

NURSING ANNUAL REPORT



DIMENSIONS IN PROFESSIONAL NURSING PRACTICE



2014

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FROM THE CHIEF NURSING OFFICER & VP PATIENT CARE SERVICES

As we look back over another incredible year, I am so proud of how Stanford Health Care nurses have translated our vision of “healing humanity through science and compassion, one patient at a time” into every aspect of our organization. Nurses led the way in a year of ongoing change and ambitious initiatives for continuous improvement. Together, we crafted a new Shared Leadership structure and achieved outstanding results. Nurses drove clinical decisions and policy changes to support effective, efficient patient care. Our nurses’ compassion and skill were reflected in outstanding patient satisfaction survey results. The volume of active research and quality improvement studies led by nurses here continues to grow.

This breadth of excellence is what it means to be a Stanford nurse. I am in awe of the commitment you demonstrate daily to our patients and families and am privileged to see the profound impact you have at SHC. Thank you for your inspiring dedication.

Nancy J. Lee, MSN, RN, NEA-BC



FROM THE PRESIDENT & CEO

At Stanford Health Care our vision is healing humanity through science and compassion, one patient at a time. Our nurses are at the very heart of that vision, as it is exactly that rare combination of compassion and science that differentiates Stanford nursing.

The past year saw numerous advances in patient care and exciting new research driven by our nursing professionals. One major milestone was seen in our Press Ganey inpatient satisfaction levels. Thanks to the C-I-CARE efforts of SHC nurses, inpatient 'Likelihood to Recommend' scores reached an all-time high last year, rising to the 94th percentile nationally, up from the 43rd percentile as measured a few years ago. Similarly, the government's HCAHPS inpatient score for Medicare patients ranked us in the 95th percentile nationally.

One of the key drivers of patient satisfaction is the patient's interaction with her or his nurse. To seek opportunities to further enhance nurse-patient interaction, numerous C-I-CARE Kaizen (rapid improvement) events were completed this past year. As you will read within,

the results were very positive, with all four nurse-sensitive satisfaction indicators rising above Magnet median levels.

Moreover, the newly restructured Shared Leadership councils have made an important communications mechanism even more effective. The councils now provide nurses with more and better opportunities to participate in leadership and clinical decisions that impact their practice environment. This increased participation is leading us to find even better ways to care.

On behalf of all our patients, their families, and your Stanford Health Care colleagues, I want to extend my deep gratitude to all of you—our phenomenal team of nursing professionals—for all you do for our patients, families, colleagues, and humanity each and every day!

Amir Dan Rubin
President & Chief Executive Officer



MESSAGE FROM THE ASSOCIATE CNO

On behalf of our Nursing Administration team, I would like to personally thank each of you for your outstanding contributions to Nursing Excellence at Stanford Health Care. Accomplishments we have already seen this year stem from nursing initiatives you started in 2014. Our successes include: increased patient satisfaction, improved outcomes of nurse sensitive

indicators, countless nursing representation at national and local conferences including the esteemed Magnet Excellence Conference. In addition, with the implementation of our new Shared

Leadership structure, we also improved our nurses' satisfaction within their workplace.

I want you to know that I truly value our healthy working environment; one that encourages a respectful and nurturing atmosphere where nurses thrive and want to continue growing. My mission in life is for all of us to work in an organization where patients receive the very best personalized care with therapeutic relationships leading to positive outcomes. Thank you for helping to make our shared goal a reality and I look forward to sharing the successes with all of you.

I am excited to continue our journey of healing humanity through science and compassion, one patient at a time.

Wendy Foad, MS, RN
Associate Chief Nursing Officer



1

TRANSFORMATIONAL LEADERSHIP



COMMUNICATION KAIZEN®

KAIZEN® WORKSHOPS IMPROVE ORGANIZATIONAL CULTURE

Nursing staff found themselves spending much of their time responding to call lights from patients and fixing problems in a reactive way. By identifying the root cause and taking a more proactive approach to patient care, nursing staff are able to improve the flow of their day.

The initial problems identified on general surgery inpatient unit E3, were low patient satisfaction scores and long call light response times. To solve this problem, a group of front line staff from the E3 unit, was brought together to analyze the present situation and to develop strategies to decrease call light response time, decrease call light volume, and thereby increase patient satisfaction scores. A Rapid Process Improvement Workshop (RPIW) team, including nurses, nursing assistants, unit secretary and managers were brought together to identify ways to improve call light response. The workshop team quickly discovered there were other influential factors which affected the problem.

After further discussion, the workshop team recognized that purposeful hourly rounding was not occurring

on a consistent basis with every patient, every time. Proactive hourly rounding would address the 4Ps of immediate patient needs: pain management, personal needs, positioning, and prevention of falls. Hourly rounding anticipates patients' needs and precludes them from using the call light. (Mitchell, Lavenberg, Trotta, Umscheid, 2014)

The team developed

standard workflows for call light response with creating a script, a purposeful hourly rounding schedule, and a standard workflow for the patient care boards in each patient room. A plan for active daily management of these processes was also developed to ensure sustainability.

A plan was then developed to roll-out these standards on all other units. Wendy Foad, MS, RN, Associate Chief Nursing Officer, implemented Kaizen® workshops for each inpatient unit. Front line staff are brought together for three days to problem solve, test, and refine ways to ensure all staff are able to meet the standards developed. They are further challenged with brainstorming ways to improve upon the standards which have already been created and come up with additional improvements that can be returned to units that have already gone through the Kaizen® workshop. "We have learned that spreading without having dedicated time has not been as successful. This is my commitment to invest in staff and devote the time to get these nursing communication best practices right," says Foad.

Kaizen® is defined as "continuous improvement" and is based on the Lean philosophy of continuous improvement. Kaizen uses the concepts of waste reduction, measurable improvement creation, people development, and an increase in customer satisfaction. (Kaizen® Institute, 2014). Stanford Health Care adopted Kaizen® principles to improve processes and increase efficiency. This approach engages staff and ensures

"THIS IS MY COMMITMENT TO INVEST IN STAFF AND DEVOTE THE TIME TO GET THESE NURSING COMMUNICATION BEST PRACTICES RIGHT."

—WENDY FOAD, MS, RN,
ASSOCIATE CHIEF
NURSING OFFICER

that the standards will fit their workflows on their unit while also maximizing accountability. One of the critical success factors for Kaizen® workshops includes spending time defining the root cause of why standards are not being followed. Each group recognizes the need to keep each other accountable, therefore, time is dedicated to role playing scenarios and practicing peer-to-peer feedback. Continuous encouragement and feedback to other staff on these processes allows for successful implementation.

Interventions that address call light response time, as well as the underlying causes of why patients press the call light, help to improve patient satisfaction scores. Patient satisfaction scores are becoming increasingly important not only as a quality indicator of the nursing care provided, but as a metric for determining reimbursement. Since initial roll-out of this program, key patient satisfaction metrics have realized significant improvements. Press Ganey patient satisfaction questions on “Promptness in response to call”, and “Nurse kept you informed” have seen dramatic improvements since the launch of this program. “Call light response times have definitely improved on our unit, and staff are more accountable and won’t pass by the call light anymore,” says Charlene Chen, RN, D1 unit.

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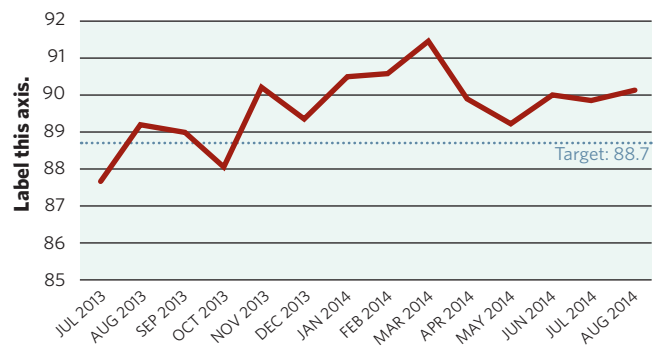
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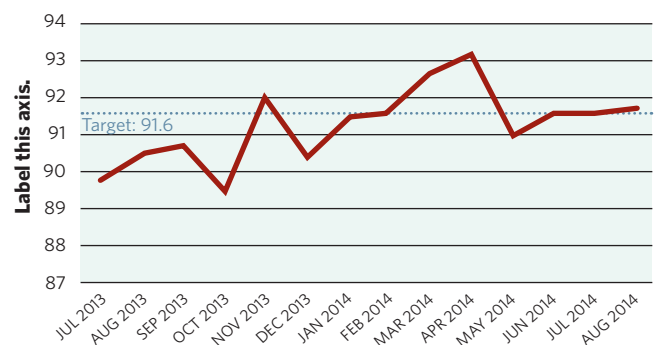


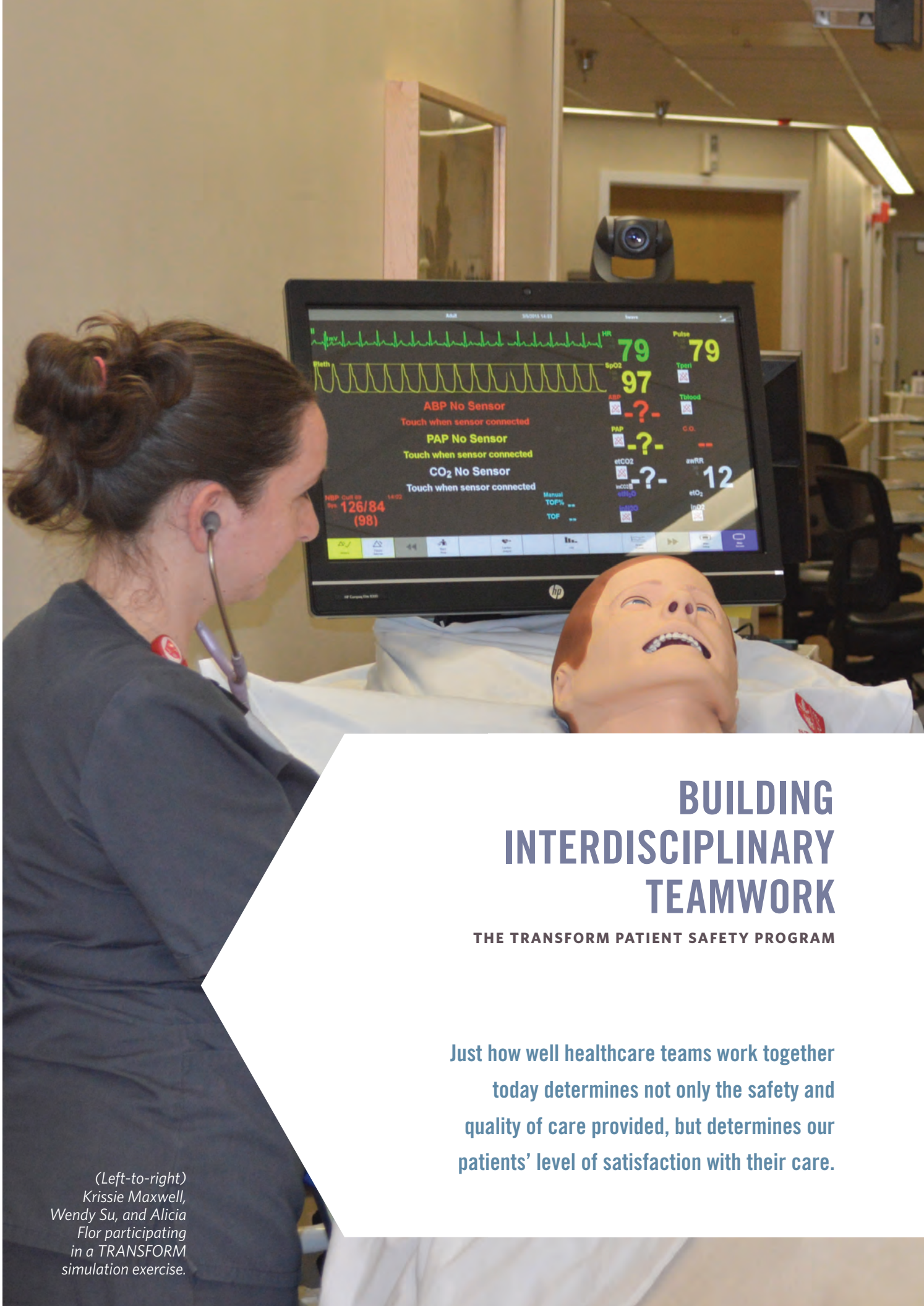
Nerissa Ambers and E3 nurses reviewing progress on patient satisfaction scores.

Promptness in Response to Call



Nurse Kept You Informed





BUILDING INTERDISCIPLINARY TEAMWORK

THE TRANSFORM PATIENT SAFETY PROGRAM

Just how well healthcare teams work together today determines not only the safety and quality of care provided, but determines our patients' level of satisfaction with their care.

*(Left-to-right)
Krissie Maxwell,
Wendy Su, and Alicia
Flor participating
in a TRANSFORM
simulation exercise.*



All too often though, nurses and physicians have not received specific training on teamwork and communication during their professional education. Team training has become an important method for improving safety and quality in healthcare which has been shown to improve performance of clinical teams. Team training involves learning and practicing standardized competencies to provide teams with a shared set of expectations so they know how to work effectively together.

Prior Stanford Health Care (SHC) research of a patient safety program involving interdisciplinary simulation team training on four inpatient units (Project TRANSFORM) revealed significant improvement in hospital complication rates and nurses' perceptions of safety culture.¹ Due to this success, the now called "TRANSFORM Patient Safety

Program" is currently being implemented on sixteen inpatient units. The program's outcomes goals include improving hospital-acquired severe sepsis/septic shock mortality, discharge survival post cardiopulmonary arrest and incidence of hospital-acquired acute respiratory failure.

Nurses and physicians are introduced to the common language and associated tools that surround interdisciplinary teamwork by viewing a 40-minute online course that demonstrates behavioral competencies of SHC's new patient-centric model of teamwork (see figure 1.1). The program then affords clinicians the opportunity to improve their teamwork and clinical decision-making skills during frequent, in-situ simulation training exercises focused on potentially preventable hospital-acquired

complications. Following each exercise, the unit's medical director and advanced practice provider debrief participants on the team's performance based on defined competencies.

Simulation exercises typically start with the mannequin exhibiting subtle changes, such as a slight increase in heart rate, or voicing a new complaint such as, "I'm short of breath." Physicians and nurses are expected to detect changes, call for help early, diagnose and treat as they normally would in practice, while openly communicating and speaking up to voice concerns. "Experiential learning is a very powerful learning method since participants critically think through situations, react to changing conditions and have to perform within an interdisciplinary team. This training is purposely brief (30 minutes) given clinical competing priorities. So far, we've heard very positive comments from nurses, respiratory therapists, residents and fellows completing training", said Arnold.

Achieving behavioral change often requires frequent training. "That's why we're currently conducting 32 simulation exercises a month, which will increase to 56 exercises a month in the spring, with the addition of the last six inpatient units. That level of in situ training is almost unheard of across the country, and we're hoping that this level of training will not only improve team performance during simulation training but, translate into daily clinical practice as well", Arnold said.

To improve response times during cardiopulmonary arrest, simulation training focuses on the "first five minutes" of an arrest to reinforce nursing response skills and use of the new defibrillator in medical-surgical and critical care regions. "We're just beginning to train nurses for this scenario and we're already gaining critical insights in how to improve time to chest compressions and defibrillation that will hopefully improve survival", said Annette Haynes MS, RN, CNS, Cardiology Clinical Nurse Specialist.

"During debriefings, we've heard residents say to nurses, 'it was really useful to hear your recommendation', and I think it is useful and encouraging for nurses to hear that. That messaging is very empowering to nurses", said James

Lau, MD. "Residents are learning to listen more to nurses since they often know more about what's going on with the patient. This helps to break down authority gradients that can impair open communication among providers."

The program team is composed of four TRANSFORM clinical educational specialists who serve multiple roles, including facilitation of simulation training. These master prepared nurses are also responsible for rating behavioral competencies during actual resuscitation events and rapid response team calls that occur on TRANSFORM units. "We want to evaluate just how well learning is being translated into practice during emergent conditions when leadership direction is critical", said Deborah Arnold, MSN, RN, CMSRN, CHSE, Manager of the TRANSFORM Program.

Quality healthcare today is a team-based effort and the new era in health care demands integrating team training through continuing education. "As an academic medical center, with monthly resident rotation, we face unique challenges in building ongoing excellence in team performance. Our team has a lot of challenges ahead but, we're committed to improving teamwork through training. It holds enormous potential to impact patient outcomes," said Szaflarski.

During the summer, program leaders will be looking to spread the program to procedural areas.

1 *J Gen Intern Med.* 2014 Oct 28. [Epub ahead of print]

The TRANSFORM Program TEAM

James Lau, MD (TRANSFORM Medical Director)

Nancy Szaflarski, PhD, RN (Director of Patient Safety Transformation)

Deborah Arnold, MSN, RN, CMSRN, CHSE (Manager, TRANSFORM Program)

Carole Kulik, DNP, RN (Director, Practice and Education)

John Kugler, MD (TRANSFORM Associate Medical Director)

Paul Mohabir, MD (TRANSFORM Associate Medical Director)

SHC Patient-Centric Model of Healthcare Teamwork

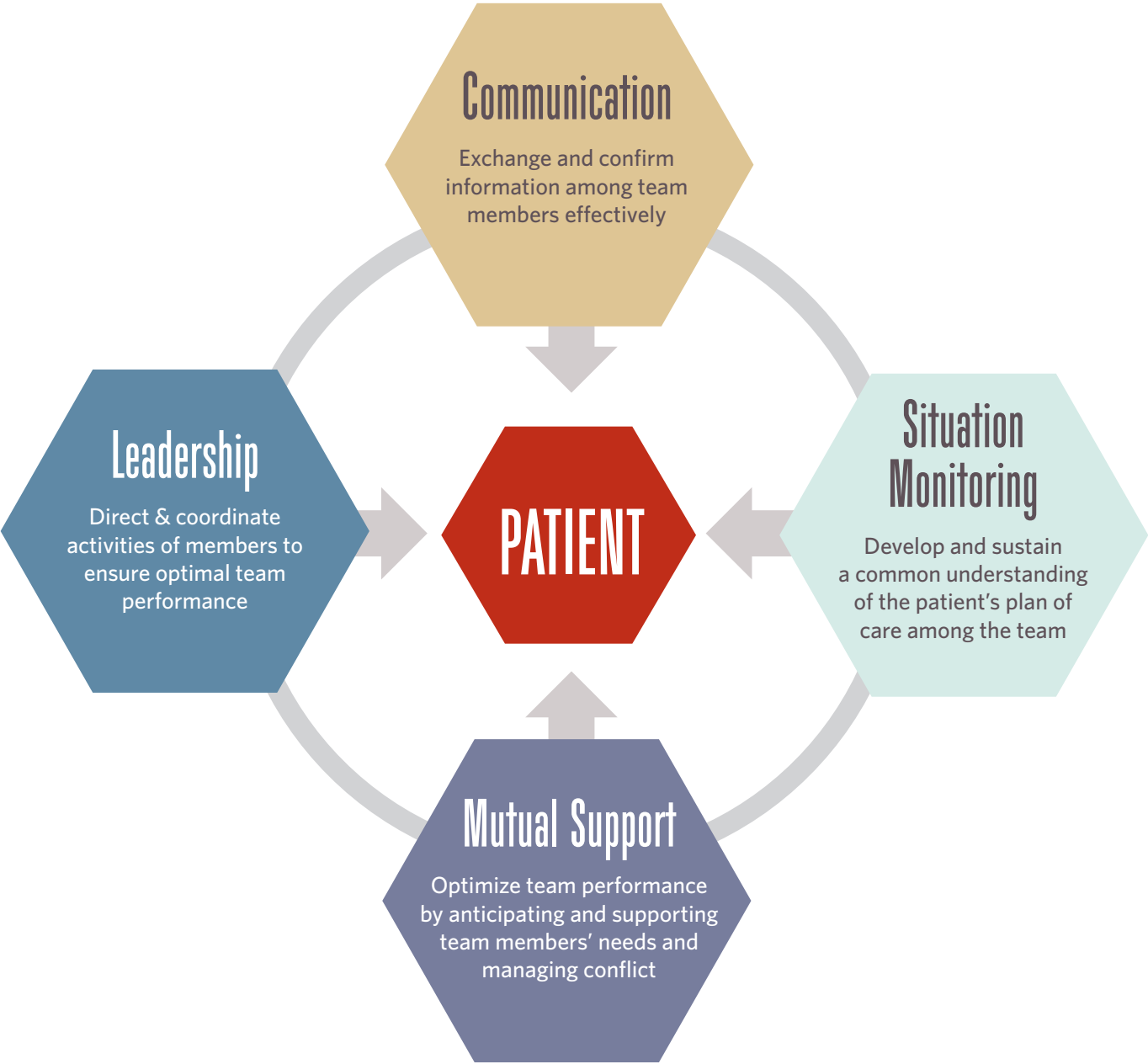


Figure 1.1

SURGICAL VALVE PATHWAY [UPDATE]

IMPLEMENTING A CARE PATH USING AN ACTIVITY CHECKLIST TO REDUCE LENGTH OF STAY AND COST FOR SURGICAL VALVE PATIENTS

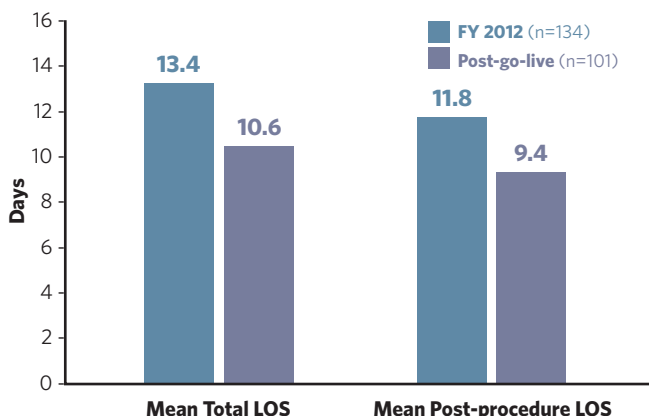
This article is a continuum to the original article, "Development of a care path for surgical valve patients." Stanford Nursing Annual Report (2013). Once the development of the care path and the activity checklist were completed, the care path team members implemented the activity checklist as the first phase of the implementation process. The second phase of the project included revision of post-operative order sets to reflect the care path. In addition, a pilot project with the Rehabilitation Department to ensure physical therapy/occupational therapy evaluations occurred on post-operative day one, improving the time patients were evaluated for early mobility and ambulation.

Utilizing the FY 2012 data for comparison, the mean total length of stay decreased from 13.4 days to 10.6 days (21% reduction) for the surgical valve patients from June 2013 to February 2014. Although the case mix index increased for the valve population, there was an overall 2% reduction in cost per case with an avoided 283 bed days. Some of the

patients feedback included: "Great to see my progress on paper," "Checklist was helpful in knowing what I should be doing and expected to do," "Program was extremely helpful in tracking progress and staying motivated." Key contributors to the success of the project were 54 members, 17 departments, and staff from the two nursing units: North Intensive Care Unit and the surgical intermediate intensive care unit, D3. Because the project involved a true multidisciplinary team effort, this contributed to improved staff engagement, communications and developed efficient processes and standards thereby decreasing variability, improving quality, and increasing patient satisfaction.

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	Baseline (FY 2012)	Results (Jun '13-Feb '14)	Change
Operations: Total Length of Stay	13.4 days	10.6 days	21% less
Quality: O/E mortality	0.44	0.35	20% less
Quality: STS risk-adjusted mortality rate	1.01%	0.88%*	13% less
Quality: Readmit to ICU	9.0%	2.0%	78% less

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STRUCTURAL EMPOWERMENT



SHARED LEADERSHIP COUNCIL

OVERHAULING OUR GOVERNANCE COUNCILS TO INCREASE ENGAGEMENT

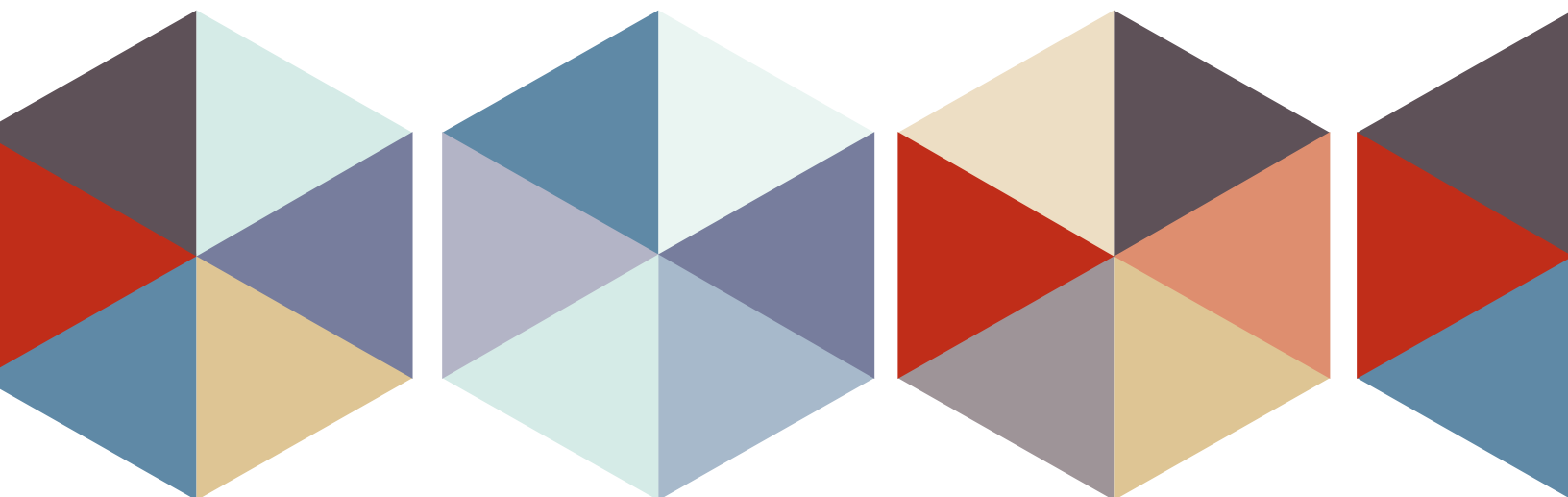
Creating a positive work environment that is filled with opportunities for empowered decision making and interdisciplinary teamwork can be challenging.

In the clinical setting of a hospital, engagement of the bedside clinicians to create a structure that enables shared decision making is often done through a shared governance model (Porter-O'Grady, 2012). Shared governance (SG) supports the nursing work structure through role development, professional development, engagement, recognition, and community involvement (Clavelle, Porter-O'Grady, & Drenkard, 2013).

In May of 2013, the Stanford Health Care (SHC) Nursing Leadership sponsored a full day retreat for 55 staff members from the SG Councils. Attendees included multiple disciplines: nurses from all levels of care, respiratory therapists, case managers, dieticians, pharmacists, rehabilitation therapists, quality specialists, and patient advisors from the community. This stakeholder retreat

revealed the lack of communication of issues, to and from the clinical bedside, as a barrier to effective shared decision making. Attendees stated they did not understand the council structure, nor did they know which clinical issues were addressed at which council. They also did not know who their respective council representatives were for their microsystem. The retreat concluded with all members acknowledging that the current SG structure had grown too large and did not support effective communication at the micro, meso, or macro level. A majority vote from the attendees endorsed overhauling the current structure.

Four SLC workgroups and the SLC steering committee provided oversight during the restructuring process. The SLC workgroups comprised of clinical nurses and inter-professionals, aligned the councils with the Magnet® Model, designed the new SLC bylaws, reorganized the workflow of the councils, developed a communication structure, and defined how SLC success would be monitored. Having had SG for several years, the goal was to discover how to achieve demonstrable outcomes based on the Magnet defined indicators of nursing satisfaction, patient satisfaction, and patient outcomes.

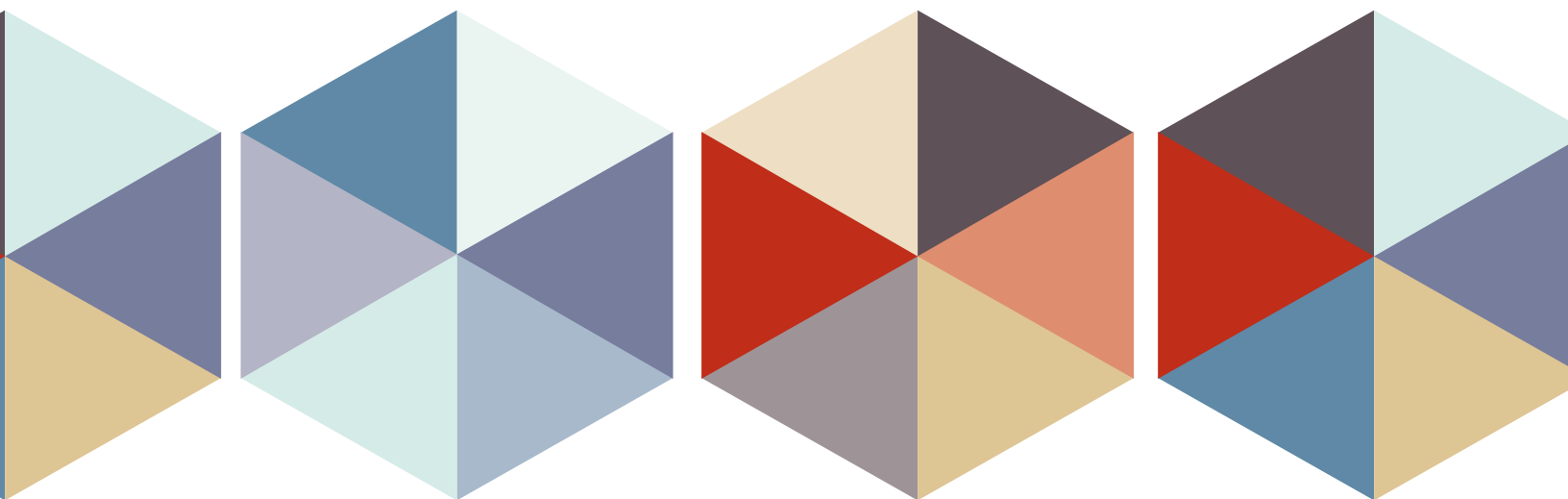


The vision and mission of the organization, the nursing strategic plan, and the Magnet Model created the foundation of the new SHC Nursing Shared Leadership Council. It was strategically important to align the new council structure with the strategic goals of the institution. The vision of the institution, “To Care, To Educate, and To Discover”, drives the culture of inquiry at the point of care and provides a roadmap for successful alignment at the hospital wide and unit based council level. SHC’s mission, “Healing humanity through science and compassion one patient at a time”, appeals to the heart of the clinicians through engaging in a culture of compassion, research, and innovation.

The SG meeting was restructured from multiple 1 hour council meetings being conducted at different times during the month to one single day of the month in which all the council meetings occurred during an 8 hour period. The new structure incorporated all inter-disciplinary teams across the organization, with accountability placed back at the unit and/or procedural area level to encourage participation of all clinicians in shared decision making. The goal of this new 8 hour meeting day model was to eliminate waste, decrease silos, and reduce the duplication

of work, thereby improving staff satisfaction, patient satisfaction, and patient outcomes.

In addition to reviewing the literature, the council members, the SLC Coordinator, and the Magnet Program Director went in search of best practices. They attended the Annual Magnet Conference to hear all the sessions concerning restructuring SG. Several institutions, after having had a SG structure that was developed during their initial Magnet journey, discovered that they, similar to SHC, were looking for a better way to organize their SG structure. Best practices were also discovered at the community level, quarterly Gordon and Betty Moore Foundation sponsored events, “Bay Area Magnet Convening.” This is a venue where local hospitals gather together to discuss their Magnet journey. During one of the convenings, 3 local institutions presented how their hospital had adopted an 8-hour council day approach to SG. To observe best practice, the SG leaders visited one of the hospitals and were very encouraged to see the large number of highly engaged bedside clinicians who told stories of the outcomes they had been able to achieve through the 8-hour day SG structure.



Finally, the team also participated in phone calls to like institutions to determine if any part of their current systems could be employed and tailored to SHC. The result was an online council Action Request Form (ARF), a communication form that can be used by any staff member to submit a question, issue, concern and/or request to SLC.

An enterprise wide restructuring of the Shared Governance Model produced 6 new aligned councils and 29 unit based councils, with improved cross-council communication, and inter-professional involvement. Streamlining the council meetings into an 8 hour day approach created a five-fold increase in nurse engagement time from 1.5 hours per month to 8 hours per month. After only 4 months of the new council structure, 109 issues have been brought forward from the clinical bedside and 40 of these issues have been resolved, and the other 69 have been referred to the appropriate party and are in process toward resolution.

Monitoring and oversight of this new innovation will be achieved by utilizing the SLC issues tracker to review issues on a monthly basis, allowing a Coordinating

Council to have oversight at the enterprise level. The Lean methodology and the Plan, Do, Study, Act cycle will drive continuous improvement and encourage the use of ongoing small “tests of change” that can be quickly monitored. The critical objectives of this innovative approach to shared decision making will be to streamline communication, reduce silos, improve timely decision making, thereby improving patient outcomes enterprise wide.

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G1 NOISE REDUCTION PROJECT

IMPROVING PATIENT SATISFACTION BY PROMOTING A QUIET ENVIRONMENT

Florence Nightingale considered noise to be harmful to the patient, writing, “Unnecessary noise is the cruelest absence of care” (1860).

Elevated noise at night has been shown to cause mental changes and delirium (Wenham & Pittard, 2009; Kamdar, et al., 2013; Konkani & Oakley, 2012). The World Health Organization also found that noise poorly affects communication, cognitive performance, and concentration. Noise also causes distractions and contributes to stress and fatigue (Reiling, 2005). Stanford Health Care (SHC) has consistently scored below average on the Press-Ganey results for “quietness of hospital environment”. SHC’s score of 39% was below the national average of 61%. (Medicare.gov Hospital Compare, 2014). Patients were dissatisfied with the amount of noise in the hospital and a change needed to be implemented.

The Night Specialty Council, consisting of twelve nurses from ten different units, performed an assessment throughout the hospital. The council observed the causes of noise and interviewed patients about their experience with noise at night in the hospital. Managers and nurses were also interviewed about the causes of noise and the types of interventions their units implemented in an effort to reduce noise at night. The findings were delineated into two groups of causes: equipment related and nursing related.

Equipment related findings included alarms sounding, doors slamming, hampers closing loudly at night, patient televisions too bright or too loud, squeaky equipment cart wheels, and loud floor waxing occurring outside the units at night. Nursing related causes of noise included taking patient vital signs, performing assessments, medication passes, and a lack of clustering patient care. The majority of patients reported that the largest cause of

noise they experienced was staff not clustering care and conversations at the nurses’ station. Another commonly reported disturbance was that patients were unaware that there would be interruptions at night for nursing or medical care.

The neurosurgery unit, G1, was chosen as the pilot unit for the implementation of a noise reduction project. Prior to the implementation of this project, noise levels on the unit were 38.7%. A team of G1 nurses was created, and together they performed a literature review and established seven interventions that were found to be successful on other nursing units. These interventions were implemented over the course of one month. New signs reinforcing a quiet environment (Fig.1) were hung in patient rooms, on the doors of patient rooms, and at the nurses’ station. The staff of G1 received an educational in-service, which focused on the health benefits of a quiet environment and

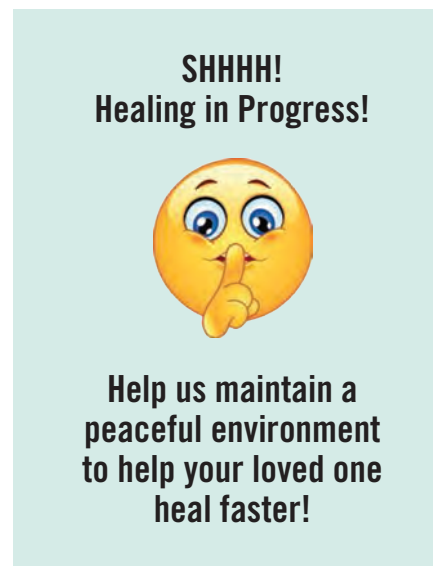


Figure 1

the benefits of sleep for patients. Staff were encouraged to take imperative conversations away from the nurses' station and to keep voices down during conversations. They were also asked to provide peer reminders when noise levels became elevated at the nurses' station. Upon completion of the in-service, all staff members were asked to sign a "Noise Reduction Agreement" as a reminder that each staff member is accountable for maintaining a quiet environment. Reminders on the importance of reinforcing a quiet environment were presented in daily staff huddles for three weeks.

Over the next few weeks, all newly admitted patients were given handouts explaining quiet hours and staff efforts to maintain a quiet environment bundled with ear plugs and eye masks. While this task was not assigned to any specific person, it was each individual staff member's responsibility to ensure that newly admitted patients received these items. Staff explained to patients that hospital personnel would do their best to maintain a therapeutic environment at night. Quiet hours were implemented between 10:30pm-6:00am as signaled by the dimming of the nursing station's lights. Family members were encouraged to go home at night to rest, as opposed to staying at the bedside in shared rooms, to further decrease noise disturbances. When it was safe to do so, patient room doors were quietly closed during quiet hours. These interventions were continued for three months.

Results after the three month pilot project showed a positive effect: scores increased from 38.7% to 57.1%, an 18.4% increase in patient satisfaction in regards to noise levels, and a direct correlation that patients were more satisfied at night post implementation of noise reduction interventions. There was an initial dip in scores halfway through the project, which was a cue to adjust interventions. Nursing Assistants were delegated with the task of ensuring that each patient had received a bundle of sleep masks and ear plugs during the 8:00pm vital signs and at change of shift rounds. To reinforce that we work our hardest to maintain a quiet environment to promote sleep. While the scores on G1 continue to fluctuate, they are maintained mostly in the 50% range, showing patients are becoming more satisfied with the noise levels at night.

The G1 unit continues to work to reduce noise in the hope of increasing patient satisfaction. These interventions have not been officially spread hospital wide, but several units have expressed interest in adopting the interventions used in this project in an effort to increase patient satisfaction with noise levels on their units.

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3

EXEMPLARY PROFESSIONAL PRACTICE



CONGENITAL HEART DISEASE IN THE COMMUNITY

STANFORD HEALTH CARE'S HEART IN THE COMMUNITY

The Stanford Center for Inherited Cardiovascular Disease uses a multi-disciplinary team of experts and innovative techniques to apply genetic information to clinical practice and revolutionize patient management.

With the conclusion of the Human Genome Project, genetics has become a reality in the care of many patients with cardiac conditions. Sarah Race, MS, RN, CNS and Heidi Salisbury, MS, RN, CNS are nurse leaders in the field of inherited heart disease who work within the new era of genetic medicine to transform information into knowledge to better their patient's lives and the lives of future generations.

The Stanford Center for Inherited Cardiovascular Disease serves the multifaceted needs of individuals and families living with or at risk for inherited cardiac conditions. This care ranges from complex diagnostics, cardiovascular screening, genetic testing and family planning. The conditions seen at the center are often responsible for cases of sudden death, potentially in individuals who are very young, seemingly the picture of health and unknowingly at risk. When addressing any case of inherited disease, it is imperative that the teaching and care provided be directed not only to the individual, but also to the family. Ensuring the family understands both the condition their loved one is affected with, as well as their own risk of developing the same condition takes a unique approach to communication and care. Each family is different in their ability and willingness to hear

the message the healthcare providers are attempting to provide. As the nursing team, Heidi and Sarah strive to be available to all members of the patient's family as they process the information they receive in their own time and way. One of the ways this need has been most dramatically felt is through the planning, coordination and hosting of a multi-disciplinary, family centered, educational conference.

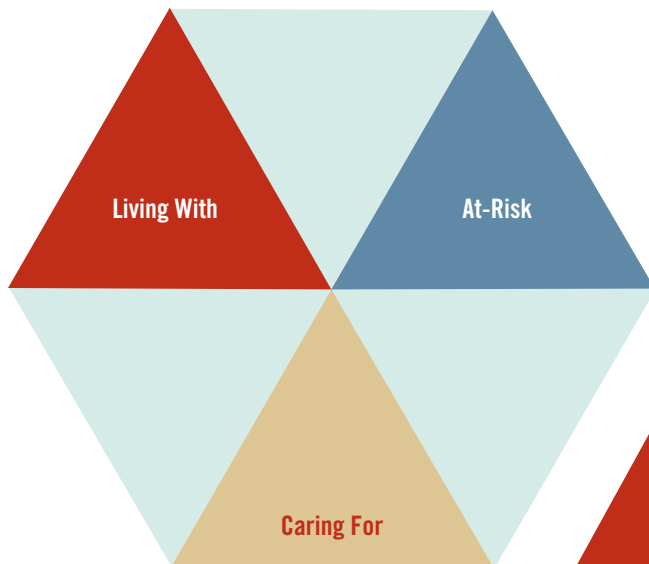
The conference was entitled, In Our Genes: Living with Inherited Heart Disease, and was a cutting-edge patient conference with a novel and innovative educational format. The nursing team wanted to reflect the themes that are frequently addressed when caring for families with inherited disease. They designed a conference that would address three tracks: Living With, At-Risk For and Caring For. This approach allowed patients who were affected by a heart condition to attend sessions focused on decision-making and symptom management.

Family members who were genetically related to the individuals in the Living With track could find out more about how they, themselves, were potentially at risk and what that meant for them and their own health. Genetically unrelated family members, such as spouses, could attend a lecture on caregiver fatigue or the psychosocial implications of parenting a child with the genetic predisposition to develop a heart condition. Presenters at the conference ranged from physicians and nurses, who addressed specific medical concerns, to mental health providers, genetic counselors, as well as several representatives from patient advocacy groups. The conference also had a yoga instructor who led a class on daily living and exercise modifications for the cardiac patient. A nurse researcher reported her original findings

and shared the common themes communicated by patients living with an inherited heart condition.

While the team's goal was to help support the specific patient population by providing information pertinent to them in whatever stage of the diagnosis/treatment they were in, there was one most powerful revelation. By bringing these people together, despite being touched in varying ways by varying inherited cardiovascular disease, they were allowed the opportunity to connect

with individuals in situations similar to their own. This connection ultimately removed layers of isolation, fear and shame and helped heal in ways the team had not anticipated. The power in that room that day was more than a group of individuals attending a conference to learn. It was the inspiration of compassion, support and ultimately the creation of hope amongst individuals who have weathered the uncertainty implicit in their conditions. It created a new vision of the future.



Heidi Salisbury, MS, RN, CNS

Heidi Salisbury, RN
Clinical Nurse Specialist
Cardiovascular

BUILDING A CULTURE OF EXCELLENCE THROUGH PROFESSIONAL DEVELOPMENT

Nurses at Stanford HealthCare (SHC) deliver extraordinary care on a daily basis. Their commitment to providing the best possible care to high-acuity patients is characterized by leadership, clinical competence, and ingenuity.

At SHC, nurses uphold the tenets of their Professional Practice model (PPM) by adhering to professional practice standards and acquiring the knowledge to enhance their practice at all levels. A passion for lifelong learning is as much a moral imperative as it is a standard practice for elevating the profession, especially since it is steeped in the service of saving lives.

NURSING PROFESSIONAL PRACTICE MODEL — CARING DELIVERY AND CLINICAL PRACTICE

SHC's culture upholds mastering both relational aspects and clinical proficiency to ensure patients' well-being. Caring and compassion symbolically anchor SHC's Nursing Professional Practice Model in a gesture of open hands safeguarding the patient. Additionally, the model encompasses six interrelated domains and core values that exemplify professional role-based nursing to ensure consistent practice across the organization. Designed by SHC nurses for nurses, this model represents a unifying picture of esteemed nursing qualities.

PROFESSIONAL LADDER

The Professional Nurse Development Program (PNDP) at SHC is an innovative nursing clinical ladder providing nurses with a distinct path to professional education, career growth, and promotion. Based on the Patricia Benner (1984) conceptual framework, the ladder is a roadmap for describing the various levels of skills acquisition and nursing competencies required to advance from novice to expert practice. At its core, it espouses the key attributes of a PPM developed by nurses. It is intended to recognize and reward nurse achievements for excellence

in leadership, clinical practice, and scientific discovery. A professional ladder sets SHC nurses on a deliberate course towards developing traits and capabilities to their fullest extent. Participation begets a renewed commitment to the profession and keeps experts performing at the highest level of their profession in order to maintain their clinical status. These nurses are a role model to their peers and often times mentor new applicants through the process. As a result, mentors become role models and expand their own professional development skillset by assisting other nurses to invest in their own professional growth.

Self-regulation of practice using self-analysis or peer review is yet another hallmark of expert nursing (Grossman, 2009). One of the ways reflecting on one's practice is accomplished at SHC is when nurses engage in the practice of writing exemplars. An exemplar is a story told by a nurse in their own words to describe a meaningful patient interaction or a significant hospital performance improvement project that influenced patient care and safety outcomes.

In the panel interview, the nurse's clinical decision-making and thought process is evaluated in the exemplar by a panel consisting of hospital leadership and nursing peers.

The years of cumulative wisdom and experience highlighted in a story format convey personal insight and expert clinical practice. . . The exemplars written by SHC's clinical nurses underscore the notion that some of the finest and most gratifying interactions between nurses and their patients take place at the bedside. Each professional

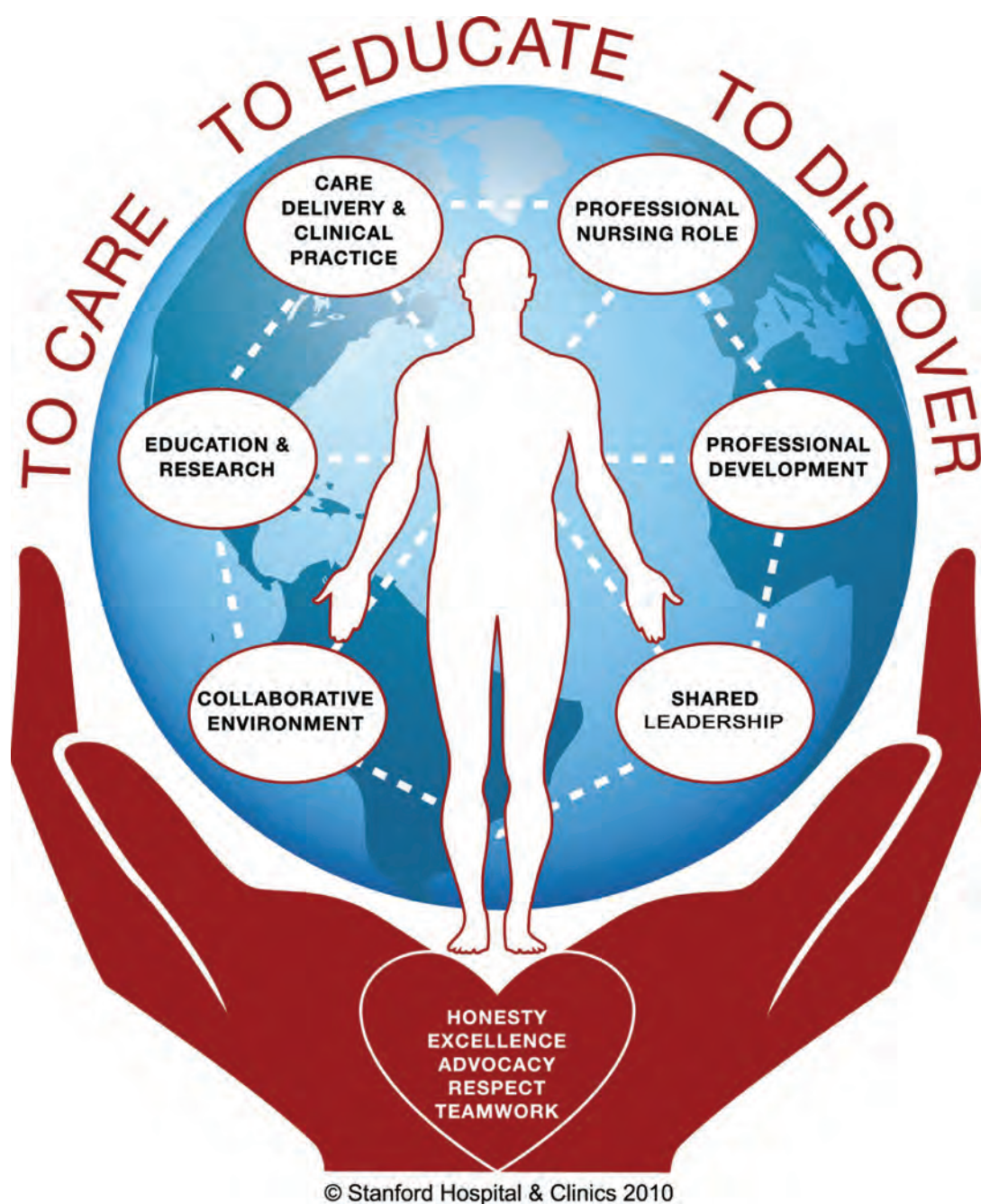


Figure 1

portfolio is a tribute to the complex practice of nursing and to the cumulative wisdom, experiential knowledge and dedication required to heal one patient at a time.

SHC is proud to have nurses of exceptional caliber actively engaged in ensuring that our patients receive the finest quality care.

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COLLABORATION OF DISCIPLINES LEADS TO SUCCESSFUL PROBLEM SOLVING

When single disciplines attempt to solve problems in a vacuum, they often see the problem in the same way and come up with variations of the same solution that continue to result in little change. On the other hand, bringing multiple disciplines together brings different viewpoints and different appreciations of a problem which can often lead to different solutions not previously entertained. Other disciplines can often identify different root causes of a problem which were previously not obvious.

Since the Fall of 2013, the North Intensive Care (North ICU) leadership, Respiratory Care leadership and the Cardiovascular Intensive Care Medical Director have sought out the aid of the Stanford Health Care Consulting Group (SHCG) and Process Excellence to improve two clinical outcomes: 1) insulin management and Surgical Care Improvement Project (SCIP) glucose control core measure compliance and 2) increasing the number of mechanically ventilated patients extubated in 6 hours or less by removing obstacles to early extubation.

With each of these clinical problems, we initially met with the SHCG team assigned to the project to outline what we viewed as the problem and the outcomes we desired to achieve. The approach to problem solving for both scenarios consisted of four basic steps: field research of the problem, literature review, benchmarking and data analysis. Field research consisted of shadowing and observing unit staff as they worked for up to ten sessions, with duration of approximately two to four hours per session. It also included interviews between the SHCG team members and front-line staff to help identify current state and potential obstacles to achieving desired outcomes. A literature review was conducted to assess current approaches in peer-reviewed scientific publications and case studies from nationally recognized consortiums. The SHCG team contacted some comparable medical centers that achieved success, based on the literature review, to learn of their best practices and serve as project

benchmarks. Finally, analysis of hospital or patient data provided quantitative evidence for the potential barriers in improving clinical outcomes. Based on this framework, SHCG team members proposed and outlined their key recommendations for the problem at hand.

IMPROVING GLUCOSE MANAGEMENT

The first initiative was to improve glucose control in all cardiac surgery patients to meet the SCIP core measure (SCIP-inf4) 100% of the time. The goal was to have all blood glucose measures be < 180 mg/dL in the 18 to 24 hour postoperative period. The workgroup consisted of leaders from North ICU, the Cardiovascular Intensive Care Medical Director, a Clinical Quality Specialist, and a consultant from Performance Excellence. Several issues were identified by SHCG as obstacles to reaching this goal. Our practice of transitioning stable patients off insulin drips and allowing them to eat shortly after often led to elevated blood glucose measurements. There were two primary reasons for this: glucose measurements were affected by the ingested dietary sugars and inadequate subcutaneous insulin coverage due to resident inexperience in prescribing insulin. Benchmarking and literature review revealed best outcomes when patients were kept NPO on insulin drips for 24 hours. After initiating this change in our practice, compliance to the SCIP core measure in the North ICU increased from 95.3% in the first quarter of 2014, to 97.6% in the second quarter and 98.6% during the July to September quarter.

Table 1: North ICU Insulin Control Compliance Rate and Expected Compliance Rate with Dose and Level Calculator

Month	Audits	Rate of Compliance	Expected Rate of Compliance with calculator
March	46	85%	91%
April	43	88%	98%
May	43	83.6%	98%
June	56	80%	90%
July	63	87%	99.9%

**Rate calculated based on the number of errors only related to early or late hourly glucose checks. The protocol dictates that checks can't deviate more than plus or minus 10 minutes from the time the hourly check is due.*

A less acute issue related to glucose control experienced by the nursing staff was the need to continually balance the complex care of ICU patients while accurately following a detailed insulin protocol. Despite extensive protocol training, misunderstandings persisted about which hour to adjust levels and tables being misread resulting in incorrect rate adjustments. To address this problem, the SHCG team devised an insulin dose calculator that clearly and accurately reflected our protocol. The only nurse requirement was to enter the hourly glucose result and the calculator would then produce the appropriate insulin level and rate indicated by the protocol thus eliminating the misreading of the tables and missing timely level changes. This calculator was embedded in our electronic medical record in November 2014. After initial beta testing is completed on North ICU, it will be made available hospital wide. Data from audits of every cardiac surgery patient admitted the months of March through July 2014 demonstrate that compliance

with the insulin protocol should improve dramatically when the nurse will not have to independently determine insulin rates and levels. Compliance during this period of time ranged from 80% to 88%. If all dosing errors were eliminated by use of the calculator during this period, the only protocol violations would be glucose measures that were greater than plus or minus 10 minutes from the scheduled measurement time. The impact of the calculator on compliance during this period would be an increase in protocol compliance calculated to 90% - 99%, up from baseline measures of 85%-87%.

IMPROVING EXTUBATION TIME

Our second issue focused on eliminating the delay in extubating stable patients on mechanical ventilation. In 2013 Q4, only 36.7% of patients were extubated in < 6 hours. Several barriers were identified which included no clear protocol, no clear driver of the process, dependence on physician approval, resident hesitancy to extubate at night, the need to wait until rounds were completed, change of shift delays and the availability of a respiratory therapist. Based on these findings, a stream-lined, early-extubation protocol and algorithm was proposed and developed by the Early Extubation Team. This consisted of leaders from North ICU; a supervisor and manager from Respiratory Care Services; the Cardiovascular Intensive Care Medical Director; a Clinical Quality Specialist, and a consultant from Performance Excellence. The protocol identified that respiratory therapists, in collaboration with nursing, were the primary individuals responsible for timely extubation. The algorithm clearly outlined criteria to guide the progression to extubation. Physicians were

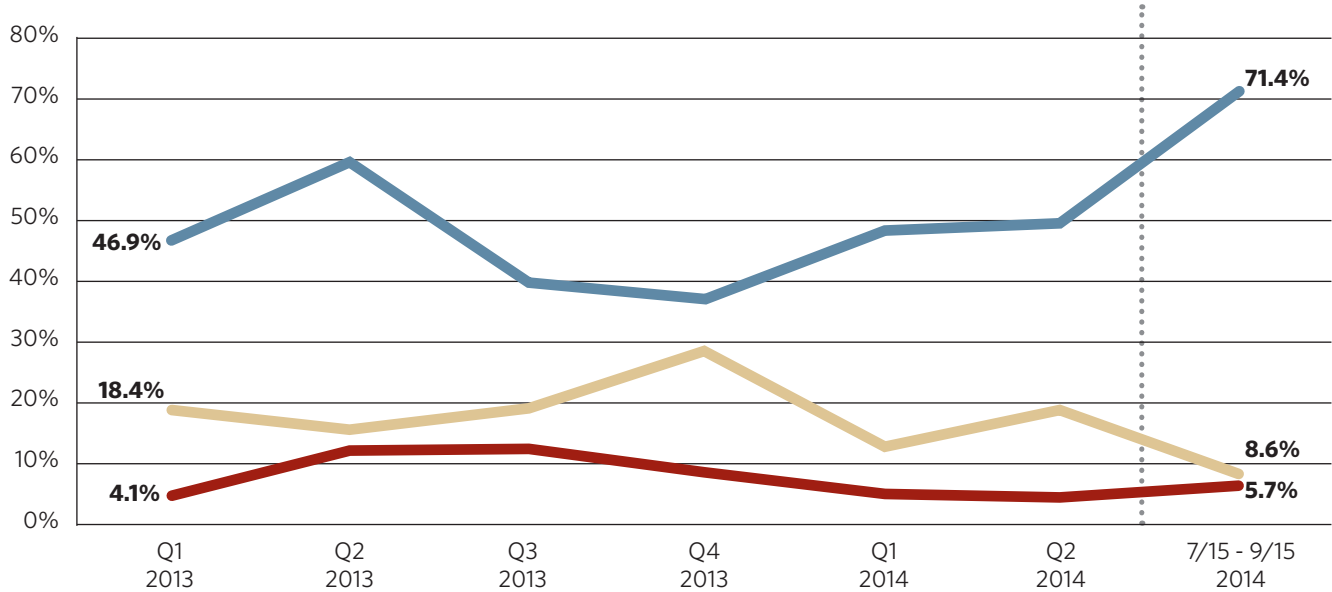
THE GLUCOSE CONTROL MANAGEMENT TEAM MEMBERS

Eric Hadhazy, MS (Senior Quality Consultant, Performance Excellence)
Charles Hill, MD (Medical Director, Cardiovascular Intensive Care Service)
Salome Hoorzuk, RN (Clinical Quality Specialist)
Kathy Seppala, RN (Patient Care Manager, North ICU)
Julie Shinn, RN (Cardiovascular Clinical Nurse Specialist)
Jessica Evanchak, RN (Diabetes Educator)
Nursing Quality Management Coordinators
E29 Nurses

STANFORD HEALTH CARE CONSULTING GROUP

Meital Gabay, PhD (Team Leader) Postdoctoral research fellow in Medicine/Oncology with a PhD in Pharmacology
Christina Loh, PhD (team advisor) Postdoctoral research fellow in Medicine/Immunology with a PhD in Immunology
Lawrence Cai (First Year Medical Student)
Jeff Choi (First Year Medical Student)
Sanchay Gupta (Junior majoring in Biological Chemistry)
Debora Lin (PhD Student in the Department of Chemical Engineering)

CT Surgery/NICU Early Extubation Protocol & Vent Complication Results



Excludes patients extubated in the OR.

Includes: IsoCABG, IsoAVR (no TAVR), IsoAVR+CABG, IsoMVR/MVRpr, IsoMVR/MVRpr+CABG, AVR+MVR, PVR, TVR

Figure 2
Extubation Times Before and After Implementation of the Rapid Extubation Protocol

only to be consulted in cases where extubation criteria were not met. Otherwise, ventilator settings were to be independently adjusted by respiratory therapists. Spontaneous breathing trials and blood gas analysis were to be used as the guide for the decision to extubate, whatever time of the day that occurred. Between July 15 and September 15, 2014, data showed that 71.4% of patients were extubated within 6 hours of surgery, as compared to an average of 43.75% of patients over the year prior.

CONCLUSION

These projects were successful because other view points were brought to the table. Problem solving groups that included multiple disciplines and those removed from the problem were able to identify issues that one discipline alone had not been able to address. Multidisciplinary collaboration facilitated successful problem solving, thereby improving patient care, and as a result, improved clinical outcomes.

EARLY EXTUBATION TEAM MEMBERS

Oligica Grujic, RN (Clinical Quality Specialist)
Eric Hadhazy, MS (Senior Quality Consultant, Performance Excellence)
John Hahesy, RT (Manager, Respiratory Care Services)
Jill Henry, RT (Quality & Compliance Supervisor, Respiratory Care Services)
Charles Hill, MD (Medical Director, Cardiovascular Intensive Care Service)
Kathy Seppala, RN (Patient Care Manager, North ICU)
Julie Shinn, RN (Cardiovascular Clinical Nurse Specialist)
Eric Tomlinson, RT (Director, Respiratory Care Services)
E29 Nurses

STANFORD HEALTH CARE CONSULTING GROUP

Reinhard Ekl (Team Leader) First Year Stanford MBA Student
Lawrence Cai (Team Advisor) First Year Medical Student
Meital Gabay, PhD (Postdoctoral research fellow in Medicine/Oncology with a PhD in Pharmacology)
Ida Bezabeh (Clinical Research Coordinator in Urology)
Swapnil Mehta (First Year Medical Student)
Yipei Wang (First Year Stanford MBA Student)

WATCHING OVER DEEP BRAIN STIMULATION FOR MOVEMENT DISORDER PATIENTS

Stanford's Neuroscience Center houses twenty-five different programs and clinics, including the Stroke Center, the Headache and Facial Pain Clinic, and the Cyberknife Stereotactic Radiosurgery Program. The Neuroscience Center also houses the Movement Disorders Center, where Carlos Rodriguez, BSN, RN, CNRN coordinates care for patients who receive a Deep Brain Stimulation (DBS) surgical intervention. Carlos organizes the care of these patients from start to finish to ensure that they receive the appropriate information about the procedure and how to care for themselves at home after the procedure.

DEEP BRAIN STIMULATION

The procedure for DBS involves implanting electrodes within the brain in order to stimulate targeted areas in attempts to improve gait (Johnsen, Mogensen, Sunde, & Østergaard, 2009) and decrease tremors (Kalia, Sankar, & Lozano, 2013). Carlos describes the procedure to his patients as a "pacemaker for the brain". Although the procedure is considered minimally invasive since it involves a minor incision, it requires admission into the Intensive Care Unit post-operatively for managing the complex issues of care (Stanford, 2014). While the procedure can be used for patients with Parkinson's disease (PD), chronic pain, or seizure disorders, Carlos states that the majority of the Center's patients are being treated for PD. Part of Carlos' job is to inform the patients what to expect before, during, and after their surgery; this includes an initial neuropsychology assessment, verifying medication therapies, and coordinating visits both pre-and-post operatively. Carlos asserts that one of the reasons he has high job satisfaction is his ability establish longitudinal relationships with his patients.



Carlos Rodriguez, BSN, RN, CNRN familiarizes a patient with the Deep Brain Stimulation device

LONGITUDINAL CARE

Carlos not only coordinates the patient's initial assessment and plan of care, but he sees the patients in the clinic post-operatively. One of the constants throughout all the patient's visits is being assessed using the United Parkinson Disease Rating Scale (UPDRS). This scale measures the categories of: mentation, behavior, and mood; activities of daily living; motor examination; and complications of therapy (Kalia et al. 2013). Carlos and his fellow nurses within the center have a set of standing orders so that they can adjust the patient's DBS device based on the score of the UPDRS. Carlos has been working for the neurosciences center for the past three years; initially he was the only nurse in his role. Since Carlos has started working at the center, there has been an increase in patient visits to the center and therefore, an increase in nurses working in the clinic. Carlos expresses that, part of his role is not just teaching the patients how to manage the DBS treatment, but to manage their chronic disease process. His role as an outpatient clinic nurse allows him to coach and mentor on lifestyle choices and adjustments that have always been an essential part of nursing.

WATCHING OVER

Since the time of Nightingale, observation of patients and their conditions has been a critical component of nursing. Carlos' longitudinal surveillance of his patients and their changing condition exemplifies this component. In inpatient nursing the concept of nurses watching over their patients during a work shift involves: Knowing what's going on, not taking anything for granted and taking necessary action to protect patients from adverse outcomes (Schmidt, 2010). Carlos describes the feeling of

satisfaction he gets when his patients come for their post-surgical visit and they have experienced improvement. He also coaches them that inevitably they will have cycles of regression and will need their DBS adjusted. Carlos' goal in watching over his patients in this way is to ensure that they achieve their optimum quality of life within the limits of their chronic disease process.

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4

NEW KNOWLEDGE, INNOVATION & IMPROVEMENTS



THAT TRANSFORMS CARE



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RESEARCH AND INNOVATION IN PATIENT CARE SERVICES

NURSES EMBRACING THE CLINICIAN SCIENTIST ROLE

Stanford Health Care's (SHC) mission is "Healing humanity with science and compassion, one patient at a time." Guiding Patient Care Services (PCS) in fulfilling the 'science' aspects of this mission is an emerging team led by David Pickham PhD, RN.

In April 2014, Garrett Chan, PhD, APRN, Mary Lough, PhD, RN, CNS, and David Pickham, PhD, RN, received joint-appointments in the School of Medicine as Clinical Educators. These appointments stem from the SHC leadership of Nancy Lee, MSN, RN, NEA-BC, Vice President of Patient Care Services and Chief Nursing Officer, and the support of physician-colleagues.



SCIENCE AND THE CLINICIAN

Another component of the PCS research team that is emerging is the Research and Innovation Council. This council is led by Jovy Borja, RN (Chair) and Kota Reichert, PT (Vice-Chair). The council's early work is the development of practice domains that will form the nexus for building research capacity and clinical practice knowledge. This nexus is formed by aligning clinical staff with advanced practice personnel and doctoral-prepared staff in respective mentor and advisory roles (Figure 1).

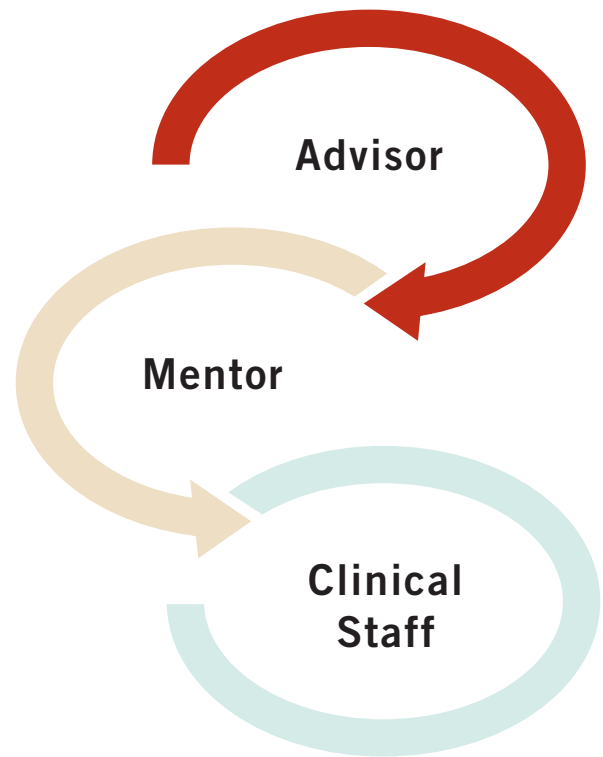


Figure 1. Structure of support for advancing clinical practice knowledge within PCS

SCIENCE AND THE NOVICE

For new nurses, one of the first exposures to research is through the successful Nurse Residency training program led by Shirley Sampson, MA, RN. Each year cohorts of new graduate nurses learn about EBP and receive support through the development and presentation of one EBP project. These projects often address pertinent unit-orientated issues that have immediate clinical care implications. With over 19 cohorts completed, this program is pivotal in setting the expectations for new staff.

Building from this foundation of EBP, the research team is currently supporting a wide range of clinical studies. Examples of these studies follow:

Quality Improvement

A study aimed at improving the delivery of care is being conducted by the Blood and Marrow Transplant (BMT) Unit's Patient Care Manager, Tricia Jenkins, MPA, RN and Oncology Clinical Nurse Specialist, Kate Tierney, PhD, RN.

In providing leading edge care, the clinicians have developed an EBP transfer criteria for critically ill BMT patients. This is a retrospective study based on eight years of clinical data. They hypothesize that not all BMT patients benefit from transfer to the ICU, and would receive more appropriate care within the dedicated BMT unit. These criteria are being implemented and refined, and a manuscript is being submitted to a leading oncology journal.



Research

Typifying research is a study performed by staff nurse, Linda Dupuis-Rosen, BSN, RN and dietitian, Tara Coghlin-Dickson, MS, RD, CSSD, with a study grant from The DAISY Foundation®.

In collaboration with Dr. Laura Johnston and Dr. Kate Tierney, Linda and Tara evaluated Vitamin D levels and the association with acute Graft Versus-Host Disease (GVHD) in BMT patients who had received Hematopoietic cell transplantation. With assistance from Stanford's Cellular and Therapeutics & Transplantation Lab and the Clinical Laboratory, the team designed a pilot study to test 50 patients' vitamin D levels at three time points. They determined that the majority of patients are vitamin D deficient, and in partnership with the BMT physician group have now changed clinical practice guidelines to include vitamin D monitoring and supplementation. The team is disseminating their research findings at the 2015 American Society for Blood and Marrow Transplantation Scientific Conference.

Innovation

Innovation, and the need to be innovative, is increasingly being seen as a necessary component of a modern healthcare organization. Two Cardiovascular Clinical Nurse Specialists, Sarah Race, MSN, RN, CNS, and Heidi Salisbury, MSN, RN, CNS, are driving such innovation.

Hypertrophic Cardiomyopathy (HCM) is a devastating cardiovascular disease whereby the heart muscle's growth and function are disordered. HCM is one of the leading causes of sudden cardiac death, especially in the young. With support from the Peter Patrick Madigan Antonini Foundation and a Friends of Nursing Betty Cretokos Scholarship grant, Sarah and Heidi, along with Dr. Euan Ashley and Dr. David Pickham, have formed a partnership

with Peter Van Dam, PhD, a computer scientist from the Netherlands with expertise in 3D cardiac modeling. In response to a patient family's request, this group is developing an online education experience for patients with HCM. Patients will be able to visualize their own heart muscle and receive individualized education regarding self-management for HCM (Figure 2).

Research at Stanford has been moving ahead with collaboration between Stanford Health Care and Stanford School of Medicine. With multidisciplinary teams working together, the nurses at Stanford are broadening the boundaries of science, thereby fulfilling Stanford's mission of healing humanity with science and compassion, one patient at a time.

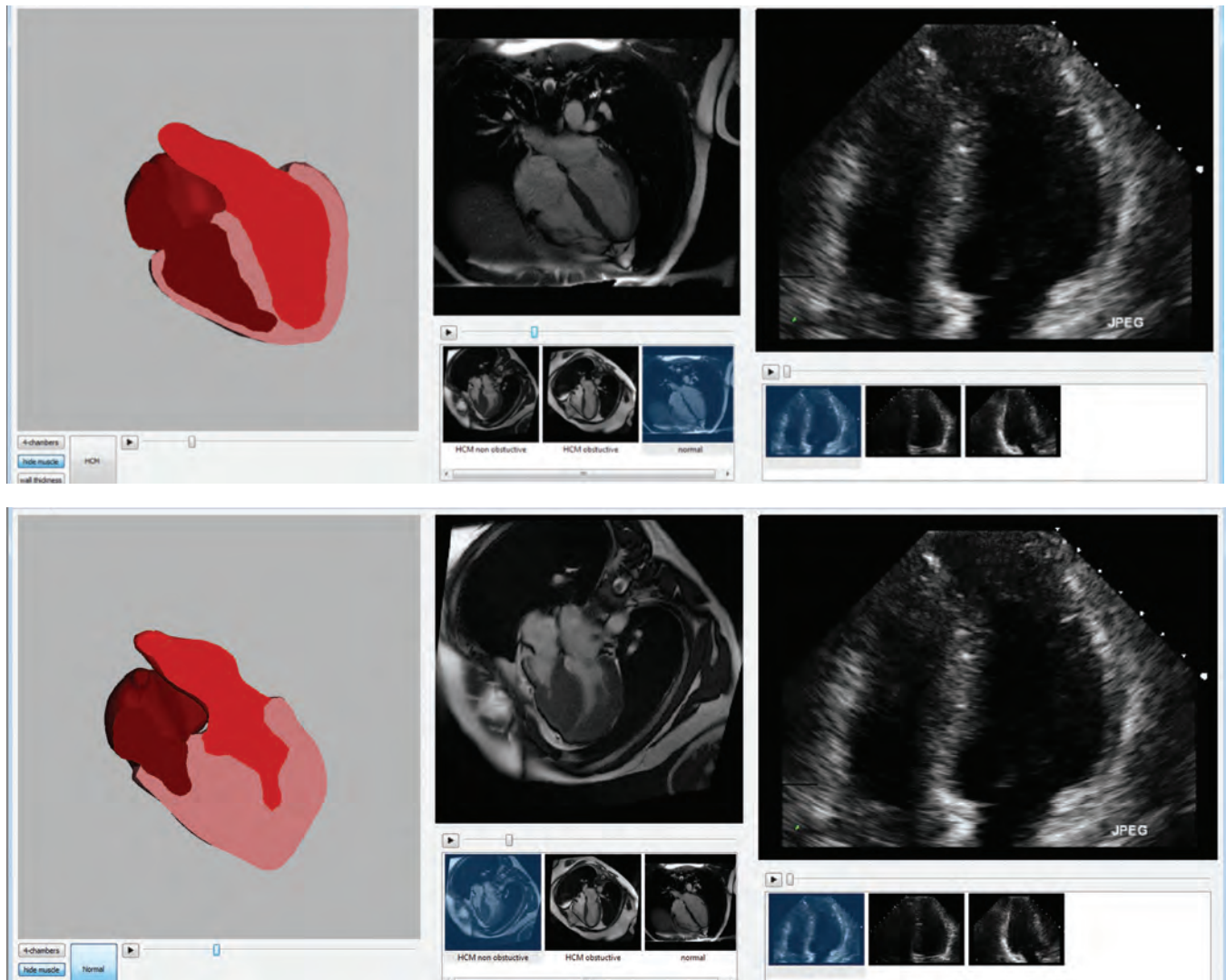


Figure 2. (Top) Screen capture of Normal heart model. (Bottom) Screen capture of Hypertrophic Cardiomyopathy heart model - both with MRI and Echo imaging. Note differences in ventricle cavity and wall size.

Cathy Haake, RN, and team members, preview the patient visits during the morning huddle.



IMPLEMENTATION OF TEAM CELL MODEL IN THE DERMATOLOGY OUTPATIENT CLINIC

Two years ago, the Dermatology Outpatient Clinic identified that teamwork was perceived as being a challenge for their work environment. The nurses did not have interactions with a majority of their patient population, and were mostly carrying out high-level administrative tasks. The clinic physician and nursing leadership decided to perform a Rapid Process Improvement Workflow (RPIW) cycle in order to improve conditions. The result of the RPIW was the design and implementation of a Team Cell Model.

Localization of Teamwork

In the previous model, each team member worked in different locations: the physicians worked out of various office spaces within the clinics, the nurses worked in separate offices, and the medical assistants also worked in separate workstations as they organized their work for the day. With the knowledge that co-location of teams has demonstrated improved nurse-physician relationships

and plan of care in the inpatient setting (O'Leary et al., 2009), Dr. Ko and, Michelle Wolf, RN, former Clinic Nurse Manager, believed that co-location would also be beneficial for the outpatient setting. The Team Cell Model repurposed workstations and transformed them into team cells that now function as a hub for organizing patient care. Teammates Physician Leader Justin Ko, Nurse Cathy Haake, and Medical Assistant Meagan Ury, states it was

a significant culture change to have areas identified as shared team space. As part of the Team Cell Model, the nurse collects histories from new patients; establishing initial rapport between the patient and the team. Dr. Ko and Cathy acknowledge that implementation of the Team Cell Model change could not have happened without the support of visionary leaders and credit Tim Engberg, Vice President of Ambulatory Services and Linda Kresge, RN, MHA/MPA, Administrative Director of Outpatient Center, for facilitating the success of the model.

Huddles

Team huddles are performed twice daily, before patient care begins and after patient care ends. Each morning before they start their day in the clinic, the team reviews the patient caseload for the day. This implementation of the Stanford Operating System (SOS) allows the team to anticipate possible needs for the day, such as: any complex patients whose profiles may require more time, any research patients who need special protocols or consents, and/or any procedures that need preparation prior to the patient's visit. Meagan reports that having the huddle in the morning allows her to be much more efficient in setting up in advance for procedures, and Dr. Ko agreed that this has made the patient care process flow much more efficiently.

The team also performs a huddle at the end of each day. Initially, feedback tokens were used as a means for facilitating discussions amongst the team: red tokens indicated behaviors that the team wanted to stop or correct, and green tokens recognized exemplary performance by a member of the team. These tokens were placed in boxes for each member of the team, and then reviewed at the end of the day huddle. Dr. Ko and Cathy state that they rarely use the boxes any longer, since it became part of the culture for the team to discuss issues and self-correct at the end of each shift.

Patient and Team Satisfaction

Abby Agustin, MSN, RN, Assistant Clinic Nurse Manager, reports that since implementing the Team Cell Model, the clinic's Likelihood to Recommend scores have increased. Cathy indicated this is in part to the patients now having a

specific nurse as their dedicated contact person within the clinic. Cathy asserts that being familiar with the patients on a personal level allows her to answer most questions promptly, and that the co-location allows her easy access to the physician if she has questions which she cannot answer herself. Dr. Ko expresses that in the past, positive feedback letters from patients used to include only his name, but, now these letters are addressed to every member of the team.

Abby relates the nursing turnover rate decreased with the implementation of the Team Cell Model and attributes this in part to the fact that nurses do not want to negatively impact their team by leaving the team. Cathy shares that since the start of the model, she has been able to connect with the patients on a more personal level; that type of positive relationship can provide nurses with job satisfaction and prevent compassion fatigue (Morrison & Korol, 2014). This implementation demonstrates ways to improve some of the factors influencing nurse-physician collaboration to patient care, including: communication, respect and trust, unequal power, understanding professional roles, and task prioritizing (Tang, Chan, Zhou, & Liaw, 2013).

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5

EMPIRICAL OUTCOMES



PARTNERS IN PREVENTION

USING EPIC CANTO AND MOBILE DIGITAL DEVICES
IN WOUND PHOTO DOCUMENTATION



As part of the Stanford hospitalization protocol, nurses are instructed to take wound photo documentation immediately upon admission or during the course of hospitalization. The reality of the workflow, however, is much more complicated than just picture taking.

Through hospitalization of a family member, and as a staff nurse, Ellen Huang, MMS, MPAS, MSN, FNP, PA-C, RN-BC observed a common frustrated workflow from nursing staff, regardless of what department they worked in. Nurses have all experienced similar challenges such as not being able to find the camera, as well as technological issues such as any one of the following: camera battery de-charging, camera SD card missing, full, or defective; photo printer not working and/or printer cord missing; low or empty printer ink cartridge; photo paper stiffed, damaged, or unavailable, or photo backing sheets unavailable.

As a clinical bedside nurse with more than 20 years of experience, and a former intensive care unit nurse, Ellen experienced similar frustrations when she worked. So she questioned and sought to evaluate if all nurses experience this frustration workflow. Ellen began to gather and receive confirmation of similar stress and frustrations from different nursing units, as well as colleagues who work in remote and local hospitals. It appears that the photo-print-paste method was the most popular approach among most hospitals and inpatient units. Stanford use of photo backing sheet has been in place since December of 1996.

Once it was evident that there is an undeniable workflow that needed to change, Ellen pursued the request from her immediate supervisor and unit council. The response that she received, however, was that current digital

photo-print-paste method was the best method that was available, or at least known of. So she decided to go back to school, with the mission of finding a solution to decrease wound related pain, sepsis, hospitalization, and death. Enrolled in an MSN-informatics program and a wound-ostomy-continent program, she gained the tools and platform to learn about current available information on technology. She was also given the opportunity to learn about other hospitals' wound treatments.

Supervised by two informatics mentors, Connie Taylor, MPA, RN-BC, Program Manager for Electronic Health Records (EHR) Business Continuity and Regulatory Compliance, Information Technology (IT) Services, and Lisa Meyer, Director of Informatics Technology, Inpatient Services, Ellen was granted the permission to perform workflow analysis in 20 inpatient units. In a direct workflow observation, with semi-structured self-reporting data, more than 70 Stanford nurses voluntarily responded that in 2013, 98% of nurses averaged the time to perform wound photo documentation at 20-60 minutes. This included the time spent looking for the hospital approved unit camera, photographing the wound per hospital protocol; printing, pasting, and placing it in the chart. The time was varied and affected by the uniqueness of the patient, the number, and severity of wounds, as well as unavailable equipment.

During Ellen's practicum rotation, mentors arranged for her to meet and shadow numerous IT specialists, including Hamed Barahimi, Lead IT in the Ambulatory Services. Hamed showcased his team projects including Epic Haiku™, the mobile digital devices which has access to EHR. Furthermore, during her IT internship, she found that numerous solutions were available to improve the specific issue of wound photo workflow. Some solutions, however, were very expensive. Some did not interface with EHR. Some require a different electronic platform, or require a

large digital camera which can become a challenge when taken into a contact isolation room, or further complicate nursing workflow. After a great deal of workflow and cost analysis, Epic Canto™ emerged as the solution to abolish seventeen years of photo-print-paste documentation.

While listening to all the nurses who expressed their frustration at the antiquated system, she set a goal with the plan of transforming the entire inpatient wound photo documentation process. With the reality of patients being transferred from unit-to-unit as a result of where they are in their treatment, along with the fact that different digital cameras and photo printers can yield a different picture output, the hospital required standardized equipment and workflow approach. The plan to standardize practice, led to the procurement of 25 mobile digital devices. All inpatient units have been given one device with the Epic Canto program preloaded. However based on 2013's printing materials being obtained from supply and distribution, four nursing units received two devices.

Once the devices became available, Barbara Mayer, PhD, RN, Director of Nursing Quality, and Robinetta Wheeler, PhD, RN, Manager of the Wound Department, started collaborating on an installation of an updated evidence-based wound treatment flowsheet. As a result, bedside nurses would be able to use the mobile digital device and reference current treatment guidelines and inform physicians of the desired treatments with the goal of initiating appropriate treatment as soon as any wound is discovered and photographed.

The Epic Canto project focuses on improving the triple constraints: time, cost, and scope. A task that used to take 20-60 minutes to achieve, will now take no more than three minutes with immediate upload and organization into a patient's EHR. Physicians can view and order appropriate intervention, treatment, or consults upon immediate referral from nursing staff and viewing of the wound photos. The consulting wound nurses who received the requests can organize and prioritize their daily workflow based on the uploaded pictures, plus consult patients based on the need and urgency. This innovation and implementation alone will reduce nursing and staff labor and material costs by at least \$500,000, while improving insurance reimbursement.

Final authorization for Epic Canto and device roll out was approved in August 2014. This improvement reforms, expedites, and improves patient's wound care. It cuts costs, and makes the entire process more effective and efficient. Importantly, it also reaffirms Stanford Health Care's Mission statement: To care, to discover, and educate.

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GETTING TO ZERO

CLABSI REDUCTION

The prevention of central line-associated bloodstream infections (CLABSI) is a key part of Stanford Health Care quality initiatives.

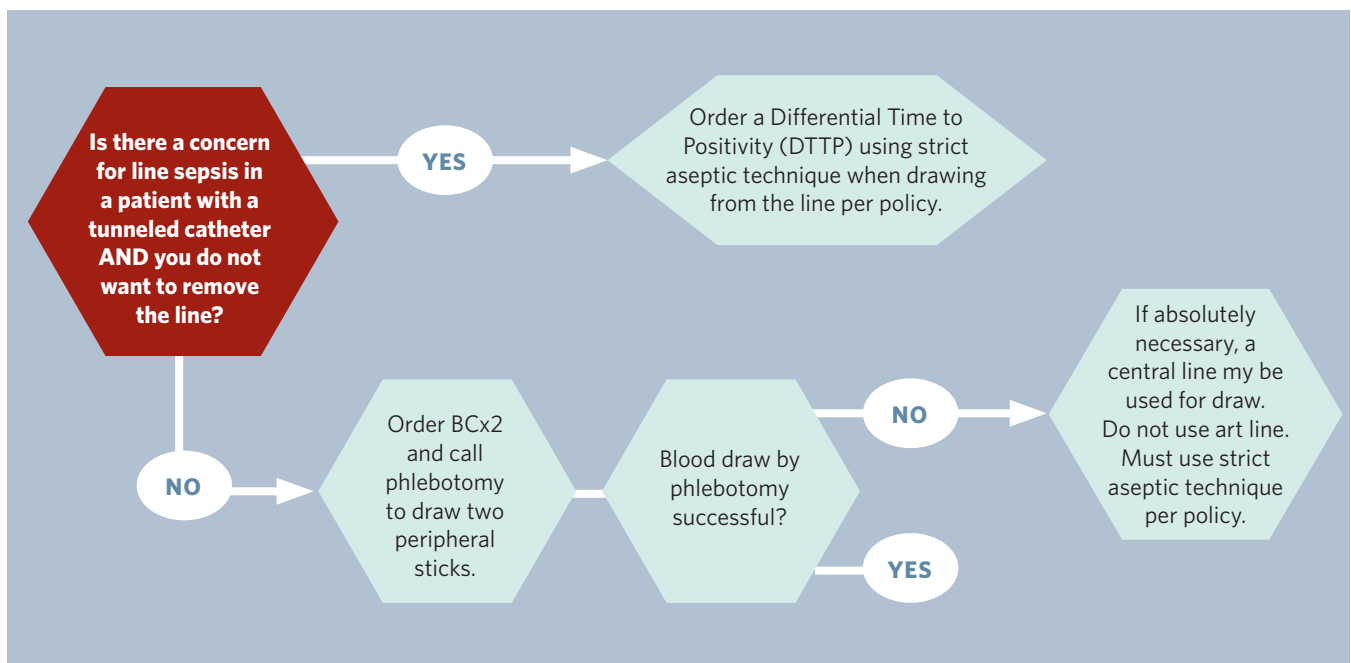
In Quarter 1, 2012, a multi-disciplinary group implemented the “Getting to Zero Clinical Initiative”, with a goal of reducing CLABSI hospital- wide. This group of nurses and physicians identified problems and potential solutions throughout the hospital to reduce CLABSI.

The E2 Intensive Care Unit (E2 ICU) was able to maintain a zero CLABSI rate from March, 2013 until June, 2014 (15 months). This was possible because of a close partnership between the infection prevention department and the nurses and physicians from E2 ICU. The E2 Clinical Nurse Specialist and an Infection Control Nurse spent time rounding on all patients with a central venous catheter

(CVC). The nurses discuss deficiencies and changes in practice which would promote the “Getting to Zero Clinical Initiative”.

The E2 ICU CLABSI rate had been very low until the final quarter of 2012. As a result of an uptick in CLABSI, detailed chart and practice reviews were undertaken. These revealed an increase in the use of the differential time to positivity test. This test requires simultaneous blood culture samples from a CVC and a peripheral blood sample. The test is employed when the intention is to preserve the CVC line. However, upon review, it was discovered that this test was being erroneously ordered. The test was being ordered when the intent was to discontinue the CVC line. These CLABSI results typically had only 1 positive set of blood cultures, usually from the CVC line only. Due to the national reporting definition in use at that time, these results were classified as CLABSI,

Blood Culture Collection Recommendations



when the most likely explanation was contamination from biofilm lining the catheter, therefore making these false positive results. To accurately identify a CVC as the source of infection using the differential time to positivity test, both sets must be positive. The unfortunate result of a false positive is that the patient may receive antibiotics when not warranted. To solve the problem, education of both nurses and physicians was undertaken so that the differential time to positivity test was only used when a CVC line needed to stay in place and there was concern that the line was the source of an infection.

As a result of this discovery, a best practice blood culture collection recommendation was created by the Infection Prevention Department to standardize practice. An algorithm was also developed (see figure 1). The algorithm was instituted throughout Stanford Hospital in the 3rd quarter of 2013 and was posted on the E2 nursing unit for nurses to review.

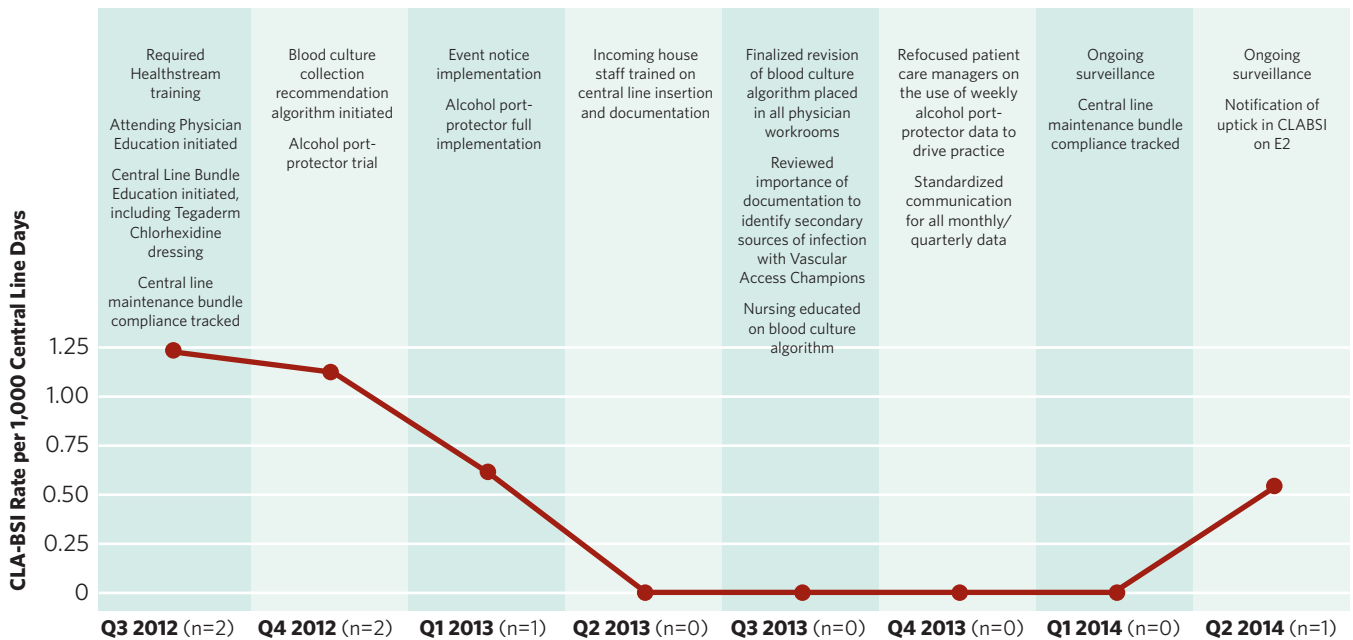
To complement the algorithm, the Vascular Access Device (VAD) group developed a video to demonstrate correct

blood culture collection technique. The video was used as an educational tool by the VAD champions to show nurses on their units and to review good practice.

“GETTING TO ZERO”

E2 ICU was able to maintain 15 consecutive months of zero CLABSI in part by the collaboration of nurses from various departments. The Infection Control Nurse, the E2 ICU CNS and the unit based VAD Champion monitor compliance with alcohol cap usage and the central line maintenance bundle. Tracking and reporting back to the nursing unit on a monthly basis allows for the unit to make imperative adjustments to their practice, if necessary, to attain the goal of “Getting to Zero”. A review of CLABSI is also performed to look for any trends or issues each quarter. When problems are detected, best practices are reinforced. E2 has acted as a springboard for best practice changes hospital wide. The CLABSI prevention team is actively seeking ways to improve practices on their unit which can be applied hospital wide. Attaining zero CLABSI for 15 months was a big achievement for E2 ICU, but the ultimate goal is hospital wide zero CLABSI forever.

E2 ICU CLABSI Rate



DAISY AWARDS

HONOR FOR NURSES WITH HEART

Nurses who receive a DAISY award demonstrate a Caring H.E.A.R.T. CARE AND COMPASSION show kindness and caring for everyone

HONESTY show truthfulness and sincerity in all aspects of patient care

EXCELLENCE AND EDUCATION commit to doing the best at all times

ADVOCACY speak for or defend the patient's right to make choices about their care

RESPECT show consideration and appreciation of others and sensitivity for individual differences, needs and concern

TEAMWORK collaborate with team members to assure excellence in patient care

RECIPIENTS OF THE DAISY AWARD FOR 2013-2014

Eric Cooper, CAPR

"Eric is an excellent patient advocate, always raising our standards here in CAPR to provide excellent patient care."

Emmika Elkin, F Ground

"Emmika began crocheting hats for our patients and gives these hats to patients when they begin to lose their hair. Not only does this gift of compassion please her patients for practical reasons, but it also shows them that their nurse truly cares about them and what they are going through on a personal level."

Jannette Mendoza, G1

"She consistently demonstrates empathy and goes above and beyond for patients and their families. She is the very role model of professionalism and nursing excellence."

Elvie Rambac, F3

"She works great with everyone and the staff respects not only her knowledge and skills, but her positive attitude towards work."



2014 Daisy Award Recipients
Renee Yee, RN, Larry Williams RN

Sandy Reiter, D1

"Her sincerity in helping others through difficult times was apparent during her discussions with the family, and the respect and compassion she exhibited was extraordinary."

Larry Williams, E2

"When cure is no longer an option, our nurses are the angels that help patients and families move from a curative to a comfort focus. He was the driving force that created the space for both the patient and family to celebrate the end of life."

Renee Yee, D3

"Renee is a true model of the 'Professional Nurse,' for she is honest and accountable in her nursing practice, she values education, shares her knowledge and is a true nurse scientist, she respects and advocates for her patients and her peers, and she believes in teamwork. Most importantly, she is compassionate to those she cares for and to those she works with."

AWARDS AND CERTIFICATIONS 2013–2014

Accredited Case Manager (ACM)

Clarissa Bautista, May 2013, CQSS/Social Work
Stephanie Bowen, May 2013, CQSS/Social Work
Tatiana Norman-Brivet, March 2013, CQSS/Social Work

Acute Care Nurse Practitioner (ACNP-BC)

Virginia Warden, October 2014, Emergency Services
Reid Leinart, August 2014, Emergency Services

Adult Acute Care Nurse Practitioner (ACNPC)

Sarah Booth, September 2014, Nursing Education & Practice

Adult Nurse Practitioner (ANP-BC)

May Cao, August 2013, Lymphoma
Hui Kuang, May 2014, Cardiology

Adult Psychiatric-Mental Health Nurse Practitioner (PMHNP-BC)

Courtney Davis, December 2013, H2

Advance Oncology Certified Nurse Practitioner (AOCNP)

Megan Harrington, November 2013, Nursing Education & Practice
Mary Petrofsky, October 2013, Nursing Education & Practice

Bone and Marrow Transplant Certified Nurse (BMTCN)

Lizza Abella, October 2014, Infusion Center
Judith Berry-Price, April 2014, F Grd
Nimfa Fajardo, April 2014, E1
Beverly Salangsang, April 2014, E1
Debra Tierney, April 2014, BMT Clinical Practice
Jennifer Wild, April 2014, E1

Certified Acute/Critical Care Clinical Nurse Specialist (CCNS)

Annette Haynes, November 2013, Nursing Education & Practice

Certified Ambulatory PeriAnesthesia Nurse (CAPA)

James Bielawa, November 2014, Byers Eye Institute
Gregory Hoovler, November 2013, Cath Angio
Yi Rong, November 2013, Cath Angio

Certified Bariatric Nurse (CBN)

Wendy DeNamur, July 2013, Digestive Health Center

Certified Clinical Transplant Coordinator (CCTC)

Kim Miller, November 2013, Kidney Transplant

Certified Emergency Nurse (CEN)

Bonnie Chan, November 2014, Emergency Services
Jason Francis, July 2013, Emergency Services
Natalie Kaplan, May 2014, Emergency Services
Della Lau, November 2014, Emergency Services
Nicole Maxson, June 2013, Emergency Services
Laura Pajari, November 2013, Emergency Services
Leanne Perez, November 2013, Emergency Services
Ijeoma Okonkwo Pope, June 2013, Emergency Services
Vera Sanina, November 2014, Emergency Services

Certified Heart Failure Nurse (CHFNP)

Barbara Ellis, June 2013, D1
Rhonda Hart, June 2013, D1
Maricela Martinez, March 2014, D1
Kimberly Sangalli, September 2013, Cardiology

Certified Hospice and Palliative Nurse (CHPN)

Jamie Chang, September 2013, CQSS/Social Work

Certified Medical Surgical Registered Nurse (CMSRN)

Ma Luisa Bagunu, November 2013, F Grd
Jeanne Michelle Florence, March 2013, B1
Neil Nelson, April 2014, C3
Michael Popham, October 2013, E3
Kristen Sada, June 2013, C2
Jerri Westphal, March 2014, B1
M Cristina Woytowitz, October 2013, E3

Certified Neuroscience Registered Nurse (CNRN)

Nicole Cromwell, July 2014, E2
Alicia Ketola, October 2013, E2
Dawn Kurtz, March 2013, E2
Diana Paulson, March 2014, G1

Certified Nurse Leader (CNL)

Shelly Arthofer, April 2014, TRANSFORM Program
Nicole Cromwell, July 2014, E2
Jessica Evanchak, August 2013, Nursing Education & Practice
Alison Morris, December 2013, E3
Sarah Rinn, December 2013, E3

Certified Nurse Operating Room (CNOR)

Dana Gonzales, April 2013, Operating Room
Por Gek Low, July 2013, Operating Room
Lelyn Silva, October 2013, Operating Room

Certified Post-Anesthesia Nurse (CPAN)

Rosemary Raymond, May 2013, PACU

Certified Professional in Healthcare Quality (CPHQ)

Anita Girard, July 2013, Nursing Education & Practice

Sandi Nishimura, November 2013, Nursing Quality

Certified Registered Nurse of Ophthalmology (CRNO)

Ying Zhao, September 2014, Byers Eye Institute

Certified Transport Registered Nurse (CTRN)

Sandra Correia, November 2013, Life Flight

Certified Wound and Ostomy Care Nurse (CWOCN)

Coleen Salsbery, November 2013, North ICU

Critical Care Registered Nurse (CCRN)

Trisha Aloquina, November 2013, D1

Michelle Babst, May 2014, North ICU

Mary Bailey, November 2013, D1

Jessica Borlongan, October 2013, Cath Lab

Nicole Burnham, July 2014, H1

Edward John Calderon, March 2013, North ICU

Johnathan Clevinger, November 2014, E2

Ryan Donlin, January 2014, E2

Macy Florina, November 2014, E2

Lori Fox, October 2014, North ICU

Erica Galvan, October 2013, E2

Christopher Hernando, January 2014, North ICU

Corey Kukowski, January 2014, E2

Amy Lee, September 2014, D1

Roy Lundquist, June 2013, E2

Julia Marchan, June 2014, E2

Maricela Martinez, October 2013, D1

Chelsea Noone, July 2013, Emergency Services

Seung Oh, June 2014, Nursing Float

Ma. Lucille Parker, June 2013, E2

Ann Marie Rovner, May 2013, E2

Amy Townsend, August 2013, E2

Martha Villanueva, July 2013, E2

Glenda Yarra, April 2013, B2

CCRN-Cardiac Medicine Certification (CCRN-CMC)

Edward John Calderon, January 2014, North ICU

Erica Galvan, January 2014, E2

CCRN- Cardiac Surgery Certification (CCRN-CSC)

Edward John Calderon, August 2014, North ICU

Family Nurse Practitioner (FNP-BC)

Catherine Sullivan, November 2013, Operating Room

Ruwan Rajapakse, April 2013, Express Care Clinic

Nurse Practitioner Certified (NP-C)

Kelsey Lynd, July 2014, Gynecology

Divina Masaquel-Santiago, March 2013, Emergency Services

Oncology Certified Nurse (OCN)

Betsy Ballew, October 2013, C1

Angela Beckler, December 2013, Infusion Center-Redwood City

Sarah Dunlap, March 2013, Liver Transplant

Susan Oda, October 2013, E1

Allyson Pearlman, November 2013, E1

Molly Sauer, November 2013, Infusion Treatment Area

Orthopaedic Clinical Nurse Specialist Certified (OCNS-C)

Pamela Schreiber, July 2013, Nursing Education & Practice

Progressive Care Certified Nurse (PCCN)

Charlotte Hanna Ahr, April 2013, Emergency Services

Michelle Babst, December 2013, North ICU

Edward Burns, July 2014, Nursing Float

Lauren Chuck, September 2014, B2

Donna Dahlke, January 2014, D3

Elsbeth Doll, June 2013, D2/G2

Brandy Emanuel, June 2013, D1

Petra Jurikova, January 2014, B3

Joelle Koski, May 2014, B2

Fang Liu, July 2013, B2

Daisy Margret Mark, August 2014, B2

Jose Mercado, March 2014, B2

Rebecca Ott, January 2013, D3

Jackie Lynn Parmar, September 2014, D3

Marlow Phillips, July 2013, H1

Sarah Resz, May 2013, B2

Ferdinand Rosales, May 2013, B2

Heather Searles, March 2013, B2

Mae Silva, July 2013, D2/G2

Theresa Suarez, May 2013, North ICU

Berna Terrado, November 2013, D3

Dominique Watt, October 2013, Cath Angio

Samantha Westhorpe, June 2014, B2

Maribel Wu, April 2013, B2

Glenda Yarra, May 2013, B2

Registered Nurse- Board Certified (RN-BC)

Jan Leslie Bunting, March 2013, Endoscopy

Registered Nurse Certified- Inpatient Obstetrics (RNC-OB)

Denise Benson, October 2013, Patient Transfer Center

Master/Graduate Degree

Scarlette Aliga-Cabamungan, UCSF, June 2014
Shelly Arthofer, University of San Francisco, May 2014
Sylvianne Becker, UCSF, July 2014
Sarah Booth, Georgetown University, September 2014
Edward Burns, Grand Canyon University, February 2014
David Caballero, University of San Francisco, May 2014
Monica Campbell, UCSF, June 2013
Nicole Cromwell, University of San Francisco, May 2014
Jessica Evanchak, University of San Francisco, August 2013
Melody Falsis-Mittelbuscher, Spring Hill College, May 2013
Catherine Kelly, Walden University, April 2013
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Misty Stawasz, Liberty University, August 2013
Jocelyn Vadil, Walden University, April 2013
Virginia Warden, UCSF, June 2013
Karen Winford, Chamberlain College, 2013
Jean-yee Yu, CCN/DeVry University, July 2014
Kerry Zoss, UCSF, July 2013

Bachelor/ University Degree

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Colleen Bonnett, Chamberlain College of Nursing, April 2014
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Jean Dasilao-Argonza, Rowan University, June 2014
Nimfa Fajardo, Chamberlain College of Nursing, February 2014
Patricia Greilic, Holy Names University, May 2014
Pamela Harris-Ponti, Jacksonville University, June 2013
Angela Johnson, San Jose State University, May 2013
Petra Jurikova, University of Texas at Arlington, May 2014
Susan Murphy, University of Phoenix, September 2013
Raymond Pickett, October 2013
Michael Popham, August 2014
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Karin Rho, Chamberlain College of Nursing, June 2013
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Elaina Silvestre, Chamberlain College of Nursing, August 2014
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Kara Sutton, Grand Canyon University, May 2013
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