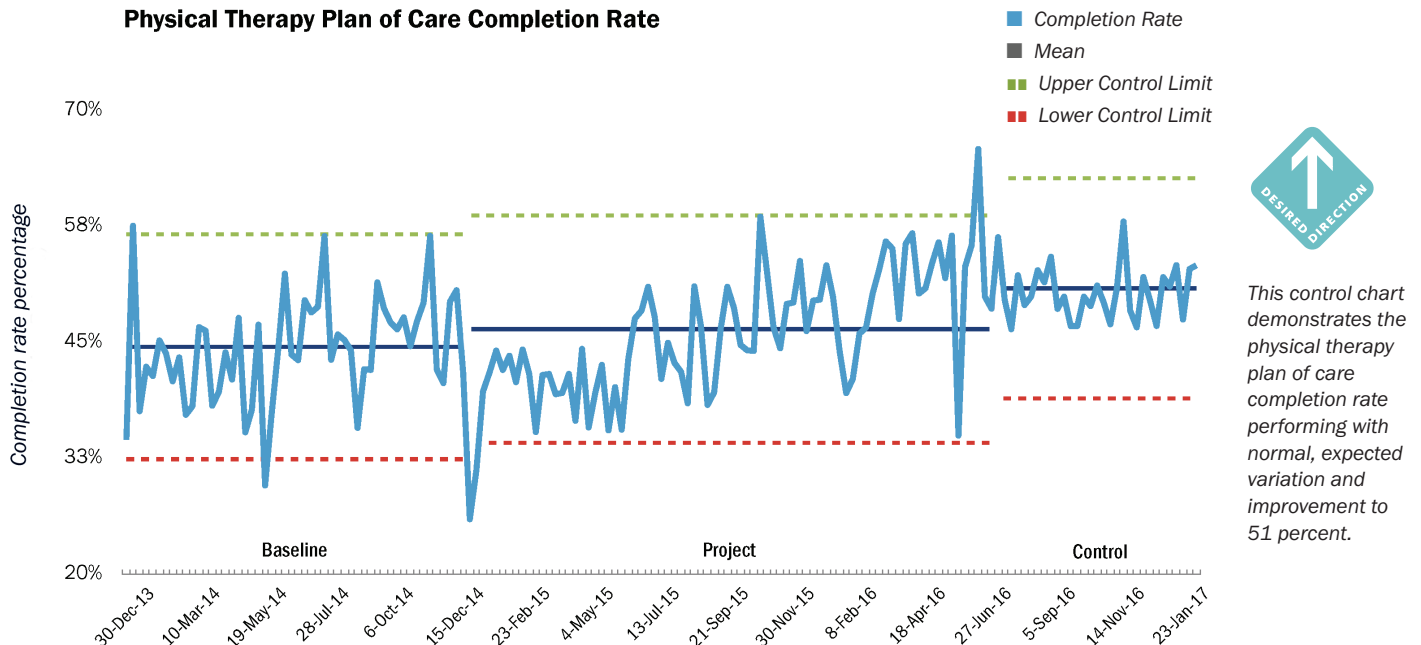
Through this project, it was realized that staffing was suboptimal to meet patient care demands as compared to similar hospitals. Further analysis concluded that additional staffing was required to improve patient access to physical therapy. By adding two PT assistants to focus solely on treatment sessions with frequency determined via the algorithm, and by no longer pulling physical therapists from scheduled treatment sessions to conduct same-day nonprioritized consultations, the team is able to focus more directly on guiding those patients already on the schedule through their plans of care, preparing them for safe and timely discharge.

Considering the many higher priority variables experienced in the acute-care setting, such as required testing/labs or sudden change in patient medical status, the statistically significant improvement in PT plan of care completion rate was recognized and allowed for greater patient access to physical therapy care.

continued

Project Highlights

Physical Therapy Plan of Care Completion Rate



Robust reporting, effective issue resolution increase barcode scanning rates, heighten reliability in medication administration

For the last decade, through the use of smart IV pumps, computerized physician order entry (CPOE) and a robust barcode scanning process, Christiana Care has been on the cutting edge of bar code medication administration (BCMA). Barcode scanning technology, which is proven to prevent medication errors from reaching the patient, is crucial in a health system that administers as many as six million medication doses each year.

To advance the goal to eliminate preventable patient harm — and in preparation for new interoperability scanning and pump programming technology that programs smart IV pumps directly through the CPOE order — Christiana Care's Medication Safety team is now leading systemwide efforts to make the scanning program more robust and reliable by improving and sustaining the systemwide BCMA scan rate from an average of 95.5 to a targeted scan rate of 99 percent.*

The renewed vigor to increase BCMA scanning rates is part of a three-pronged Medication Safety Strategic Plan, which includes improving medication management during transitions of care, safeguarding processes for high-alert medications or highly utilized workflows with demonstrated error potential and optimizing the capabilities of medication-related technologies.

In a recent successful pilot program, Christiana Hospital's 4D surgical unit exceeded its goal to improve its mean BCMA scanning rates by 50 percent over baseline from 93 percent, achieving a 97.5 percent scanning rate in one six-month period. With 4D's leadership, and a strong commitment by nursing to improve BCMA and medication safety, a number of patient care units have also now surpassed the average scan rate of 95.5 percent as the system sets its sights on 99 percent compliance across the board.

continued

*The remaining 1 percent takes into account downtime in wireless connectivity, unscannable (missing or smudged) barcodes or scanning issues caused by multiple barcodes placed on products by manufacturers.



Driving this highly reliable BCMA process is a renewed system-wide focus on medication safety, including heightened awareness to change the culture among staff regarding the criticality of barcode scanning as a safety mechanism; a new, more accurate reporting process through creation of a medication safety dashboard; revamped housewide training for all nursing staff on the urgency of BCMA compliance and in situ simulation training on equipment and processes specific to each unit; heightened collaboration with the pharmacy on

reporting and issue resolution and a standardized process for collecting unscannable barcodes; and monthly observations to monitor compliance.

“Many staff didn’t understand that barcode scanning was a safety mechanism; they saw it just for charting,” said Medication Safety Officer Dean Bennett, RPh, CPHQ, LSSGB. “We are working to change that culture through education and storytelling.”

With as many as 6 million medication doses each year, increasing the BCMA scanning rate from 93 percent to 99 percent will reduce the number of unscanned doses system-wide by about 360,000.

“Through robust reporting and effective issue resolution with the scanning process, we are optimizing our use of BCMA to prevent medication errors and harm as a high reliability organization,” said Bennett. “The more doses we scan before administration, the more the technology can prevent an error from reaching the patient.”

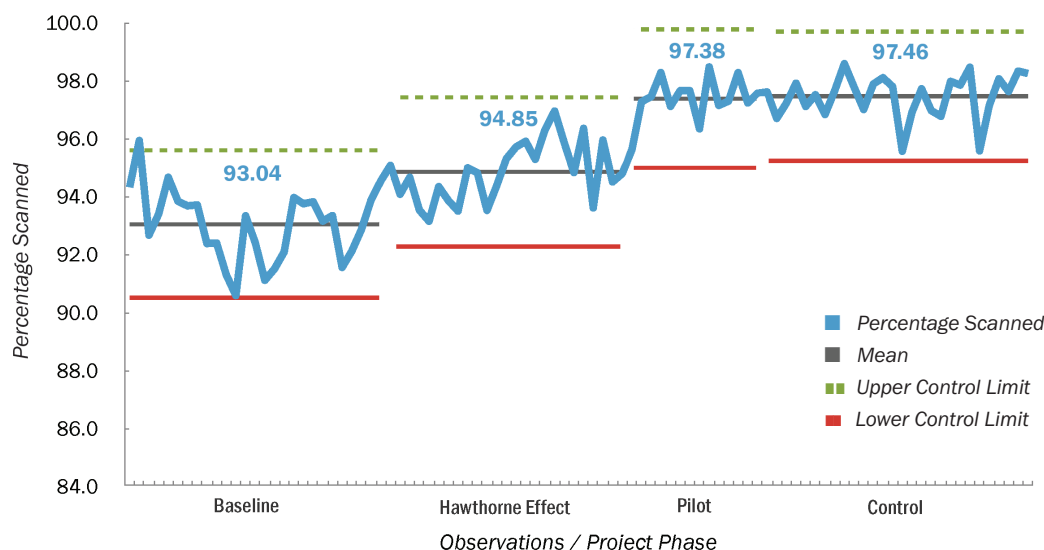


“

By preventing medication errors,
we prevent associated harm.”

DEAN BENNETT, RPH, CPHQ, LSSGB
MEDICATION SAFETY OFFICER

Percentage of Medications Scanned on 4D by Project Phase



Incidental lung nodule follow-up program streamlines communication to enhance quality and safety of care

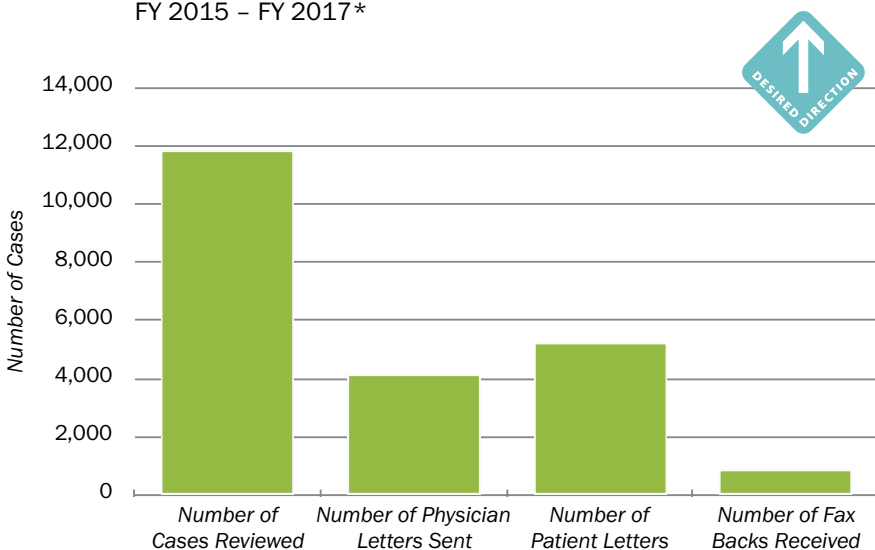


Christiana Care's enhanced handoff communication process for incidentally diagnosed lung nodules (IDLNs) — the first of its kind in the nation — is addressing a National Patient Safety Goal to improve communication regarding important test results to the right staff person on time. The coordinated, multispecialty approach identifies patients with IDLNs, notifies them and their physicians of the findings and the possible need for further testing, and tracks that patients receive appropriate, timely, evidence-based follow-up.

Now three years into the program, more than 10,350 patients with incidentally diagnosed lung nodules are being followed in a new customized population health

continued

Incidental Nodule Cases Identified
FY 2015 – FY 2017*



*Through June 16, 2017



“This innovative program illustrates our commitment to quality and safety and doing what is right: providing the right information, to the right person, at the right time. We have the potential to impact hundreds of lives.”

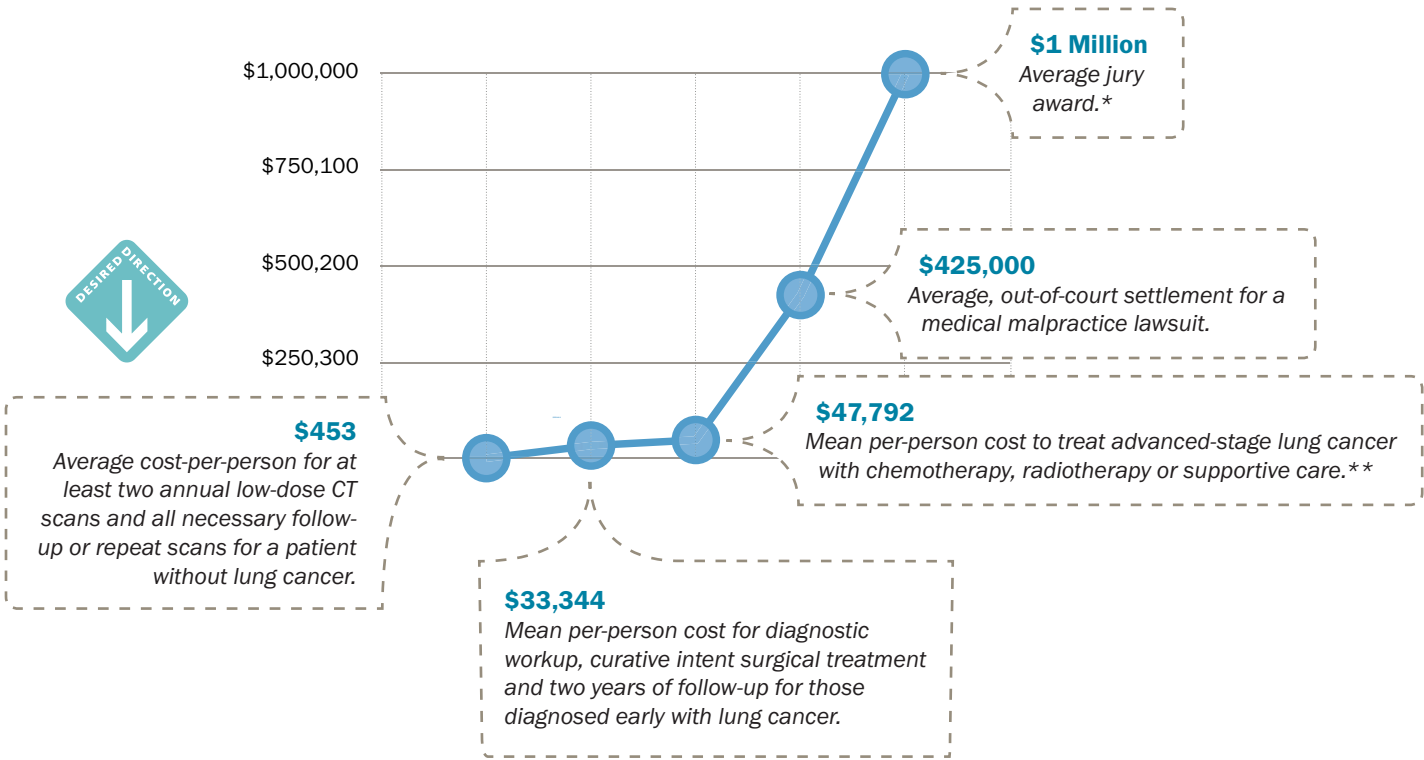
KERT ANZILOTTI, M.D., MBA
CHIEF MEDICAL OFFICER ACUTE CARE

database, and the program is being credited with 15 documented “early interventions” positively contributing to optimal outcomes.

Lung nodules — those detected by diagnostic imaging done for another purpose, such as those to check on broken ribs or to check on exacerbation of chronic obstructive pulmonary disease — are a common, incidental finding, with estimates ranging anywhere from 150,000 to 1 million per year nationwide. The majority — 96 percent — are noncancerous, but they do require follow-up.

For those patients who learn years later of a cancer that could have been confirmed and treated earlier had findings of the lung nodule been appropriately communicated and follow-up initiated, the lack of clear-cut recommendations and high variation in reporting practices are significant concerns. Inconsistent management of IDLNs creates gaps in care resulting in a multitude of ethical, legal and financial implications.

The IDLN program aligns with the triple aim focus on preventable care to optimize health, improve patient experience and reduce costs of care. Inadequate follow-up can delay a cancer diagnosis and treatment, resulting in suboptimal outcomes. **Literature demonstrates it is more cost effective to order multiple screening scans versus treating a patient with lung cancer.**



* Source: Length and process of a medical malpractice suit. LawFirms.com

** Source: Wynes, M. W., PhD. (2014, September 24). Less costly to screen for and treat early-stage lung than to treat late-stage lung cancer.

Standards of care leading to decrease in nonguideline red blood cell transfusions optimize outcomes for patients

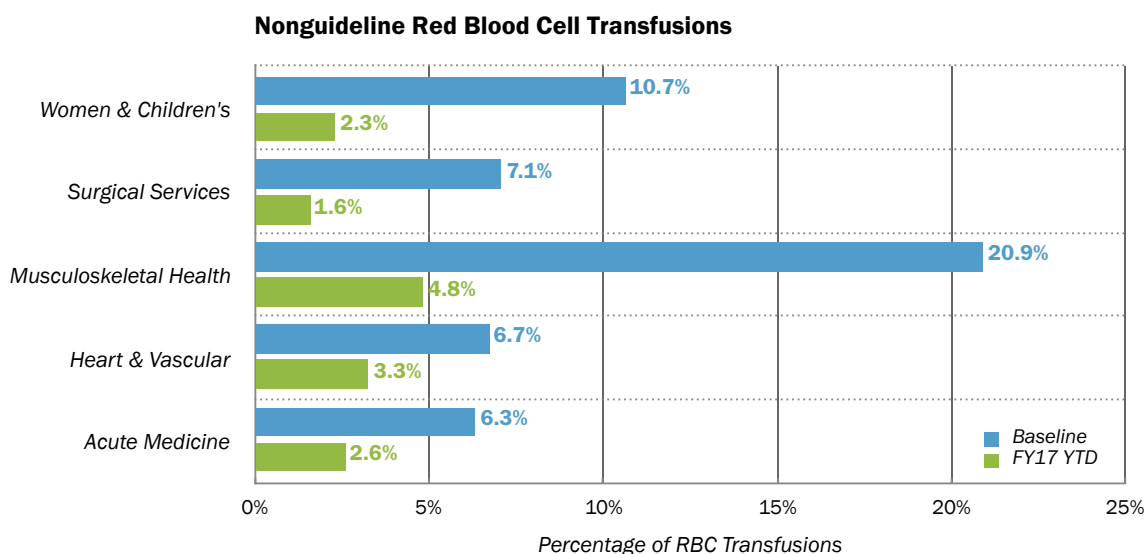
A systemwide focus on guideline-based red blood cell (RBC) unit transfusion is improving patient safety and quality of care by reducing the number of transfusions that do not meet clinical practice guidelines. A concerted effort across all service lines is helping to decrease the risk of infection and noninfectious complications of transfusion, such as lung injury, volume overload, renal injury, multisystem organ failure and immunosuppression.

Blood transfusion is the most frequently performed procedure reported by U.S. hospitals, despite evidence that morbidity and mortality increase with each unit of blood transfused. Clinical trials in high-risk patients (critical care, cardiac surgery, orthopaedics, GI bleed and sepsis) show a lack of benefit to the patient from transfusion under most circumstances.

A number of interventions are contributing to Christiana Care's success in reducing nonguideline transfusions and decreasing the average number of RBC units transfused per patient:

- ▶ Established RBC transfusion guidelines.
- ▶ Modified computerized physician order entry (CPOE) system:
 - Updated RBC transfusion indications.
 - Changed default number of RBC units from two to one.
- ▶ Implemented clinician education on patient blood management practices and provided feedback on compliance.
- ▶ Implemented thromboelastography for testing the efficiency of blood coagulation.

continued



- ▶ Enhanced reporting (data mining and analysis) including annual operating plan dashboard.
- ▶ Eliminated daily labs based on Choosing Wisely initiative that promotes conversations between providers and patients on the value of tests, treatments and therapies.
- ▶ Updated surgical blood ordering schedule.
- ▶ Piloted preoperative anemia evaluation service.

Key to the program's success were creation of a dedicated intranet page to share resources; clinician education on

transfusion guidelines and on the impact of unnecessary transfusions; and feedback provided to physicians on their compliance. Service lines are engaged in special projects, such as those for GI blood resource utilization and postpartum hemorrhage.

Future goals to continue the success of this work include expanding preoperative anemia optimization and duplicating the work done for RBC to include all blood components, including plasma utilization.

VNA partners with clinicians and patients to exceed star goal on home health quality rating

A concentrated 12-month agency-wide focus to engage both clinicians and patients as partners in the Integrated Care Management Model helped Christiana Care Visiting Nurse Association (VNA) improve care transitions, patient outcomes and patient engagement, and accelerate the agency's quality rating on the Centers for Medicare & Medicaid Services (CMS) star rating system by one and a half stars. The improvement

exceeded the agency's one-star-increase goal, raising the CMS rating from two and a half stars in 2014 to a full four stars by July 2016. Sights are now set for a full five-star rating in the coming year based on the plan's success.

Certain that VNA's quality of care deserved higher marks on the CMS system to guide the public in comparing quality of care among home health agencies, an interdisciplinary team of

continued

CMS Star Ratings :

Quality of Care ★ ★ ★ ★ ★

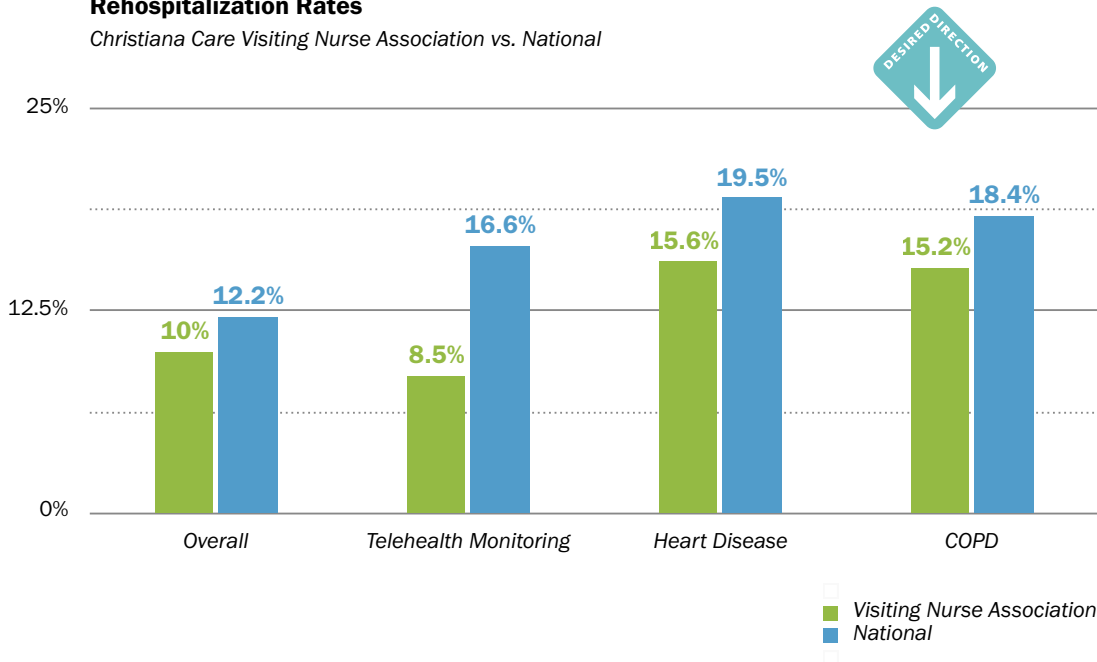
Patient Satisfaction ★ ★ ★ ★ ★

Ratings reported by CMS October 2015 - September 2016

Project Highlights

Rehospitalization Rates

Christiana Care Visiting Nurse Association vs. National



nurses, physical therapists, educators, quality specialists and administrators implemented a plan to improve performance on six clinical outcomes (ambulation, transferring, bathing, pain interfering with activity, shortness of breath and acute care hospitalization) and three process measures (timely initiation of care, drug education on all medications provided to patients/caregivers and influenza immunization received for current flu season).

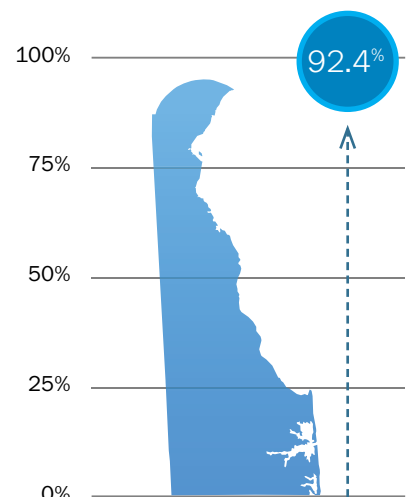
Education to increase direct care clinicians' knowledge of and accuracy in the Outcome Assessment Information Set (OASIS), the required data collection set for home health and CMS claims, was key to advancing in the star rating process. An immediate impact was realized, and, over time, manager and clinician knowledge continued to improve and discharge reviews became more efficient.

In addition to educating direct care staff on the person-centered, evidence-based Sutter Health's Integrated Care Management Model, VNA reports a 22 percent improvement in metrics for pain at discharge following pain and palliative care education for both patients and caregivers.

To sustain improvement and progress on its journey to five stars, VNA has implemented team scorecards and debriefs. Managers now receive automated daily alerts on discharge measures and interact regularly with direct care clinicians to ensure accuracy of OASIS documentation measures. By engaging patients as partners with a focus on person-centered goals, VNA has achieved a direct increase in patient self-motivation toward healthy behaviors they can adopt at home for improved clinical outcomes.

Timeliness of Service

VNA Care Provided Statewide Within 48 Hours



Ratings reported by SHP
April 2016 - March 2017

First-account provider ratings and comments enhance transparency and improve patient experience, quality and safety of care

► <https://christianacare.org/about/whoweare/doctors/guide-to-surveys-and-ratings/>

In its first four months, Christiana Care’s new Clinician Transparency Program registered more than 22,000 hits from consumers looking for online reviews by other patients on the quality, safety and bedside manner of their physicians. Ratings and comments submitted by patients are currently available on approximately 400 Christiana Care physicians, including primary care and women’s health providers, medical specialists and surgeons. That number continues to increase.

Unlike other online review websites, which rank physicians against one another, on Christiana Care’s website, each physician stands independently with a rating of up to five stars

and comments based on a rolling set of the past 12 months’ responses. The evaluation measures are nationally tested, 100 percent of patient responses are validated and the provider must have at least 30 comments or star ratings before any are published.

“Giving consumers all the available information to make informed decisions about their care is our main priority,” said Shawn Smith, MBA, vice president of Patient Experience. “The information we used reflects the strength of relationships each clinician has with his or her patients. We chose to include outcomes that drive quality, safety and patient-centeredness. Transparency is changing the way we deliver value to our community.”

★ Reviews

The Patient Experience Rating score is an average of all responses to provider related questions on our nationally-recognized Patient Satisfaction Survey. Responses are measured on a scale of 1 to 5, with 5 being the best score. Comments also are gathered from our Patient Satisfaction Survey and are posted following strict guidelines. Patients are de-identified for confidentiality and...

Show more ▼

About our Survey

4.9 ★★★★★ My confidence in provider	4.8 ★★★★★ Amount of time spent with me
4.9 ★★★★★ Gave good medication information	4.8 ★★★★★ Included me in treatment decisions
4.9 ★★★★★ Used easy to understand words	4.8 ★★★★★ Gave satisfactory follow up instructions
4.9 ★★★★★ Likelihood of Recommending this Provider	4.9 ★★★★★ Friendliness and Courtesy of Provider
4.9 ★★★★★ Showed concern for my concerns	4.9 ★★★★★ Explained my condition well

“



Top-performing health systems around the country are increasing the transparency they provide — transparency around quality, safety, financial performance — and also what to expect from the people who provide care.”

JANICE E. NEVIN, M.D., MPH
PRESIDENT AND CHIEF EXECUTIVE OFFICER

Shifting effort from quantity to quality improves patient experience scores with iRound

Using a more strategic approach supporting accountability and improvements to Patient Experience and The Christiana Care Way, Christiana Care incorporated analytics and market research to develop a methodology measuring the quality, not quantity, of the impact of iRound technology on patient experience scores. iRound is an iPad-based technology that supports purposeful rounding and real-time response to a wide variety of patient needs. iRound questions were updated to align with each service line, and two custom questions were added to the Press Ganey patient experience survey to determine if the patient was included in the bedside shift report and rounded on by a nurse leader.

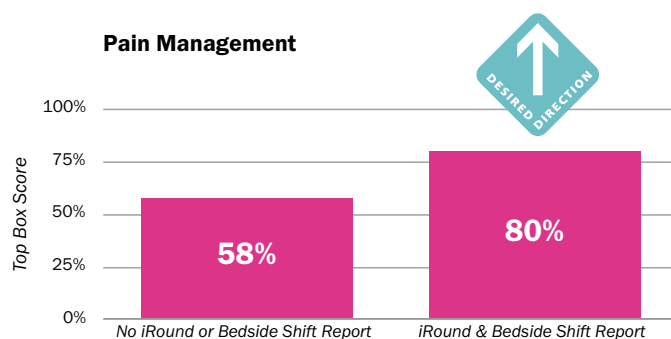
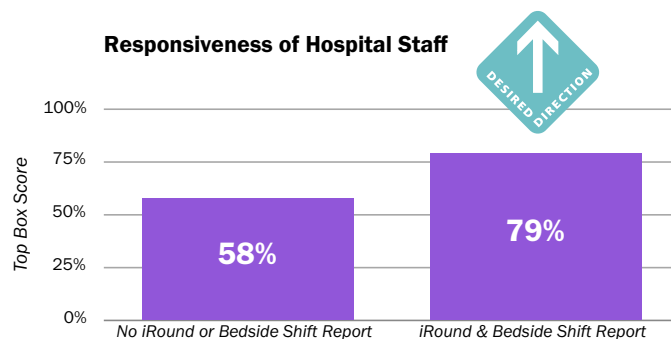
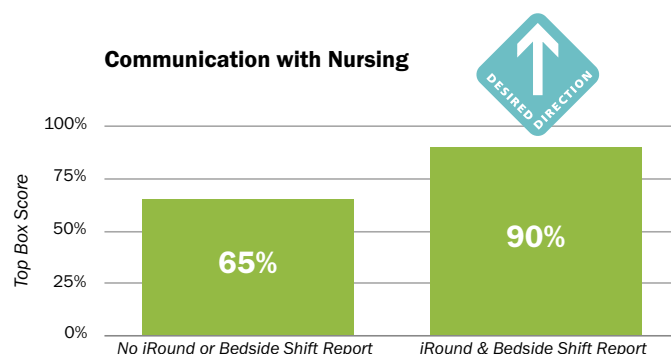
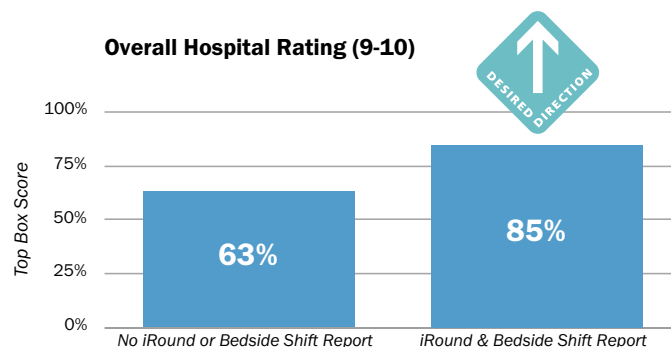
The overall hospital rating by patients who were both visited by a nurse manager and included in the bedside shift report was 22 percent higher on the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) than the rating from patients who did not receive an iRound visit.

Significant to the increase was a focus on culture and behavior changes that gives nurse managers a key role in decision making when it comes to enhancing the patient experience and encourages purposeful rounds leading to empathetic connections between nursing leaders and patients.

iRound visits and inclusion in bedside shift report were associated with a 90 percent score in the Communication with Nurses component of the patient experience survey, compared to just 65 percent for patients who did not receive an iRound visit.

Patients who answered “yes” to both questions (rounded on by a nurse leader and included in bedside shift report process) also gave higher ratings for Responsiveness of Hospital Staff and reported being more pleased with their pain management.

In addition to supporting accountability and improvement to patient experience, iRound technology is now also driving performance improvement at the unit and system levels. Nurse managers use iRound capabilities to assess unit compliance with Joint Commission standards and document and track compliance with assessing patient pain levels.



Christiana Care Way Awards recognize improvement science innovations to advance quality, safety and high reliability



The Christiana Care Way President's Award for 2016 went to "Driving AOP Improvement Through an Interactive Dashboard."

The 2016 Christiana Care Way President's Award was awarded to "Driving AOP Improvement Through an Interactive Dashboard," a collaboration to design and build an interactive dashboard that increases transparency, improves access to actionable data to drive progress toward system aims, and creates one source of truth to support patient care unit reporting, pathway reporting and numerous other dashboards and teams.

Newly renamed the Christiana Care Way Awards, the original program dates back to the Performance Improvement Awards launched in 2002. The program challenges physicians, nurses and staff to identify opportunities for improvement, then collaborate in using the Plan-Do-Check-Act or Lean Six Sigma Define, Measure, Analyze, Improve and Control models to develop and execute plans that achieve positive results. Of the

145 sets of storyboards submitted for the 2016 contest, 43 winners were announced at the January 2017 event. During the awards program, Christiana Care also recognized 127 Zero Harm Awards, which recognize the achievement of zero preventable patient harm for 12 consecutive months for any single harm measure (see page 19 for complete listing); and three individual Good Catch Award winners for 2016, whose vigilance and awareness of the environment that affects patient care helps prevent patient harm.

"The quantity and diversity of the submissions have always aligned to Christiana Care's annual goals and operating plans, and the constant changes and improvements inspire innovation and cooperation," said Sharon Anderson, MS, BSN, RN, FACHE, chief population health officer, senior vice president, Quality and Patient Safety and president of Carelink CareNow.

AWARD	PROJECT TITLE	DESCRIPTION AND RESULTS
► President's Award	Driving AOP Improvement Through an Interactive Dashboard	The Office of Quality, Patient Safety and Population Health Management staff, Enterprise Information Management, other Information Technology staff and service line representatives collaborated to design and build an interactive dashboard that increases transparency, improves access to actionable data to drive progress toward system aims and creates one source of truth. Accessed an average of 93 times per day, the AOP Dashboard provides actionable information to help service lines and patient care units reach their goals.
► Transformation Gold Award	Sustaining the Gain with Falls	The Center for Advanced Joint Replacement experienced eight patient falls in the two years following their September 2013 relocation to the renovated Wilmington Hospital. After focusing on sustained use of a fall prevention strategy, the center decreased falls by 50 percent and sustained that improvement through 2016.
► Transformation Silver Award	Goals of Care — A Patient-Centered Approach to Treatment	Historically, Goals of Care were documented systemwide an average of 423 times each month. After implementing a permanent location for this documentation, Goals of Care increased by 25.5 percent (average of 531 monthly). Since linking changes in DNR to Goals of Care documentation, there has been a systemwide increase in documentation by 150 percent (average of 1,059 monthly).
► Best Learning Through Failure Award	Post-op Medication Reconciliation for Surgical Inpatients	A perioperative services team trialed the Transfer Medication Reconciliation function in PowerChart, with a post-operative medication reconciliation target of 75 percent. The Wilmington OR trial showed an increase from 0 to 40 percent; the Christiana OR trial only improved to 5.8 percent. Results analysis identified opportunities in admission med reconciliation, and led the team to make incremental changes in rolling out the process to surgical PAs and residents.
► Value Award	Choosing Wisely — Decision Making for Ordering Clinically Appropriate Lab Tests	By removing the ability to order automatically recurring labs in the computerized physician order entry (CPOE) system, the volume of laboratory tests for basic metabolic panels and complete blood counts decreased 16.8 percent (census adjusted order rate per patient of 1.49 to 1.24) in five months. In one year, the change is equivalent to a reduction of more than 60,000 orders.
► Optimal Health Safety Gold Award	Let's C-difference in Our Care	The Transitional Surgical Unit collaborated with Environmental Services and Infection Control to use Tru-D for all terminal cleans, educate staff & patient/families, implement smart Clostridium difficile (C-diff) testing guidelines, revitalize hand hygiene surveillance and strictly adhere to enteric contact precautions to reduce their c-diff rate from a baseline 12.9 per 1,000 patient days. The unit did not have a C-diff case between August 2015 and July 2016.



The Christiana Care

AWARD	PROJECT TITLE	DESCRIPTION AND RESULTS
► Optimal Health Safety Silver Award	OB Hemorrhage — Are You Ready?	An OB Hemorrhage Bundle toolkit, and the 4R approach (Readiness, Recognition & prevention, Response and Reporting) were implemented to reduce severe maternal morbidity events related to postpartum hemorrhage. The number of events decreased 80 percent (from 10 to two), and maternal red-blood-cell transfusions decreased 65 percent.
► Optimal Health Safety Bronze Award	Does It Fit? Improving Physician N95 Fit-Testing Compliance	Occupational Safety redefined and increased availability of the OSHA-required fit-test process for N95 respirator or powered air-purifying respirator (PAPR) for care of patients requiring airborne isolation. As of August 2016, 49 percent of eligible Medical-Dental Staff and 78 percent of residents are up-to-date with fit-testing/PAPR. The number of fit-tests performed by Occupational Safety increased 10 percent overall.
► Optimal Health Quality Gold Award	Developing the Joint Replacement Preoperative Assessment Center (JPAC)	The Joint Replacement Preoperative Assessment Center's (JPAC) pilot program provides focused and coordinated clinical care, evaluation, education and discharge planning prior to a patient's surgical admission. The results: 60-day readmission rates were 30 percent lower for patients in the JPAC pilot compared to those not in the pilot; 97 percent of patients in the pilot felt it was convenient to have their medical clearance, preoperative education and discharge planning in one location, and 96 percent felt more prepared for their surgery following their JPAC appointment.
► Optimal Health Quality Silver Award	Clinical Care Pathway to Transform NSTEMI Care Delivery in Acute Hospital Setting	The Heart & Vascular Service Line developed and implemented a patient-centered, value-driven clinical care pathway focused on the optimal diagnosis and treatment of patients with a non-ST segment elevation myocardial infarction (NSTEMI) diagnosis. NSTEMI pathway interventions resulted in turnaround time reductions of 36 minutes to activate chest pain orders, 15 minutes for the first troponin and more than two hours between the first and second troponin values. Compliance with best practice medications increased 9 percent.
► Optimal Health Quality Bronze Award	In-Hospital Stroke Response Team	Interventions including Rapid Response Team protocols and Neuro Critical Care response to all in-house stroke alerts, as well as dedicated stroke alert supplies placed in CT Scan, reduced the time from resident call to IV Alteplase administration from 72 to 41 minutes.
► Optimal Health Quality Honorable Mention Award	Multidisciplinary Trach Team Decannulation Project	To improve quality of care and reduce length of stay (LOS) for tracheostomized patients, a Tracheostomy Decannulation Protocol that enables Respiratory and Speech Therapy staff to manage aspects of the process to decannulation was implemented. Median hospital LOS, vent-free days to decannulation and time to decannulation decreased by five days. The days to tracheostomy capping from ventilator liberation decreased 2.4 days, and days to decannulation from capping decreased 2.6 days.
► Exceptional Experience Gold Award	Time to First Hold: Decreasing Time to Parents' First Hold of Infants in the NICU	Early skin-to-skin contact between newborns and parents is shown to have multiple health benefits. A Neonatal Intensive Care Unit (NICU) team implemented staff and parent education, and created standard work for the first hold process and reduced the median time to first hold for newborns requiring continuous positive airway pressure or ventilation from 6.4 to 1.2 days.
► Exceptional Experience Silver Award	Culture of Quiet: A Team Approach to Quiet Environment	The Center for Advanced Joint Replacement created a Quiet Ambassador Team to observe the environment and develop interventions to reduce noise. Quiet environment scores increased from 68 to 76 percent. The team's Quiet Ambassador badge is being expanded for use to all employees.
► Organizational Vitality Award	Improving the Return on Investment in Robotic Surgery	A multidisciplinary team focused on processes in two Christiana Hospital operating rooms dedicated for robotic surgery to improve workflow and instrument set standardization. Procedure turnover time was reduced by 10 minutes. The standardization of the robotic instrument set resulted in a 54 percent reduction in sterilized robotic instrument inventory, yielding a cost savings of \$87,200.
► Strategic Partnerships Gold Award	SNF Collaboration to Improve Outcomes	Carelink CareNow leaders and staff teamed with the Transition of Care Consortium and staff from 17 skilled nursing facilities (SNFs) to reduce unnecessary hospital utilization and improve quality of care for patients discharged from acute care to skilled nursing facilities. Weekly case reviews and implementation of protocols to address opportunities resulted in a statistically significant decrease in SNF average length of stay, from 22.6 days to 18.9 days. Estimated savings in the first three months exceed \$657,000.
► Strategic Partnerships Silver Award	Preparing for Ebola and Other Emerging Infections	After the 2014 ebola virus diagnosis in Texas, an interdisciplinary steer and subcommittees worked to improve Christiana Care's preparedness to care for patients presenting with highly contagious diseases such as ebola. Christiana Care was designated an Ebola Assessment Hospital in December 2015. The system was ultimately tested in April 2016 when the special isolation unit was successfully activated to rule out a suspected case of ebola (the patient was ultimately diagnosed with malaria).
► Extraordinary People Award	Transforming Nursing Care Delivery	To ensure that Christiana Care's nursing model supports the nursing top-of-licensure focus, a project team consisting of Christiana Hospital 5D staff, Wilmington Hospital 4N staff and key stakeholders took a deeper look into the nursing care delivery process. The percent of RN time spent in non-value-added activities decreased from 34 to 28 percent, and the percent of RN time spent in documentation decreased from 15 to 10.4 percent.
► Innovative Tools Gold Award	1.8 Billion Brain Cells Saved	Neurosciences and the Wilmington Emergency Department introduced the use of an iPad for videoconferencing with the stroke neurologist to reduce door-to-needle time from a baseline 84 minutes. Of the 76 stroke alerts in which the iPad was used, 19 patients were upgraded to a stroke code, which provided a median door-to-needle time of 34 minutes.

Way Awards

AWARD	PROJECT TITLE	DESCRIPTION AND RESULTS
► Innovative Tools Silver Award	Dazzle with DAZO	Environmental Services, Infection Prevention and the Acute Medicine Service Line convened to implement the use of the DAZO gel marker to monitor room cleaning. Cleaning results for Christiana Hospital increased from 51 to 66 percent and Wilmington Hospital results increased from 41 to 72 percent.
► Magnet: Structural Empowerment Gold Award	CLABSI Prevention: An Educator's Approach	Acute Medicine Service Line staff development specialists developed competency sessions to enhance nurses' awareness and skill in managing central venous catheters to reduce the central-line-associated bloodstream infection (CLABSI) rate. Three hundred nurses successfully completed central-line usage competency sessions at the Virtual Education and Simulation Training center and the incidence of CLABSI on six tested units decreased 70 percent (from 10 to 3).
► Magnet: Structural Empowerment Silver Award	Building an Education Empire	The Emergency Department implemented quarterly four-hour education sessions to positively impact compliance and patient outcomes, as well as staff satisfaction and engagement. Compliance with required education increased to more than 95 percent, and hours of education were reduced from 2,005 to 56, resulting in a savings of \$23,755.
► Magnet: New Knowledge, Innovation & Improvement Gold Award	Engaging Frontline Staff in Reducing Discharge Times on Mother Baby Unit	The 3B/3C/4B Mother Baby Units learned from families that the discharge process led to delays and patient dissatisfaction. By standardizing and streamlining discharge tasks, pediatrician availability, vaccinations and car seat education, a Lean Six Sigma team decreased the wait time from 12 to 3.75 hours.
► Magnet: New Knowledge, Innovation & Improvement Silver Award	Sudden Unexpected Postnatal Collapse Syndrome	The Women & Children's multidisciplinary team implemented a validated risk assessment tool, continuous pulse oximetry on newborns through handheld devices and improved skin-to-skin policies and education. Since implementation, there have been no instances of Sudden Unexpected Postnatal Collapse Syndrome.
► Magnet: Exemplary Professional Practice Silver Award	Achieving Stars by Raising the Bar!	Christiana Care Visiting Nurse Association implemented an integrated care management model as well as discharge reviews with clinicians to ensure accuracy and identify learning opportunities, and posted monthly team results on the nine measures included in the Centers for Medicare & Medicaid Services (CMS) Quality of Patient Care Star Ratings. By March 2016, both the New Castle and Kent/Sussex county offices improved by one star, reaching a four-star rating.



The Christiana Care

AWARD	PROJECT TITLE	DESCRIPTION AND RESULTS
► Magnet: Exemplary Professional Practice Gold Award	Improving Barcode Scanning on 4D	4D eliminated non-value-added process steps, collaborated with Pharmacy to fix unscannable barcodes and standardized nurse training to increase their barcode medication administration scanning rate from 93 to 97.5 percent.
► Magnet: Exemplary Professional Practice Bronze Award	# "SIDE EFFECTS"	A team from 7E educated staff on the proper way to use GetWellNetwork's "My Medication" to provide accurate information to patients about medications and their potential side effects. By engaging staff and patients, use of the "My Medication" tab increased from 18 to 80 percent of patients.
► Magnet: Exemplary Professional Practice Honorable Mention Award	Innovative Alarm Redesign Reduces Patient Harm Related to Falls	The Center for Rehabilitation at Wilmington Hospital implemented the use of two alarmed self-release belts when patients meeting specific criteria are in chairs or recliners. Falls from chairs decreased from 16 to three; 93 percent of staff were very satisfied with the new belts, and 71 percent of patients found the belts to be comfortable and felt they provided increased safety.
► Magnet: Transformational Leadership Gold Award	Collaborating for CLABSI Prevention in Hematology & Oncology Patients	The 6B/Bone Marrow Transplant Value Improvement Team implemented evidence-based standards of care for central line management and infection prevention, developed a tool to monitor central lines three times weekly and conducted deep dives into each central-line-associated bloodstream infection (CLABSI). The CLABSI rate decreased by 42 percent, from 5.7 to 3.3 infections per 1,000 line days.
► Magnet: Transformational Leadership Bronze Award	No Cost, Low Maintenance to Reduce LOS for 5B Medicine Observation Status Patients	5B decreased the average length of stay (LOS) for medicine observation-status patients from 54 to 38 hours through a multipronged approach that included identifying observation patients during rounds and prioritizing orders and tests.
► Magnet: Transformational Leadership Bronze Award	2C Unit Acquired Pressure Ulcer Prevention — Next Steps and New Ideas!	2C consulted with the Wound, Ostomy and Continence (WOC) team and provided staff education regarding pressure ulcer risk from medical devices, implemented new processes to monitor devices and skin, and used twice-weekly leadership rounds for "in the moment" education. The unit acquired pressure ulcer rate decreased from 3.87 to 2.46, with zero incidents from February to July 2016.
► Learning Excellence Gold Award	HVIS Stroke Code Efficiency Project- Saving Brains One Minute at a Time	This project focused on reducing the time and variability of Heart & Vascular Interventional Services (HVIS) door-to-incision time through teamwork and communication in an effort to restore perfusion to the brain as quickly as possible. Through in situ simulation in the Virtual Education and Simulation Training Center, the team clarified roles and responsibilities and developed handoffs and best practices. Door-to-incision time was reduced to less than 20 minutes.
► Learning Excellence Silver Award	Medication History Technicians Invade ED	As part of the Discharge Redesign Project, medication history technicians were employed to perform medication histories in the Christiana Hospital Emergency Department. Eighty-nine percent of participants in a simulation training program strongly agreed that simulation provided a safe environment to make errors while learning, and 79 percent felt better prepared. The total number of medication histories obtained per quarter more than tripled over baseline.
► Learning Excellence Bronze Award	Road to Lung Protection	Evidence-based care recommends specific ventilation lung protective tidal volumes for invasively ventilated patients to reduce mortality. Targeted education was delivered via a 20-week, nine-module series during the normal workday of respiratory therapists and other critical care members to help improve the rate of lung protective ventilation. Compliance with lung protective ventilation improved from 70 percent to more than 90 percent of all adult patients.
► Operational Improvement Silver Award	Calculating the Results of Wound Packing	A multidisciplinary Lean Six Sigma team including representatives from Perioperative Services, Surgery, Information Technology and other subject matter experts streamlined the wound-packing form, added wound packing to the depart process and established processes to monitor patients with packing on all units. The New Wound Packing Communication Log decreased the item count error rate from 44 percent during baseline to 9 percent.
► Operational Improvement Silver Award	Reduce Lead Time for Christiana Care Vascular Specialty Service Patients	Vascular Specialty Services and the Peripheral Vascular Lab consolidated registration, standardized the registration and previsit documentation processes and redesigned flow to reduce the lead time from patient arrival to vascular lab start from 21 to 16 minutes. Lead times exceeding 15 minutes decreased from 81 to 54 percent.
► Operational Improvement Bronze Award	Improving Observation Length of Stay	An Acute Medicine multidisciplinary team developed a nurse practitioner-led Medical Observation Unit (MOU) and implemented standardized workflows and care pathways. Length of stay on the MOU decreased 43 percent, and was significantly lower than for patients with similar diagnoses who were not on an MOU.
► Operational Improvement Honorable Mention	Improving Primary Care Provider Adherence with Chronic Opioid Therapy Documentation	Delaware monitors and controls appropriate use of opioid medications, including documentation of the treatment and management of chronic opioid therapy. The Medical Group Quality Management Team worked with primary care physicians, Information Technology and Laboratory Services to modify processes to improve adherence. Adherence to required documentation standards exceeded the goal of 80 percent in all six required areas.
► Population Health Gold Award	The Incidental Nodule: The Right information, to the Right person, at the Right time	Inconsistent management of incidentally diagnosed lung nodules created gaps in care resulting in a multitude of ethical, legal and financial implications. The Radiology Department, Performance Improvement and Information Technology developed a system to identify, notify and track patients with incidental findings for appropriate follow-up. To date, 7,700 patients have been identified; no negative outcomes have occurred and the team has performed 15 documented early interventions.

Way Awards

AWARD	PROJECT TITLE	DESCRIPTION AND RESULTS
► Population Health Silver Award	Breast Tomosynthesis: Adding Value to Patients at the Breast Center in the Helen F. Graham Cancer Center & Research Institute	Between January 2013 and June 2015, nearly 33,000 patients were screened with 3D mammography. The positive predictive value increased by 20 percent, saving patients from undergoing unnecessary biopsy. There were fewer unnecessary surgical consultations and a decreased need for patients to return for additional spot compression or magnification imaging. Total savings are approximately \$1.3 million.
► Diversity, Inclusion & Cultural Competency Excellence Award	Reach Out and Feed	This project's goal was to increase awareness of the prevalence of food insecurity among the families with young children served at Wilmington Hospital Health Center's pediatric practice. Using a two-item questionnaire, 257 families, including 467 children ages one to five, were identified as "food insecure." A total of 467 food packs were distributed to these families, along with information about community food pantries.
► Resident's Award	Allow Me to Debrief: Improving Code Blues Across Christiana	This Achieving Competency Today (ACT) multidisciplinary team of residents and nurses sought to improve the Code Blue process by creating and implementing an informal post-Code Blue debrief using principles taken from military post-event debriefs, recent literature and feedback from residents, nurses and staff members at the hospital. Debriefs were completed on 71 percent of Code Blues on five pilot patient care units: 92 percent of participants found the debrief process useful in areas such as conflict management, Advanced Cardiac Life Support guideline compliance, communication and role identification; 97 percent stated they would participate in other debriefs.
► People's Choice Award	Decrease Wait Time from Call to New Cardiology Consult	This project team from Heart & Vascular, Non-Invasive Cardiology and Christiana Care Cardiology Consultants implemented a variety of strategies to improve patient access to C4, including standardizing morning office start times and using the Same Day Clinic for any new consult appointments. The time to a new consult appointment decreased from 12.3 to 4.9 days. Costs savings are approximately \$6,150 annually.
► Good Catch All Star Award	Courtney Utberg, RN, Neuro Critical Care	Courtney Utberg, RN, discovered 5 percent dextrose 50ml bags stock mixed in with 0.9 percent normal saline 50 ml bags prior to hanging on a patient. As a result of her find, the solutions are now segregated in the supply room.
► Good Catch All Star Award	Carmen Figueroa, Patient Care Tech, Wilmington ACE Unit	While completing a point-of-care test accucheck on a patient, it was noted by Patient Care Technician Carmen Figueroa that the procedure for patient identification was being skipped. Carmen checked all meters on the unit and found that all were missing this step. The meters are now fixed to include the patient identification step.
► Good Catch All Star Award	Lauren Camposano, RN MICU	Lauren Camposano, RN, found the power cord to a patient bed to be shredded near the socket/outlet. The patient was moved to a new bed and the bed with the shredded power cord was sent for repair.



The Christiana Care Way Awards

In the national spotlight

Recognized nationally for sustained improvements in quality, safety and optimal clinical outcomes

► **U.S. News & World Report “Best Hospital”**

Named best hospital in Delaware and No. 3 among hospitals in the Philadelphia region, and among the top 50 hospitals in the nation in nephrology, pulmonology, diabetes and endocrinology, and gastrointestinal surgery.

► **Beacon Awards for Critical Care Excellence**

The American Association of Critical Care Nurses awarded a second consecutive Gold Beacon to the Cardiovascular Critical Care Complex, a Silver Beacon to the Surgical Critical Care Complex and a Bronze Beacon to the Transitional Medical Unit, all at Christiana Hospital, signaling sustained quality in improving patient outcomes.

► **Meritorious Outcomes in Surgical Patient Care**

Honored by the American College of Surgeons Clinical Congress for the fourth consecutive year for achieving “Meritorious” outcomes in surgical patient care.

► **Excellence in Care for Stroke and Heart Failure** Christiana Hospital is recognized by the American Heart Association/American Stroke Association’s Get With the Guidelines Stroke Gold Plus Award with Target: Stroke Elite Plus recognition and the Get With The Guidelines Heart Failure Gold Plus Quality Achievement award.

► **High-Quality Heart Attack Care**

Recognized by the American Heart Association with the Mission: Lifeline Gold STEMI Award for commitment to guideline adherence and quality improvement.

► **Becker’s Hospital Review for Quality Patient Care** Named by Becker’s Hospital Review for the sixth time as one of the 100 Great Hospitals in America and among “52 great health systems to know.”

► **Joint Commission Disease-Specific Certifications**

- Advanced Comprehensive Stroke Center — Christiana Hospital
- Advanced Heart Failure
- Advanced Primary Stroke — Wilmington Hospital
- Advanced Ventricular Assist Device
- Joint Replacement — Hip, Knee

► **Excellence in Women’s Health**

Designated as the region’s only National Community Center of Excellence in Women’s Health by the U.S. Department of Health & Human Services.

► **Baby-Friendly Hospital**

Christiana Hospital is designated a Baby Friendly Hospital by Baby-Friendly USA Inc., a global program of the World Health Organization and the United Nations Children’s Fund (UNICEF).

► **Comprehensive Metabolic and Bariatric Surgical Care**

The Metabolic and Bariatric Surgery Program is a fully approved comprehensive center by the Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program.

► **Exceeding Standards in Quality Cancer Care**

For excellence in the delivery of comprehensive, multidisciplinary patient-centered care, the Helen F. Graham Cancer Center & Research Institute again received three-year reaccreditation (continuous since 1951) from the Commission on Cancer of the American College of Surgeons.

► **LGBTQ Healthcare Equality Leader**

Designated as a 2017 Leader in LGBTQ Healthcare Equality, receiving a perfect score on the national Healthcare Equality Index from the Human Rights Campaign Foundation. Christiana Care’s are the only two hospitals in Delaware to earn Leader status.

► **Exemplary Hiring for People with Disabilities**

Among only 27 organizations to earn the 2016 Leading Disability Employer Seal from the National Organization on Disability.

► **Most Wired Hospital**

Distinguished as one of the nation’s Most Wired hospitals, according to a survey released by the American Hospital Association’s Health Forum.

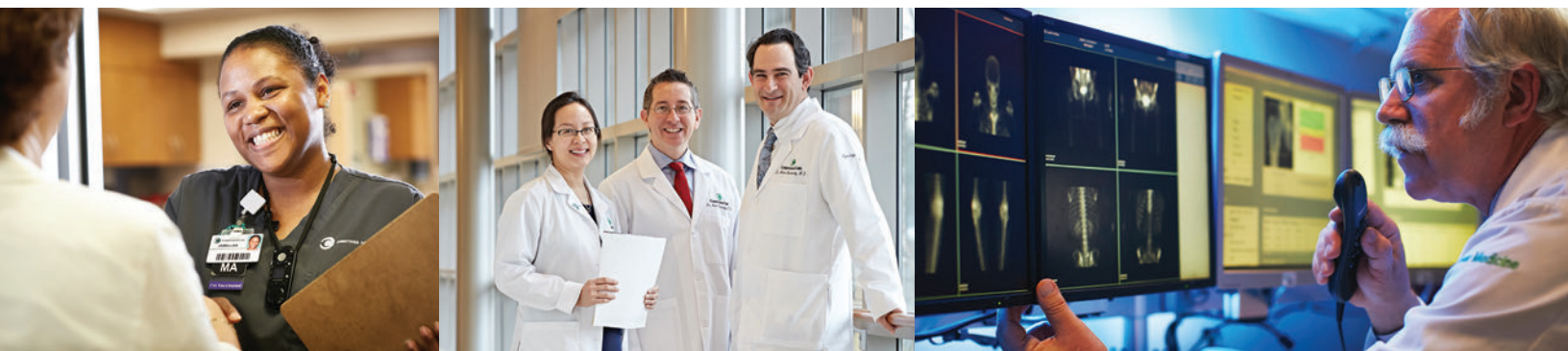


About Christiana Care

Christiana Care Health System is one of the country's largest health care systems, ranking as the 22nd leading hospital in the nation and 11th on the East Coast in terms of admissions. The health system includes The Medical Group of Christiana Care, a network of primary care physicians, medical and surgical specialists, as well as home health care, preventive medicine, rehabilitation services and patient/family advisers for core health care services.

A not-for-profit teaching hospital affiliated with Sidney Kimmel Medical College at Thomas Jefferson University, we are recognized as a regional center for excellence in cardiology, cancer and women's health services. With an extensive range of outpatient services, Christiana Care works closely with its medical staff to achieve better health, better access to care and lower cost.

Featuring two hospitals with 1,100 beds, twice-Magnet-designated Christiana Care is home to Delaware's only Level I trauma center, the highest capability center and the only one of its kind between Philadelphia and Baltimore, and features a Level III neonatal intensive care unit, the only delivering hospital in Delaware that offers this highest level of care to the most critically ill newborns. Christiana Care is a founding partner of eBrightHealth, a first-of-its kind alliance of five health systems in Delaware that collaborates on population health strategies to heighten quality and patient experience of care while reducing the cost of care. For more information, visit www.christianacare.org/whoware.



FACTS & FIGURES

53,000 Admissions
6,500 Births
39,000 Surgical Procedures
582,000 Outpatient Visits
197,000 ED Visits
312,000 Visiting Nurse Association Visits
11,000 Employees



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