## A Message from the President and CEO

Every individual shares a deep commitment to make safety a priority. Christiana Care's culture of safety is characterized by our patient-centered care, open communication, a blame-free environment and defi ning characteristics of HROs. ACHIEVING HIGH RELIABILITY where the risk for accidents and injury runs extremely high. High Reliability Organizations

- Leveraging Technology
- Creating a Safe Culture
- Quality and Safety
- Efficiency and Effectiveness
- Patient and Community Involvement
- Workplace Safety Risk Review
- Formalized Systemwide “Good Catch” Program
- CPOE: Zynx Phase 3
- Disease Specifi c Certifi cation Planning
- Enhanced Web Paging
- VNA Heart Failure
- Infusion Pumps (Smart Pumps)
- ADT Interfaces with Micropaq
- Virtual Education & Simulation Training
- Human Factors Analysis for Radiation Oncology
- Cultural Diversity & Inclusion
- Gas Safety
- Non-OB Locations
- SWAT (Synchronized Wilmington)
- • Surgical Care Improvement
- • Multiple Drug Resistant Organisms
- • Central Line Associated Infections:
  - Reduce Risk of Healthcare-Associated Infections:
    - Medications (Hydromorphone)
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## Quality and Safety

2012 ANNUAL REPORT ON Quality and Safety

- Improving Recognition and Response
- Provider Survey (HCAPS)
- Hospital Consumer and Assessment
- Medication Safety
- Medical bariatric FMEA
- Human Resources and Safety Standards
- 'Good Catch' Recognition
- Safety in New Employee
- Safety Mentor Education
- (FOE) Awards
- Education and Inspection Program
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The Christiana Care Health System
A message from the President and CEO

In all that we do, Christiana Care stands as a model of compassionate care. We are the leaders in our region, and we are driven to be better every day. This is the Christiana Care Way, and it is our promise to you. 

This report offers the story of our journey to enhance our quality and safety. We have strived to show our patients and ourselves a path where our care is free of harm, and our work is guided by a belief in the power of teamwork and the ability to transform care by eliminating error and inefficiency. It highlights improvements that significantly reduce the risk of adverse events and harm. These improvements build on the foundation for our approach to care and how we view our patients. Our approach to safety is a continuous process. 

As we look at the data and the outcomes of our initiatives, we are encouraged by the strides we have made. This is a testament to the power of teamwork and the importance of collaboration and communication. We are grateful for the support of our patients, our caregivers, and our partners who continue to advance our safety initiatives.

Every individual shares a deep commitment to make our patients’ care safe, effective, and efficient. The Christiana Care Quality and Safety Program strives to enhance care, improve safety, and ensure that Christiana Care continues to be a leader in quality and safety. Our physicians, nurses, and other caregivers are committed to providing the best possible care to our patients because we work only creating value for Christiana Care; other health systems throughout the nation are learning from our journey.

In our efforts to achieve these goals, the program targets three strategic initiatives: patient engagement, organizational culture, and leveraging technology. It highlights improvements that significantly reduce the risk of adverse events and harm. These improvements build on the foundation for our approach to care and how we view our patients. Our approach to safety is a continuous process.

Quality and Safety

Quality and Safety

Leveraging Technology

Our Journey — Program Initiatives 2007 to 2012
Instrumental to our commitment to make every patient encounter one of greater value is our determination to provide safety, quality and efficiency in all that we do. Our landmark effort this year in building a Culture of Responsibility underscores that safe practices can neither be dictated by management nor guaranteed by policies and procedures or by technological advances alone. Because the nature of our industry is for care to be provided to humans by humans, we acknowledge that the potential for error is inherent. One of the most important factors in achieving safe patient care is overt, palpable and continuous commitment from organizational leadership and staff to foster an environment that encourages and supports safe and reliable care.
Creating an ingrained culture of safety within health care—one in which every member of the team aligns in common pursuit to uncover and eliminate even the slightest potential for harm—is essential to preventing errors and in delivering a safer, more effective care experience for those we serve. In one of our health system’s most significant culture shifts, Christiana Care frontline employees, physicians and leadership are forging an unprecedented journey toward a Culture of Responsibility.

This calls upon individual and collective responsibility to identify safety risks in our environment. A Culture of Responsibility is a commitment to create an environment of shared responsibility among all members of the health care team, from leaders, to physicians and staff, and those who create and administer the systems in which care is delivered. The focus is on improving systems and creating a learning environment that encourages colleagues to voice concerns, raise issues and report errors and near misses without fear of retribution or punitive action.

Recognizing that mistakes will happen, Culture of Responsibility helps us define and manage human error, at-risk and reckless behavior to create a consistent managerial approach that removes the potential for unsafe behavior. Ultimately, it will help us design safer systems, support safer behaviors and create a standard for how to treat colleagues when errors do occur.

To date, more than 300 managers and physician leaders have been trained in Culture of Responsibility concepts as part of a multi-year phased implementation plan.

Our Journey in Culture of Responsibility
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Frontline staff, physicians and system leadership are integral partners in this renewed culture that:

- Creates an open learning environment where staff feel comfortable talking about errors and have time to reflect upon how we might do things differently.
- Focuses on responsible behavioral choices while avoiding individual blame.
- Strives to understand why humans make mistakes, drift and participate in at-risk behaviors.
- Analyzes adverse clinical events focusing on what happened, what normally happens, why it happened and what we can do to prevent it from happening again.
- Consoles professionals who make an error, coaches those who drift into at-risk behavior and disciplines reckless behavior.
- Limits the use of warning and punitive actions to where they will benefit and improve safety.
- Supports our staff by designing systems that will reduce error and drift as a result of competing demands, such as turnover time, broken systems and misinformation.
“Every day, every where, every one. Culture of Responsibility gets us all thinking about our shared responsibility for making things better.”

—Michele Campbell, RN, MSM, CPHQ, FABC, Corporate Director, Patient Safety and Accreditation

<table>
<thead>
<tr>
<th>Four cornerstones support our Culture of Responsibility:</th>
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<tr>
<td><strong>Advance Our Learning Culture</strong></td>
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<tr>
<td>• Acknowledges the thirst for knowledge and need to understand both individual and organizational risk.</td>
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<td>• Those involved learn from their mistakes and share this learning in a way that supports performance improvement and encourages safe behavioral choices.</td>
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<tr>
<td><strong>Design Safe Systems</strong></td>
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<tr>
<td>• Managers and employees work collaboratively to design systems that anticipate human error, capture errors before they reach the patient or employee, and that allow for recovery when errors do reach the patient.</td>
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<td><strong>Promote an Open and Fair Culture</strong></td>
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<tr>
<td>• Error reporting is transparent.</td>
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<td>• The erring professional feels safe reporting errors, giving others the opportunity to learn from them.</td>
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<td>• Near misses are reported as a learning opportunity to reduce future risk or error.</td>
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<td><strong>Manage Behavioral Choices</strong></td>
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<td>• Understands and anticipates that humans will and do make mistakes.</td>
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<td>• Management of behavioral choices allows achievement of desired safety outcomes.</td>
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Christiania Care achieves goal to reduce harm by 10 percent

The number of patients harmed or at risk for harm has been reduced by 10 percent due to a steadfast and shared commitment by leadership and frontline staff to four key priorities:

- Reducing the risk of health care–associated infections through surveillance and prevention.
- Achieving high reliability through adoption of best practices and a focus on National Patient Safety Goals and practices.
- Identifying, reporting, managing and learning from near misses and adverse events.

Defining harm and risk
Preventable harm is categorized into seven key areas. Each occurrence or event of harm is counted and compared to the previous year-to-date to determine the percent change. The concept of “any is too many” resonates with frontline staff to reduce and eliminate patient harm. Variations from safe practices and processes that place patients at risk for harm are counted to further limit the potential for patient harm.

As a result of these actions, we reduced the number of patients harmed or at risk for harm by 10 percent.

Strategy to achieve long-term goal of eliminating preventable harm
Achieving the long-term goal to eliminate preventable harm required greater focus on priority setting and execution. To strengthen these functions, Christiana Care restructured its Quality and Safety Program, beginning at the leadership level. Organizational priorities based on the Annual Operating Plan and Long-Term Strategic Goals now fall under three major areas:

1. Safety First (Eliminate preventable harm).
2. Clinical Excellence (Evidence-based practice).
3. Think of Yourself as a Patient (Patient care experience).

Each area of focus sets specific priority-driven targets for the patient care unit level. Interdisciplinary unit-level Value Improvement Teams (VITs) trained in performance improvement science drive daily actions to reduce patient harm, improve quality of care and enhance patient satisfaction. The Office of Quality and Safety and Operational Excellence support project-based work, education and training, and mentoring for unit-based VITs. From the unit-level Value Improvement Teams to the senior leadership suite, the renewed focus to improve safety, quality and efficiency in every patient encounter is an important step toward creating greater value in the overall care experience.

Seven Categories of Preventable Harm
1. Hospital Acquired Infections
2. Medication Safety Events
3. Falls with Major Injury
4. Hospital Acquired Pressure Ulcers – Stage 3 & 4
5. Non-ICU Code Blues
6. AHRQ Patient Safety Indicators
7. Other Serious Safety Events
Harm

302 fewer patients were harmed compared to the same time period last year.

Preventable Harm Rate

Harm rate decreased by 18 percent.

* trend
Christiana Care strives for AHRQ top decile in safety

Nonpunitive Response to Error

One of our long-term goals is to place in the top decile performance compared to other hospitals participating in the Agency for Healthcare Research and Quality (AHRQ) Hospital Survey on Patient Safety Culture, which assesses hospital staff perceptions about patient safety issues, medical errors and event reporting.

We believe that our journey toward a Culture of Responsibility will help address one of the key opportunities for improvement identified in FY 2010 survey data—nonpunitive response to error.

Key areas of focus to achieve top decile performance are:

- **Best Practices around transparency** – Good Catch recognition; walking rounds; sharing reported adverse events and lessons learned through system improvements; and continued No Harm Intended sessions.

- **Engagement of middle management** – Embedding Culture of Responsibility into our leadership behaviors; strengthening and re-engineering unit-based CUSP teams into data-driven unit-based Value Improvement Teams; conducting purposeful rounds and coordinating interdisciplinary post-event debriefs at the point of care.

- **Providing feedback and accountability** – Timely event follow-up and learning through our Culture of Responsibility; technology-enhanced event follow-up; safe practice behavior monitoring feedback; and our hand hygiene campaign.

- **Optimizing survey data** – Using organizational and local qualitative and quantitative data related to the specific dimensions of culture to assess effectiveness of interventions and our new Quality and Safety structure.
Good Catch program strengthens staff voice in patient safety

Launched in March 2012 as part of the journey toward a Culture of Responsibility, the “Good Catch” tiered reward program recognizes staff members who identify and report “near misses.” Good Catches increased monthly from 8 – 16 percent of all reporting since implementation, leading to mitigation of harm to our patients in such areas as:

- Patient Identification.
- Test, treatment and procedure.
- Environment.
- Change in patient status.
- Medication, IV and blood.
- Equipment and supplies.

The program engages staff to be attentive and intervene to prevent harm. It also encourages them to suggest opportunities for improvement in system design. By encouraging more reporting, the program will enhance the system’s ability to learn from trends and improve the culture of safety. It also supports achievement of our five-year goal to become a national leader in quality and safety and achieve top decile performance in the AHRQ Hospital Survey on Patient Safety Culture.

Rewarding those who speak up not only gets staff involved in patient safety, but, more fundamentally, it changes staff perceptions about reporting Good Catches.

“Speaking up constructively and intervening to prevent harm not only protects the patient, but also protects the health care professionals involved.”
—Anabelle Navarro, RN, BSN, PCCN, CCRN, Christiana Hospital Cardiovascular Critical Care Complex – Surgical
Post-event debriefs enhance learning from adverse events

Post-event debriefs help clinical team members identify system and communication issues relating to adverse events and near misses.

Discussions focus on system issues rather than individual behavioral choices, allowing participants to discuss events, in a supportive, learning environment. A clear and common understanding of the facts allows all to discover what can be done differently to mitigate further harm to our patients.

**Organizational Learning-Continuous Improvement**

*Direct/Indirect Care Providers*

Debriefs led to an 8 percent improvement in organizational learning.

**Lessons Were Learned in Discussing Event**

90 percent of participants tell us they have learned from the discussions. 98 percent would participate in another debrief, given the opportunity.
Patient and family centered approach leads to better care for our patients

Overall rating of care

With patient and family centered care practices in place, the percentage of patients giving Wilmington Hospital top rating has increased by more than 14 percent.

Wilmington Hospital’s emphasis on patient and family centered care—placing patients in equal partnership with the health care team—is shifting the culture from one of doing things to and for patients, to one of working with patients and their families. Recognizing that patients tend to view the health care team as the experts, staff now stress that it is the patient and his or her family who are the experts on their individual needs. Combining their input with the science offered by the health care team creates a more effective plan of care.

Patient and family-centered initiatives improving the care experience include:

- One Voice Steer Committee (focused team effort on improving communication).
- Bedside shift-to-shift reports (involving nurses, technicians, patient and family).
- In-room white boards (provide two-way communication, engage patient and family in plan of care, customize care coordination and discharge planning, hold staff accountable and promote collaboration between patient and health care team).
- AIDET (staff reminder to Acknowledge, Introduce, predict Duration, provide Explanation, and Thank.)
- Hourly rounds (staff proactively check on patient comfort and needs before issues emerge that may negatively impact safety or satisfaction).
- Patient and Family Advisory Council.

Patient and Family advisers share invaluable insight to improve care experience

A cadre of 12 community members—all either former Wilmington Hospital patients or family members—share their experiences with hospital management and staff at monthly forums, offering a unique perspective to help shape policies, programs, facility design and day-to-day service interactions to continuously improve the care experience.
“We don't want to finance unnecessary care; we want to finance care that adds value to our patients because that, in the end, is most sustainable.”
—Peter L. Slavin, M.D., President, Massachusetts General Hospital

“It’s about learning what we used to know; the things we knew before we became so well educated.”
Chris Coons, U.S. Senator, Delaware

“The concept of value is grounded in the needs of our neighbors, as they perceive them.”
Robert J. Laskowski, M.D., MBA, President and CEO, Christiana Care Health System and Founder, Christiana Care Value Institute

“To tap into the value proposition, health care must address the emotional side of the equation.”
Arkadi Kuhlmann, HBA, MBA, LLD, ING DIRECT USA’s founder

The medical profession must refocus attention on the patient to deliver quality care at greater value, according to speakers at the Christiana Care Value Institute’s inaugural symposium “Value: Medicine’s New Frontier.”

More than 200 health care experts from many of the nation’s top institutions discussed how returning to the basics of medicine—listening to the patient, better use of resources and a greater emphasis on quality and safety—can transform patient care and deliver far greater value.

Christiana Care established the Value Institute to study and design solutions to the questions of value in the real world settings of health care delivery. It aims to implement strategies to achieve better health outcomes at lower costs.

The speaker lineup included widely respected thought leaders in the health care industry. Virginia L. Hood, M.D., immediate past president, American College of Physicians; David B. Nash, M.D., MBA, dean of the Jefferson School of Population Health; Michael Lauer, M.D., director of the Division of Cardiovascular Sciences at the National Heart, Lung and Blood Institute, National Institutes of Health; Peter L. Slavin, M.D., president of Massachusetts General Hospital; U.S. Senator Chris Coons (Delaware) and Arkadi Kuhlmann, HBA, MBA, LLD, founder of ING DIRECT USA, all joined Christiana Care President and CEO Robert J. Laskowski, M.D., MBA, on the dais.

“Value is more than the benefits of cross serving our patients’ needs,” said Dr. Laskowski in his address, “Value:
Surgical symposium offers insight to function, efficacy, cost and use of devices

Christiana Care’s OB/GYN Value Improvement Team presented a comprehensive review of cost effectiveness data and comparative use of supplies and equipment relative to value at a December 2011 Value Institute-sponsored symposium entitled “Defining Value in the Surgical Environment.”

The symposium highlighted evidence-based guidelines to review and evaluate outcomes, quality and cost of the 14 priciest devices used by the departments of Surgery and Obstetrics and Gynecology. Surgeons received a detailed listing of GYN surgical supplies used in the preceding 18 months, as well as the hospital average supply cost for each procedure, allowing them to reassess individual surgical preferences based on best available data and apply new practices, if appropriate, to maximize value while maintaining optimal outcomes.

Keynote speaker Barbara Levy, M.D., former president of the American Association of Gynecologic Laparoscopists and a frequent guest on “The Oprah Winfrey Show,” suggested that with the right steps in place, gynecologists can successfully perform hysterectomies on an outpatient basis, reducing the need for inpatient stays and reducing costs substantially.

Mark J. Garcia, M.D., RSIR, chief of Interventional Radiology at Christiana Care and one of the few interventionalists nationwide specializing in the treatment of chronic clots, compared the clinical effectiveness and cost efficiency of fibroid embolization to other surgical methods.
Advancing health care equity through cultural awareness, education and qualified medical interpretation

Our patients’ increasing cultural and linguistic diversity creates unique challenges for patient safety. Our ability to provide safe, high quality and equitable care depends on understanding the unique cultural needs of our patients and using qualified resources to communicate safely and effectively.

Christiana Care’s Center for Diversity, Cultural Competence and Communications offers various role-based education programs, including online educational modules, simulation labs, departmental training, online resources and co-sponsored educational events with Nursing, Patient Safety, Quality and other departments. This year, we launched the first Diversity and Cultural Competency e-Learning module, which helps generate awareness and knowledge among employees of Diversity and Inclusion strategy expectations, basic concepts related to cultural competence, impact of language barriers on quality and patient safety, and available resources and tools.

A critical goal in establishing a culture of safety is the increased use of appropriate and qualified interpretation resources to communicate with patients who have limited English proficiency, and the elimination of “ad-hoc” interpretation by family, friends or staff members who have not been tested or trained as medical interpreters.

Qualified interpreters reduce such common errors as misinterpretation of medical information, violation of confidentiality laws and conflicts of interest.

While telephonic interpretation provides immediate access to qualified interpreters, this communication method is not always appropriate or feasible due to the complexity of the information being transmitted, patient mental status or other barriers. Christiana Care has increased staffing to four full-time Spanish-speaking medical interpreters. The number of in-person interpretation encounters has increased to an estimated 550 per month.

More than 200 consent forms, patient education and other documents are now translated into Spanish, with translation planned for other languages.
CREATING A SAFE CULTURE

HCAHPS scores exceed national median in most areas

Patient Satisfaction

Christiana Care scores above national levels in 6 of 8 survey areas, with the strongest performance in nursing and physician communication and pain management.

Christiana Care continues to exceed the national median in Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) value-based scores in all but two areas—hospital environment and discharge planning. Scores relating to how well we prepare patients for leaving the hospital on the HCAHPS survey—a government study for measuring patient perception of care across the country—escalated by as much as 22.7 percent on one nursing unit. A current average of 77.2 percent for all units combined indicates a positive trend.

Discharge planning focuses on needs at home

A renewed focus on consistently asking patients and their loved ones if they need help once they leave the hospital—in some cases supplemented by a phone call checking on the patient at home—is improving patient satisfaction with our discharge process.

Improving our hospital environment

An audit measuring noise level variations and observations in eight rooms at Christiana Hospital will provide valuable guidance in improving our hospital environment scores. Unit-based pilots are also studying ways to make patients more comfortable, such as:

- Replacing wheels and castors on hospital equipment, such as blood pressure carts and IV poles.
- Providing dual earpiece television headsets.
- Placing or adjusting silencers on doors in patient care areas.
- Installing white noise units and closing patient doors to minimize noise from the nursing station filtering into patient rooms.
Employee Safety efforts create safer work environment

Lost Time Injury Rate

Christiana Care’s PEEPS® (Patient, Environment, Equipment, Posture, Safety) Employee Injury Prevention Program is credited with significantly reducing the number of lost time injuries suffered by nurses and patient care technicians due to transferring and repositioning patients. Lost time injuries decreased by 85 percent over the last decade.

Commitment to Safety First helps drive lost time injuries rate below industry average

A systemwide commitment to Safety First, supported by sustained efforts to reduce lost time injuries (LTIs), continues to promote a safer work environment for Christiana Care employees. In FY 2011, the system adopted an aggressive goal of reducing LTIs below the national average of 1.7 (as benchmarked by the Bureau of Labor Statistics). Impressively, Christiana Care’s actual LTI rate for that period decreased to below 1.5. This represents a 33 percent reduction in injuries from FY 2010 to FY 2011 (176 injuries in FY 2010; 118 in FY 2011).

The Injury Reduction Team continues its efforts to further reduce workplace injuries, committing to maintain a lost time injury rate below 1.4 in FY 2012. The team is also expanding efforts to reduce all three categories of recordable injuries—those causing employees to lose time on the job; those that require the employee to assume restricted duty; and those, while not impacting the employee’s ability to work, still result in the need for medical treatment—with an established goal of reducing total recordable injuries to below 5.5 in FY 2012.

Christiana Care’s Employee Safety Program is a significant approach, incorporating technology, wellness and educational programming, aimed at changing behavior and practices, and, ultimately, keeping those who provide care throughout our facilities safe and on the job.
Simulated scenarios drive interprofessional communication

While working with robots and mannequins is paramount to honing technical skills required in patient care, there is no stand-in for human interaction when it comes to improving doctors’ and nurses’ ability to handle emotionally charged clinical situations. A collaboration between Christiana Care Health System and the University of Delaware, as one of the Delaware Health Science Alliance initiatives, sets the stage for nurses and residents to gain experience and confidence in handling patients experiencing the effects of either alcohol withdrawal or delirium.

As a human-centered teaching tool, the process also allows the “patient” to offer health care providers such constructive feedback as “too much medical terminology,” “not enough eye contact” or “so focused on reviewing charts and checking IV lines that the patient felt ignored.”
Inspired by high reliability organizations in other risk-laden industries, such as aviation and nuclear power, health care governing bodies such as the Joint Commission, the federal Agency for Healthcare Research and Quality and the Centers for Medicare and Medicaid Services are calling for industry-wide restructuring of leadership, goals and operations to ensure consistently reliable levels of safety and quality when it comes to patient care.

Christiana Care fervently embraces this opportunity to work toward near-perfect processes and to sustain the highest levels of safety and quality. Employing robust process improvement methods, such as Lean and change management, we are better able to identify root causes for systemic challenges and to create consistently employable solutions for success. Measuring and reporting outcomes leads to greater transparency and higher accountability.

While health care, in its service to people, will never be 100 percent reliable, our commitment toward achieving high reliability leads to a safer, more efficient, more cost-effective and higher quality care delivery system of value for our community.
CUSP approach helps reduce central line associated bloodstream infections

Christiana Care’s all-out effort to eliminate central line associated bloodstream infections (CLABSI) is credited with a 44 percent decrease overall, with a majority of improvement realized in the intensive care units.

Using the Comprehensive Unit-Based Safety Program (CUSP) approach to identifying and learning from defects, Christiana Care joined a national collaborative to address the significant increase in patient morbidity and mortality, higher length of stay and greater costs associated with CLABSI.

CUSP teams introduced several initiatives to improve insertion techniques, including:

- Proper hand hygiene.
- Full barrier drapes.
- Skin preparation with chlorhexidine before insertion.
- Use of Biopatch® dressing (chlorhexidine impregnated sponge) that, unless compromised, is changed every seven days. This reduces the prior practice of more frequent dressing changes with greater associated opportunity to compromise the line.
- Avoiding femoral lines or changing site as soon as possible.

An automated Central Line Insertion Checklist is incorporated in the Powerchart electronic medical record. Nurses monitor and complete the checklist for all central line insertions and are empowered to stop the process if any checklist items are not complete. Nurses now assess daily the necessity of all invasive devices, including central lines.

Central line carts are now available to all units, and central line insertion simulation training is now required of all medical/surgical residents.

The number of patients harmed by CLABSI has decreased by 44 percent.
Reducing the risk of health care–associated infections

Ventilator Associated Pneumonia

There were 68 fewer VAP cases this year. Efforts continue toward reaching the goal of zero VAP and sustaining improvements over time.

Unit-specific strategies to prevent Ventilator Associated Pneumonia (VAP), outlined by the Comprehensive Unit-Based Safety Program (CUSP) teams and the Device and Procedures Task Force, include:

- Head of bed >30 degrees.
- Improved oral care (chlorhexidine).
- Sedation vacations.
- Daily weaning attempts.

Aggressive VAP prevention efforts continue through daily evaluation of the patient’s readiness to extubate and monitoring compliance with nursing interventions. CUSP teams concurrently review and discuss patient-specific strategies and share successes with bedside staff across nursing units.

Hand Hygiene Trend

We exceeded our handwashing goal of 90 percent in five of the last six months.
ACHIEVING HIGH RELIABILITY

VTE incidence rate improves by 62 percent

VTE prevention is an identified priority based on the Agency for Healthcare Research and Quality (AHRQ) Patient Safety Indicators, as well as comparative results from the National Surgical Quality Improvement Project (NSQIP).

A pre-operative risk assessment tool is the driving force behind a successful effort to help prevent venous thromboembolism (VTE), leading to a 62 percent improvement in the incidence of pulmonary embolism (PE) or deep vein thrombosis (DVT).

DVT is a blood clot in a deep vein, typically in the legs; the clot inside the blood vessel is called thrombosis. The thrombosis can dislodge, or embolize, without warning or symptoms and travel to the lungs, causing a life-threatening pulmonary embolism.

To reduce harm associated with VTE, a Steer Committee focusing on surgical patients recommended the following pre-operative prevention strategies to complement the risk assessment tool:

- Implementation of an evidence-based algorithm to guide selection of appropriate prophylaxis based on the patient’s risk score.
- Generation of a daily unit-level list of patients not receiving prophylaxis to prompt caregivers to intervene at point of care.

Compliance with VTE prevention guidelines will be concurrently monitored through the Lighthouse system in the Powerchart electronic patient record in accordance with Meaningful Use requirements. Lighthouse enables clinicians and frontline staff to immediately identify and intervene on patients without appropriate prophylaxis to prevent pulmonary embolism/DVTs.

Post-operative VTE rate

The percent of patients with VTE decreased by 62 percent.
Synchronized approach leads to safer patient-centered admissions

Staff report that synchronized admission promotes a smooth work flow, facilitates communication among all stakeholders and promotes quality and safety during the transition from the Emergency Department to the inpatient unit.

Admissions from the Emergency Department (ED) to an inpatient unit arranged in concert by an experienced physician, resident, nurse, clinical pharmacist and social worker/case manager team working as a Synchronized Admission Team are improving quality and efficiency in the delivery of care.

Data shows a reduced length of stay, eliminating the need for Rapid Response Team (RRT) calls in the first 24 hours of the patient’s stay, while demonstrating no increase in readmission rates or ED boarding hours. The process also increases core quality measure compliance for treatment of congestive heart failure, acute myocardial infarction and pneumonia—with pneumonia compliance reaching 100 percent.

Synchronized admission makes the entire admissions process more expedient and efficient. Within minutes of receiving the alert of a patient requiring admission, the team huddles to review all available information in the electronic health record. They then meet as a team with the patient and family.

Hospital Average Length of Stay

Efficient admission processes and improved safety led to a 9 percent decrease in length of stay.
Piloted at Christiana Care’s Wilmington campus in 2009 and expanded to the Stanton campus in January 2012, this re-engineered admissions process addresses the National Quality Forum’s national priorities of promoting effective communication and care coordination, as well as ensuring person- and family-centered care.

to collect additional information, allowing the patient to share his or her story only once to all involved in the admissions process. Each member then carries out his or her respective role in the admissions process, including partnering with the patient and family members for the plan of care.

Among its many benefits, the process offers the potential to reduce medication errors by ensuring the placement of medication orders by physicians at the time of admittance; consultation with the pharmacist at the time of order entry; patient knowledge of the rationale for medication prescriptions; more accurate and timely medication allergy review; more timely medication order processing; fewer phone calls made to clarify medication orders with physicians; increased formulary compliance; and by giving the pharmacist a bedside role in patient care.

**Rapid Response Team Calls within 24 hours of leaving ED**

*Effective communication and appropriate patient placement significantly reduce the need for calls to the Rapid Response Team.*
Structured interdisciplinary bedside rounds improve safety and efficiency

Creation of a team-based approach to care that incorporates Structured Interdisciplinary Bedside Rounds (SIDRs) on one Christiana Hospital medical unit points to improved quality and safety, more efficient hospital operations and better communication between the physician and unit staff.

Physician-led SIDRs occur daily at the patient’s bedside, involving the patient and family, physician, bedside nurse, charge nurse, clinical pharmacist, respiratory therapist, case manager and social worker. The patient and family are integrally involved in discussions, including plan of care and tentative discharge date, and participate in completing the safety checklist. Afternoon huddles were also implemented to enhance safe and efficient transitions out of the hospital.

SIDRs demonstrate impressive results to date. Plans are to spread to other hospitalist-based units.

**Inpatient Average Length of Stay**

![Inpatient Average Length of Stay graph]

*Inpatient average length of stay decreased by 22 percent thanks to structured interdisciplinary rounds.*

**Readmissions within 30 Days of Discharge**

![Readmissions within 30 Days of Discharge graph]

*SIDR process led to a 25 percent reduction in 30-day readmission rates.*
Heart Failure core measure performance rises steadily

Core measures for heart failure treatment are rising steadily and improving the reliability of care for patients with heart failure. Progress includes:

- More timely identification of patients requiring specialized heart failure treatment.
- More appropriate bed assignments from the Emergency Department to the heart failure unit or appropriate cohort.
- Reduced length of stay.
- Reduced 30-day readmissions.
- Improved patient satisfaction.
- Greater compliance with evidence-based guidelines.

One of nation’s busiest for heart failure care
Christiana Care is one of the nation’s busiest heart failure treatment centers, ranking anywhere from fifth in volume for mid-acuity to 22nd for high-acuity patients. More than 90 percent of heart failure patients admitted to Christiana Care come through the Emergency Department. Nearly two-thirds of patients with heart failure are cared for by a select group of hospitalists, community cardiologists or primary care physicians. Due to bed availability or cohorting for comorbidity, approximately half of the patients are admitted to the dedicated heart failure unit at Christiana Care’s Stanton campus; the other half are admitted throughout the nursing units at both campuses.

By engaging those providing the majority of heart failure care in the value improvement effort—and by involving representatives from the Emergency Department and the Visiting Nurse Association, which provides ongoing home disease management—the Value Improvement Team is working to improve the reliability of heart failure care at any touch point throughout the health system.

Christiana Care’s heart failure program holds the Joint Commission Gold Seal of Approval™.

HF Overall Core Measure Performance improves each year
Heart Failure Core Measure Composite Score Since Program Inception

Compliance with core measures increased by 20 percent through efforts of the Heart Failure Program.
Value score cards track Value Improvement Team progress

Christina Care is reducing variation in care and achieving high reliability through population-based Value Improvement Teams. Heart failure, acute myocardial infarction (heart attack), pneumonia and complications following surgery are among the priority areas where we focus on delivering greater value to our patients.

### Heart Failure

<table>
<thead>
<tr>
<th>Guideline Compliance</th>
<th>ACTUAL</th>
<th>O/E or TARGET</th>
<th>PROGRESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharge Instruction*</td>
<td>92.5%</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Evaluation of LVS Function</td>
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<td>+</td>
</tr>
<tr>
<td>ACE/ARB for LVSD</td>
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<table>
<thead>
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<tbody>
<tr>
<td>Patient Satisfaction</td>
<td>89%</td>
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</tr>
<tr>
<td>Mortality</td>
<td>3.8%</td>
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</tr>
<tr>
<td>Readmission</td>
<td>24.8%</td>
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<table>
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<tbody>
<tr>
<td>Length of Stay</td>
<td>4.25</td>
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<td>+</td>
</tr>
<tr>
<td>Estimated Direct Cost</td>
<td>$7,867</td>
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<tr>
<td>Current Value Score</td>
<td>83.1</td>
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<tr>
<td>BASELINE</td>
<td>79.9</td>
<td>C+</td>
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**Heart Failure – 8% improvement in core measures, 20% reduction in readmissions, cost savings of $0.6 million.**

### Acute Myocardial Infarction

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<thead>
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<tbody>
<tr>
<td>PCI Within 90 Minutes of Arrival*</td>
<td>96.9%</td>
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<tr>
<td>Aspirin at Discharge</td>
<td>100.0%</td>
<td></td>
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<tr>
<td>Statin at Discharge</td>
<td>96.2%</td>
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<table>
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<tr>
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<tbody>
<tr>
<td>Patient Satisfaction</td>
<td>77%</td>
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<tr>
<td>Mortality</td>
<td>4.5%</td>
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<tr>
<td>Readmission</td>
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<table>
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<tr>
<td>BASELINE</td>
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**Acute Myocardial Infarction – Mean time to percutaneous coronary intervention decreased by 9 minutes, mortality improved by 8%, estimated cost savings of $1.5 million.**
# Pneumonia

<table>
<thead>
<tr>
<th>Guideline Compliance</th>
<th>ACTUAL</th>
<th>O/E or TARGET</th>
<th>PROGRESS</th>
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<tbody>
<tr>
<td>Blood Culture Pre Antibiotic*</td>
<td>89.4%</td>
<td>✔️</td>
<td>+</td>
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<tr>
<td>Initial Antibiotic Selection*</td>
<td>86.0%</td>
<td>✔️</td>
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<tr>
<td>Pneumococcal Vaccination</td>
<td>100.0%</td>
<td>●</td>
<td>+</td>
</tr>
<tr>
<td>Influenza Vaccination</td>
<td>100.0%</td>
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<table>
<thead>
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<th>Outcomes</th>
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</thead>
<tbody>
<tr>
<td>Patient Satisfaction</td>
<td>76%</td>
<td>●</td>
</tr>
<tr>
<td>Mortality</td>
<td>0.8%</td>
<td>●</td>
</tr>
<tr>
<td>Readmission</td>
<td>7.4%</td>
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<table>
<thead>
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<th>Cost/Utilization</th>
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<tbody>
<tr>
<td>Length of Stay</td>
<td>4.07</td>
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<td>Estimated Direct Cost</td>
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<td>87.4</td>
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<tr>
<td>BASELINE</td>
<td>76.9</td>
<td>C</td>
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</table>

Pneumonia – 7% increase in core measures, 14% reduction in readmissions, 7% decrease in length of stay, cost savings of $0.5 million.

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# Surgical Care Improvement Project

<table>
<thead>
<tr>
<th>Guideline Compliance</th>
<th>ACTUAL</th>
<th>O/E or TARGET</th>
<th>PROGRESS</th>
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<tbody>
<tr>
<td>Prophylaxis Antibiotic Pre Incision*</td>
<td>97.5%</td>
<td>●</td>
<td>+</td>
</tr>
<tr>
<td>Prophylaxis Antibiotic Selection*</td>
<td>99.2%</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Prophylaxis Antibiotic Discontinued*</td>
<td>99.1%</td>
<td>●</td>
<td>+</td>
</tr>
<tr>
<td>Postop Glucose Control*</td>
<td>100.0%</td>
<td>●</td>
<td>+</td>
</tr>
<tr>
<td>Periop Beta Blocker*</td>
<td>98.5%</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>VTE Prophylaxis Order*</td>
<td>100.0%</td>
<td>●</td>
<td>+</td>
</tr>
<tr>
<td>VTE Prophylaxis Given*</td>
<td>100.0%</td>
<td>●</td>
<td>+</td>
</tr>
<tr>
<td>Postop Catheter Removed</td>
<td>94.1%</td>
<td>✔️</td>
<td>+</td>
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<tr>
<td>Postop Normothermia</td>
<td>93.3%</td>
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<table>
<thead>
<tr>
<th>Value Based Purchasing Impact</th>
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<tbody>
<tr>
<td>Composite Score</td>
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<td>✔️</td>
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<td>Current Value Score</td>
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</tr>
<tr>
<td>BASELINE</td>
<td>94.2</td>
<td>A</td>
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</table>

Surgical Care Improvement Project – Improvement in 7 of 9 measures.

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## KEY TO SYMBOLS

<table>
<thead>
<tr>
<th>Guideline Compliance:</th>
<th>Outcomes:</th>
<th>Progress:</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Measure is included in VBP</td>
<td>✔️ Observed to Expected &lt;= 1.0</td>
<td>YTD compared to baseline</td>
</tr>
<tr>
<td>● =&gt; Threshold (for measures with baseline performance &lt; threshold)</td>
<td>○ O/E &gt; 1.0 and &lt;= 1.10</td>
<td>+ Improving toward target</td>
</tr>
<tr>
<td>▲ Between baseline &amp; threshold</td>
<td>♦ O/E &gt; 1.10</td>
<td>- Worsening compared to target</td>
</tr>
<tr>
<td>♠ &lt; Baseline</td>
<td></td>
<td>○ Flat compared to target</td>
</tr>
</tbody>
</table>
COPD disease management program reduces hospitalization

Outcomes for COPD Patients CY2011

Innovative telehealth technology, which allows Christiana Care’s Visiting Nurse Association (VNA) to monitor appropriate patients with chronic obstructive pulmonary disease, plays a key role in improving patient outcomes and leads to 13 percent fewer hospitalizations than the SHP* reported national reference.

Telehealth allows direct daily cellular transmission of vital signs, such as weight, blood pressure and pulse oximetry, and other symptom information to a nurse who reviews the data. Any information outside the patient’s doctor-ordered parameters is discussed with the patient, field clinician and doctor, as warranted, to plan appropriate interventions.

VNA home health nurses use a coaching approach to empower patients to manage their chronic disease. Following evidence-based care plans, they educate patients on symptom recognition, disease process, treatment regime, medication management and, if appropriate, telehealth. Physical therapists may also work with these patients on energy conservation and increasing endurance. A VNA pilot program studies the benefits of having a respiratory therapist educate patients on medication and equipment.

When patients learn how to better manage their condition, fewer emergency room visits are needed. Many times, VNA’s timely intervention means less time in the emergency room and less need for costly hospitalization.

"Patients who participate in their care through daily monitoring connect the dots to identify that healthy behaviors coincide with feeling their best.”

— Gale Bucher, MSN, RN, COS-C, Director of Quality & Risk Management, Christiana Care Visiting Nurse Association

*Strategic Healthcare Programs, LLC

Patients enrolled in Christiana Care VNA’s disease management program do better in dyspnea (shortness of breath), ambulation, nutrition, bathing, bed transfer and oral medication management, and are less likely to need hospitalization than the national reference.
Perioperative Services redesigns process flow to improve efficiency

In its first few months, a restructured process flow— spearheaded by the Perioperative Services Financial Strength and Operational Efficiency Steer group—is already improving value to surgical patients by minimizing patient waits and synchronizing care tasks.

The improvement starts days before surgery when a case posts to the Christiana OR. More than 90 percent of patient charts are now complete 48 hours prior to surgery—negating historic last-minute surgical delays due to incomplete documentation. The group also streamlined processes on the day of surgery through efficient assignment of patient care tasks and by improving handoffs and communication among the Special Procedures Unit, Prep & Holding, the Operating Room and the Post-Anesthesia Care Unit. Their efforts increased OR turnaround time by 20 percent, increased the percentage of first case on-time starts by 65 percent and lowered costs.

On Time Surgical Case Starts

Percentage of first cases started on time improved by 65 percent. Almost 90 percent now start within 10 minutes of scheduled time.
Christiana Care helps develop national episiotomy guidelines

Christiana Care is taking a leading role in developing national guidelines for the obstetrical practice of episiotomy, the surgical incision to enlarge the vaginal opening during childbirth in order to aid delivery and prevent tissue damage. Evidence shows that the procedure, once thought to prevent more serious vaginal tears and reduce the patient’s risk of incontinence, in fact increases the risk of serious lacerations and contributes to stool incontinence.

Christiana Care and the National Perinatal Information Center (NPIC) petitioned the National Quality Forum (NQF) to support the goal of establishing episiotomy rate as an indicator of the quality of perinatal services. NQF’s November 2011 endorsement takes the standard of low episiotomy rates a step closer to becoming adopted by the Joint Commission. Matthew Hoffman, M.D., MPH, Christiana Care’s director of OB/GYN Education & Research, serves on the Joint Commission Technical Advisory Panel, which makes the final decision on all adopted quality markers.

Christiana Care launched an educational program for OB/GYN providers on the procedure and the lack of benefit to patients in October 2008. Between the fiscal years 2008–2010, Christiana Care’s episiotomy rate declined 55 percent. In 2010, only 1 percent of the health system’s obstetricians had an episiotomy rate of more than 20 percent, compared to 25 percent of physicians in 2004. The system’s overall episiotomy rate is currently under 2 percent.

“In the future, hospitals will be judged on their episiotomy rates as a quality marker. Christiana Care is already there.”

—Matthew Hoffman, M.D., MPH, Director of OB/GYN Education & Research

Episiotomy Rate FY04 - FY11

Between fiscal years 2008 and 2010, Christiana Care’s episiotomy rate declined 55 percent. Currently, our rate is under 2 percent.
MICU Alert expedites care

**Improves reliability; shortens length of stay**

The Christiana Rapid Transfer Initiative: MICU Alert ensures that acutely ill Emergency Department (ED) patients are either rapidly transferred to the Medical Intensive Care Unit (MICU) or, in high capacity situations when a MICU bed is not readily available, stabilized and intensively cared for right in the ED by a dedicated MICU team.

The initiative, which expanded from pilot to deployment in January 2012, ensures a highly reliable, consistent level of care and expedites critical clinical decision making and therapy for patients requiring the most intense level of care. It also frees up Emergency Department beds and ED staff resources required by critically ill patients.

- Median response time to ED is under 15 minutes.
- Median ED length of stay reduced by 47%, or 4.2 hours (compared to the baseline time period January–March 2011).
- Projected to save 3,967 ED hours this year.
- Average MICU length of stay reduced by 1.5 days.

**Emergency Department Length of Stay**

For the ED length of stay above the 25th percentile, the new process statistically shortened the LOS for our sickest patients.

For the ED length of stay above the 25th percentile, the new process statistically shortened the LOS for our sickest patients.
An “out of the block” approach to surgical scheduling

**New system gets cases scheduled sooner; enhances productivity**

Productivity is at an all-time high for the Christiana Surgicenter thanks to an improved scheduling model that allows greater room availability to about 200 community surgeons. The facility now schedules 20–45 cases per day; about 7,000 each year.

A new approach to surgical scheduling, based on type of surgery instead of the traditional block-by-surgeon model, allows surgical practices to schedule cases more promptly and shaves weeks off of the time patients previously waited for worrisome diagnostic procedures at the Christiana Surgicenter. Not only does the move free up desirable OR time and improve accessibility for surgeons and patients, it also improves efficiency at the Surgicenter itself. In the first nine months of the new service-specific scheduling model, cases increased by 2.6 percent after eight consecutive years of declining surgical volume, and productivity soared by 19.6 percent per operating room.

Historically, operating rooms allocated blocks of time to select high-volume surgeons, reserving a room and staff regardless of whether the surgeon actually scheduled a case for that time slot. As competition in the ambulatory surgery market increased in recent years, the Surgicenter found itself unable to meet scheduling requests from other practices due to block time. Surgical volume decreased while operating rooms sat empty—staffed and ready—but with no scheduled cases.

The revised scheduling model allocates OR time by service line, and no longer limits blocks to a specific surgeon. Cases are now scheduled first come, first served. Blocks of time continue to be allocated based on historical use by service line, with gynecology cases accounting for more than 40 percent of block time. One un-blocked room is on reserve for last-minute add-ons.

With this dramatic, but necessary shift from traditional OR scheduling, accessibility is enhanced, wait times are reduced, cases are no longer unnecessarily turned away, and overall provider and patient satisfaction levels have increased.

---

**Number of Cases per Operating Room**

![](image)

*The Christiana Surgicenter achieved a 19 percent increase in OR productivity with the improved scheduling process.*
Project Engage transitions addicted patients to community-based treatment

Christiana Care’s Project Engage is successfully transitioning a high rate of addicted patients with substance-related medical problems to community-based treatment programs following screening, intervention and referral by engagement specialists embedded within both Christiana and Wilmington hospitals. In September 2011, White House Deputy Director of the Office of National Drug Control Policy David K. Mineta visited Christiana Care to learn more about the program that, in its pilot phase at the Wilmington campus, achieved:

- A $1.1 million anonymous gift expanded Project Engage in November 2011 from a Wilmington campus–based pilot to a fully funded three-year program now launched at the Stanton campus, as well, with two additional patient engagement specialists. A full-time social worker—an expert in addiction-related community resources—serves both campuses as team leader. The gift also funds a robust program evaluation conducted in collaboration with Christiana Care’s Center for Outcomes Research and the University of Pennsylvania.

Since the pilot’s launch in September 2008, Project Engage specialists have worked with 667 patients, 36 percent of whom are now successfully transitioned to community based substance abuse treatment. A recent health care cost analysis by DPCI-Aetna reveals $190,000 in inpatient savings when comparing the pre- to post-intervention costs of 30 patients seen in 2011.

Project Engage is in collaboration with Brandywine Counseling & Community Services and Aetna Medicaid Plan Delaware Physicians Care for innovative reimbursement and access to fiscal outcome data.

“We’re going after people who are very dependent and stuck in that revolving door between the community and the emergency room and the hospital. It burns up tremendous health care resources and doesn’t tend to the root cause issue, which is their addiction.”

—Terry Horton, M.D., Chief of Addiction Medicine
Long recognized for its capacity to help us provide more sophisticated care, technology now, too, is credited in limitless ways with making that care safer and more efficient. Electronic health records connect thousands of providers throughout the state with common access to patient health histories, lab and procedure results, vaccination data and medication lists, leading to more carefully aligned, coordinated care. Computerized order entry negates the risks associated with interpreting handwritten physician orders and allows the pharmacy to immediately screen prescriptions to verify accuracy and efficacy. Interpretation of transmitted data allows a real-time approach to disease management and alerts clinicians to the possibility of required intervention.

Technology will never completely replace paper, nor can it ever negate the need for human knowledge or talent. But it is of inestimable worth in helping us to enhance the quality and safety of our care, as well as to measure and report successes and opportunities.
Electronic health records poised to demonstrate Meaningful Use

Christiana Care’s four certified electronic health record (EHR) platforms—PowerChart, Centricity, GEMMS and AllScripts—are aligned to meet Stage 1 criteria and proceed to Stage 2 for operational use of 19 pre-defined Meaningful Use criteria by June 2012.

This first stage confirms that an electronic health system is capable of capturing and sharing required information, such as demographics, medications, allergies, lab results and clinical decision support. Future stages require that the EHR helps advance clinical processes and contribute to improved outcomes.

While Meaningful Use aligns with and will provide financial support to execute Christiana Care’s clinical Information Technology strategy, it goes far beyond dollars and cents to ensure safer, more reliable and more efficient care. Electronic health records reduce medication errors caused by illegibility. Prescriptions go directly to the pharmacy, increasing efficiency. Shared information among providers allows ready access to clinical outcomes and public health data, helping to improve performance in managing chronic diseases. Repeated tests and other inefficiencies are eliminated, and evidence-based results on treatment alternatives and outcomes are readily available to clinicians.

Part of the Health Information Technology for Economic and Clinical Health (HITECH) Act, Meaningful Use provides incentive dollars, and likewise carries stiff penalties, to ensure that providers complete three stages of requirements by 2015. In FY 2012, Christiana Care is expected to receive approximately $2.7 million in stimulus funds from the state Medicaid program for adopting, implementing or upgrading an EHR, with a grand total of approximately $17 million from both state and federal programs over the six-year Meaningful Use timeframe.

“Meaningful Use ensures that the investment in electronic health records impacts the quality of care delivered to patients.”
—Janice Nevin, M.D., MPH, Chief Medical Officer

Meaningful Use

• Improves quality, safety and efficiency.
• Improves care coordination.
• Engages patients and families in their care.
• Improves population and public health and reduces disparities in care.
• Ensures privacy and security protections.

Targeted areas for Meaningful Use:

CPOE
Problem List
Medication List
Medication Allergy List
Record Vital Signs
Record Smoking Status
Record Demographics
Patient-Specific Education
Medication Reconciliation
LEVERAGING TECHNOLOGY

Electronic sign-in system streamlines trauma response

A custom-designed electronic communication tool streamlines Christiana Care’s trauma response documentation system, allowing responders to work quickly and seamlessly, while addressing trauma resuscitation challenges, such as role delineation, crowd control issues and noise-related concerns.

Trauma bays are hectic, crowded environments with multiple providers caring for critically injured patients. Responders’ photos, names and role appear on the screen promoting communication and teamwork and clearly defining each responder’s role at sign in.

The system features easily viewable 22-inch monitors posted outside the trauma room; 42-inch screens inside. These large displays replace conventional paper forms on clipboards for easy and simultaneous viewing of trauma-related information, including pre-hospital reports and trauma responder sign-in. This reduces the need for verbal repetition of the report—a prime contributor to the increased noise level and care provider interruptions trauma teams struggled with using the old paper system. Electronic sign-in also solves the problem of identifying gowned, gloved and masked responders for documentation required by the American College of Surgeons.

A multidisciplinary team of trauma responders, Emergency Department practitioners and clerical staff, and Information Technology developers designed and built the customized electronic process credited with:

- Improving communication.
- Enhancing identification of role delineation.
- Reducing the noise level in the trauma bay.
- Reducing the number of non-participating personnel in the room.

Improves Identification of Staff

92 percent of respondents agreed or strongly agreed that the process is simple and that the system improves identification of staff in the trauma bays.

Improves Identification of Roles

84 percent of respondents say the information displayed improves identification of who is filling each role.
Information Week 500 ranks Christiana Care among nation’s top in innovation

Trauma room touchscreens lauded as “idea to steal”
Information Week 500 recognized Christiana Care’s use of large touch-screen monitors to better manage Emergency Department trauma rooms among the “20 IT innovative ideas to steal.” The magazine also ranks Christiana Care among the top 500 (#232) of North American enterprise IT.

Computerworld bestows Laureate award for self-assessment software

The tool was piloted for use by patients with cancer or heart failure and will soon be released to a wider patient audience for use with an Apple iPad.

Seventy-six percent of patients report they like using Insight, with 67 percent saying the tool better prepares them to speak with their doctor.

Teresa Gillis, M.D., medical director of Oncology Pain and Symptom Management and Rehabilitation Services, and Mitchell Saltzberg, M.D., medical director of the Heart Failure Program, along with Information Technology team members Mike Bledsoe, Jon Reynolds, John DiGiovanni, and Catherine Burch, are named as 2012 Computerworld Honors Laureates for their innovative thinking and for their clinical and technical expertise.

Christiana Care also earned Top Five recognition in Computerworld’s health category competition at its annual awards ceremony in June 2012.

The International Data Group’s Computerworld Honors Program selected Christiana Care’s Information Technology team from among 500 nominees for a 2012 Laureate award in the health category for the health system’s Insight software. This self-assessment tool promotes meaningful dialogue between patients and their physicians by allowing patients to report severity of symptoms and how those symptoms affect quality of life using a tablet-based, clinician-friendly wireless format.
Electronic health record improves vaccination rates

A more streamlined "smart" process incorporated into the Powerchart electronic health record ensures that all eligible patients now receive seasonal influenza and pneumococcal vaccinations, contributing to a safer care environment.

Vaccination rates rose steadily with the process redesign coinciding with the start of influenza season in October 2011, followed by the launch of the “smart” pneumococcal vaccination process in January 2012 in accordance with regulatory changes for public reporting of these measures. Both rates are now steadfast at 100 percent for patients with pneumonia, and exceed 90 percent for all eligible patients.

Electronic health records are an instrumental tool in completing assessment, administration and documentation in a timely manner, leading to efficiencies and safety enhancements. The renewed process simplifies the vaccination process, aligning it with nursing workflow.

Electronic health records help track compliance with standing orders for all qualified patients. Historically measured for pneumonia patients for public reporting, Christiana Care’s influenza vaccination rate reached 100 percent between December 2011 and February 2012—prime influenza season.
Flex monitoring technology shows predictive pattern in Code Blue

Analysis may help define why patients are coding
Research fueled by innovative flex monitoring technology suggests that a slow heart rate known as bradycardia—not fast or erratic episodes of ventricular tachycardia or fibrillation as previously believed—is the most common cause of a non-ICU code blue (cardiopulmonary arrest) in the hospitalized patient. Those patients that experience the bradycardia prior to the code blue have a much worse prognosis, suggesting that bradycardia may be a key indicator of impending cardiopulmonary arrest.

The finding, published online by *Resuscitation* in March 2012, underscores a need for better and more consistent monitoring of patients outside the intensive care unit.

Now that research suggests the technology can actually detect if a patient is going to code, a team can be dispatched sooner to initiate life-saving care.

Christiana Care’s cutting edge flex monitoring telemetry system, noted among the largest, most advanced in the United States, allows uninterrupted telemetry monitoring of any patient at any location throughout Christiana and Wilmington hospitals.

Christiana Care researchers joined colleagues from Children’s Hospital of Philadelphia to author the study.

[Image: Telemetry monitoring depicts a predictive pattern in code blue.]
The Vocera two-way, real-time, hands-free communication system allows Christiana Care nurses and patient care technicians to remain with their patients while keeping abreast of information that formerly tied them to the computer or telephone. The technology also improves efficiency by locating the right person in time-critical situations, allows information to be broadcast to multiple users simultaneously—critical in convening resources to mitigate and manage patient safety issues—and improves communication both among departments and between nurses and physicians.

Prior to Vocera, it took a nurse between 2–5 minutes to log on to a computer, look up a number in the directory and place a telephone call. Vocera enables immediate notification.

More than 28 departments throughout the health system are now linked via Vocera, which uses voice activation to directly contact either an individual team member or the person filling a particular role on that shift.

Prior to Vocera, when the flex monitoring team needed to contact the unit regarding a critically ill patient, the call went to a central line. Urgent calls now go directly to the patient’s nurse, allowing him or her to remain at the bedside while in communication. The system also allows ancillary departments and nurses to more efficiently prepare for patient handoffs.

Vocera targets for quality and safety:
- Patient safety.
- Patient flow.
- Staff efficiency.

6,120 Vocera calls × 3 saved minutes = 306 hours staff remained involved in patient care
The Christiana Care Breast Center at the Helen F. Graham Cancer Center achieved the **American College of Radiology Gold Standard in Imaging Accreditation** in breast magnetic resonance imaging (MRI).

Christiana Care’s Center for Heart & Vascular Health holds the **American Heart Association/American Stroke Association’s Get with the Guidelines® Gold Plus Quality Achievement Award for Stroke** and **Gold Quality Achievement Award for Heart Failure**. 

**Becker’s 2011 Hospital Review/Becker’s ASC Review** lists Christiana Care among the **Best Places to Work in Healthcare**.

The **Centers for Medicare & Medicaid Services** presented **Certificates of Excellence** to Christiana Care for collaboration in hospital-acquired methicillin-resistant staphylococcus aureus (MRSA) and pressure ulcer prevention projects conducted by Quality Insights of Delaware.

**Diversified Clinical Services** recognized Christiana Care’s Wound Care for delivering **outstanding results in wound healing** and patient satisfaction for 12 consecutive months.

**The Foundation for the Accreditation of Cellular Therapy** accredited Christiana Care’s Bone Marrow Transplant Program for high quality medical and laboratory practice in cellular therapies.

**GetWellNetwork** presented the **Care Process Integration Award** to Christiana Care at the organization’s third annual Patient Care Awards.

For the third consecutive year, the **Society of Thoracic Surgeons granted a three-star gold standard rating** to Christiana Care’s Center for Heart & Vascular Health. Fewer than 15 percent of the more than 1,000 heart programs surveyed achieve this highest designation bestowed in the comparison of the quality of heart surgery among U.S. hospitals.

**Standard & Poor’s** upgraded Christiana Care’s **long-term debt rating to AA**, indicating “very strong capacity” to meet financial obligations.

**Thomson Reuters** named Christiana Care a 2012 recipient of its **Healthcare Advantage Award**, which recognizes the use of data analytics to improve quality of care and business results.

**Training** magazine ranked Christiana Care’s employer-sponsored training and development program number 60 in the **Top 125 companies in the nation**.

**U.S. News & World Report** ranks Christiana Care among the **Top 10 Best Hospitals in the Philadelphia Metropolitan Area** for high performance in 11 adult medical specialties.
IN THE SPOTLIGHT NATIONALLY

Christiana Care achieved a hospital safety score of “A” from The Leapfrog Group in the first-ever report card on safety in the nation’s hospitals.

The Agency for Healthcare Research and Quality (AHRQ) Innovations Exchange recognizes Christiana Care’s efforts in applying high reliability concepts in creating and sustaining a Safety Mentor Program, the Sepsis Alert campaign, the eCare system and Alcohol Withdrawal Risk Evaluation and Treatment guidelines.

Christiana Care’s Community Clinical Oncology Program ranks among the nation’s top enrollers in cancer clinical trials in the newly formed Alliance of Clinical Trials in Oncology, placing sixth in treatment trials and first in cancer control trials that seek to prevent cancer or control its incidence.

The Association of American Medical Colleges features Christiana Care’s Unit-Based Clinical Leadership Model on MedEdPORTAL®, the association’s peer-reviewed publication service and repository for medical and oral health teaching materials, assessment tools and faculty development resources.

In collaboration with ECRI Institute, in June 2012 Christiana Care hosted the national conference, “Building Bridges: Connecting Comprehensive Event Investigation with Effective Analysis and Strategic Correction of Causative Factors.”

Christiana Care holds Joint Commission Disease Specific Certification for joint replacement (hip and knee) and Advanced Certification for heart failure and primary stroke center. Certification acknowledges compliance with consensus-based national standards, effective use of evidence-based clinical practice guidelines to manage and optimize care, and an organized approach to performance measures and improvement activities.

The U.S. Department of Health and Human Services selected Christiana Care as one of 16 Independence at Home participants. A provision of the Affordable Care Act, this three-year, in-home pilot program encourages doctors to visit the sickest Medicare beneficiaries in their homes to avoid unnecessary emergency room visits, hospitalizations and long-term care.
IN THE SPOTLIGHT REGIONALLY

The *News Journal* names Christiana Care a Top Workplace Employer, ranking it sixth in the large workplace category and best in career opportunities.

Christiana Care is an approved participating hospital in Jefferson Medical College’s Delaware Branch Campus.

Christiana Care’s Stanton campus is designated a Level-2 pediatric center, and the Wilmington campus is designated a Level-3 pediatric center in Delaware’s newly launched Pediatric Emergency Care Facility Recognition Program.

The Helen F. Graham Cancer Center joins Philadelphia’s Wistar Institute and Temple University in developing the world’s first practical blood test for lung cancer.

Christiana Care is teaming up with Thomas Jefferson and Temple universities in Philadelphia to form one of only nine elite National Institutes of Health Heart Failure Clinical Research Centers in the nation, providing scientific leadership for the seven-year project that focuses on small-to-intermediate randomized clinical trials devoted to improving outcomes for patients with heart failure.

IN THE SPOTLIGHT AT CHRISTIANA CARE

Focus on Excellence Awards
Christiana Care’s Ninth Annual Focus on Excellence Awards program formally recognized 24 teams of employees and physicians whose projects demonstrate improvement in process or outcomes using the Plan-Do-Check-Act model.

The annual gathering is a way for Christiana Care employees and physicians to celebrate shared beliefs, including a culture of safety and commitment to value.

- **President’s Award**
  - A Multidisciplinary Approach to Reducing Unit Acquired Pressure Ulcers

- **Value Award**
  - Impact of a Dedicated Respiratory Team: Liberating Patients from Ventilation

- **Clinical Excellence – Gold**
  - S.O.S.! Standardized Order Sets Answer a Distress Call for Inpatient Chemotherapy

- **Clinical Excellence – Silver**
  - Improving Processes for Vaccine Compliance
Clinical Excellence – Bronze
Individual Discharge Assessment: Identification of Patients at Risk for Readmission

Safety First – Gold
Reducing Peripheral Long Line Associated with Blood Stream Infections in Preterm Infants

Safety First – Silver
Post Event Debriefs: “Facts as Known”

Great Place to Work
Keeping Employees Healthy for Life

Think of Yourself as a Patient
Phase II: Innovation in Patient Education

Financial Strength
Prescription Drug and Pharmacy Restructure

Nursing Excellence – Empirical Outcomes
Falls Prevention Champion Team at the Center for Advanced Joint Replacement

Nursing Excellence – Exemplary Professional Practice
Daily Communication and Goal Planning Board

Nursing Excellence – New Knowledge – Gold
Cozy Cuties: Reducing Delivery Room Hypothermia

Nursing Excellence – New Knowledge – Silver
Improve Pain Assessment and Documentation

Nursing Excellence – Structural Empowerment
Hand Hygiene Campaign: Get Your Clean On

Nursing Excellence – Transformational Leadership
Building Nursing Quality and Safety

Learning Excellence
Quality TIPS (Teams Improving Processes)

Residents’ Award
Hemoglobin and Lead Screening

Operational Improvement – Gold
Heart & Vascular Intervention Services: Redesigning a System for Success

Operational Improvement – Honorable Mention
Trauma Sign-in Initiative

Excellence in Community Health – Gold
Chemotherapy in the Home: Changing the Process to Improve Patient Safety

Excellence in Community Health – Honorable Mention
Improving Therapeutic Time in Range for the AMO Anticoagulation Patients

Employee Safety
Ceiling Mounted Lift Usage in the Christiana Emergency Department

People’s Choice
Safe at Home Base: Improving Discharge Medication Reconciliation
PRESENTATIONS

“The Road Less Traveled: An Adult Combined Medical and Surgical Intensive Care Unit’s Journey to Integrate Patient and Family into the Health Care Team.” June 2012. 5th International Conference on Patient and Family-Centered Care. Washington, DC.


PUBLICATIONS


“Nurse Staffing, Hospital Operations, Care Quality, and Common Sense.” *Nursing*. August 2011.