ON THE Cover

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The new positive patient identification (PPID) system allows Audra Honderkamp, BSN, RN, Newborn ICU assistant nurse manager, to identify patients at the point of care.

Inside THIS ISSUE

From Peggy ...................................................... 3
Doctoral degrees advance nursing practice ............. 4
Reducing Hospital Acquired Conditions (HACs) ........ 6
Positive patient identification system improves patient safety ......................... 8
Meet Cindy Brooks ........................................ 10
New technology revolutionizes detection of respiratory viruses ..................... 11

Attack the HACs

St. Louis Children’s Hospital has joined with 79 other pediatric hospitals in a comprehensive program targeting 10 common hospital acquired conditions (HACs) with the goal of a 50 percent reduction. Karen Holzum, BSN, RN, and Tony Goelz, PT, assist patient Katherine Kemper using evidence-based fall prevention methods in place at St. Louis Children’s Hospital. Check out the progress of these efforts on page 6.
Over the past five years, St. Louis Children’s Hospital has hosted several workshops focusing on how to achieve a high-reliability patient safety culture. We have made progress in many areas, and yet we still have a distance to travel before we can truly say we have achieved that goal. In 2012, we joined the Ohio Children’s Hospitals Solutions for Patient Safety (OCHSPS) collaborative and began to focus intensely on eliminating Hospital Acquired Conditions (HACs).

Interestingly, the collaborative opens each workshop with a reminder that patients ask for only three things: “Don’t Hurt Me, Make Me Better and Be Nice to Me.” Does this remind you of something familiar? How about the Superior Patient Experience: Safe Care, Effective Care and Exceptional Service? Clearly this is work that fits with our mission to “Do What’s Right for Kids!”

As part of this collaborative, our work in the coming year will add a focus on our organizational safety culture. I recently attended a two-day training session with several of our hospital leaders and physicians to hear about this work, and am excited about its potential to impact some long-standing challenges in health care. Training will be offered using some very simple, yet powerful communication tools and behavioral expectations — some of which are shared in this issue — that have been shown to drastically reduce the risk for serious safety events. However, these tools will only work if we each take personal ownership for using them to help each other stay safe. This training will be provided to every hospital employee and staff member, including our Washington University physician partners and community pediatricians who serve as attending physicians for their patients. While this training will require time and some creativity to accomplish, I believe the results will be well worth it. It will make our hospital a better, safer place to work and receive care.

In this issue of Pediatric Perspectives, you will also read about our impressive progress in eliminating harm. I hope that you will be energized by this, and ready to join in the next leg of our journey to become even better. This is a journey that can never end because “to err is human.” We need to continuously search for ways to improve processes to help us catch our errors before they harm patients! Let’s get to it!

Peggy Gordin, MS, RN, NEA–BC, FAAN, is SLCH’s Vice President of Patient Care Services. She can be reached at pgordin@bjc.org.
Kathleen Houston, DNP, APRN, PNP-BC, (right) investigated a practice change within the Emergency Department in the timing of antiretroviral therapy and created a screening tool. Nurse practitioners like Angela LaPointe, CPNP, RN, (left) use the tool to quickly identify at-risk patients.

Earning a doctoral degree is a major accomplishment for any individual, and the recent trend toward doctoral education in nursing is gaining momentum at St. Louis Children’s Hospital (SLCH). Within the past few months, Joan Smith, PhD, APRN, NNP-BC, completed her degree at the University of Missouri-Kansas City; Carole Branch, DNP, RN, PNP-BC, earned her degree at the University of Missouri-St. Louis and Kathleen Houston, DNP, APRN, PNP-BC, graduated from Saint Louis University. All three nurses engaged in scholarly work that directly reflected the demands of their degree.

Dr. Smith conducted a research study to assess the impact of a novel practice to provide infant massage to hospitalized, high-risk infants called the M technique. In addition to extensive review of the literature, Dr. Smith prepared for this research study by obtaining specialized training in the M technique and conducting a feasibility study to determine whether or not this technique would benefit very preterm infants. Following her positive initial results, she designed a study that measured neurodevelopment, growth velocity, and physiologic and behavioral state in these infants. Although there was no change detected in neurodevelopment, her findings revealed a significant difference in growth velocity, as well as positive changes in physiologic and behavioral state, demonstrating that the infants became much more comfortable and relaxed during and following the intervention. Results indicate that health care professionals can apply a potentially cost-effective, infant-driven comforting touch strategy. More importantly, health care professionals can teach parents to deliver the M technique. This practice could have beneficial outcomes for infants, their families, the health care system, and society in general. This study extended the existing body of knowledge about the subject and provided a basis for further research — a hallmark of PhD education.

The doctorate in nursing practice (DNP) degree requires a clinically focused scholarly project that uses existing research to implement and evaluate a change in practice — an evidence-based practice approach. Dr. Branch became interested in the concept of compassion fatigue after reading about the subject and reflecting on the comments and concerns expressed by her colleagues. Compassion fatigue can result in a significant personal and professional impact, a financial impact for the institution, and a substantial safety impact for patients. She read extensively on the subject to understand all aspects, selected an appropriate theory to ground the proposed research, and conducted a randomized-controlled trial to help babies like Jenna Dover in the Newborn ICU.
her inquiry, consulted with experts in the field, and participated in a training class on compassion fatigue to prepare for her project. She then designed a survey to identify the prevalence of compassion fatigue among health care professionals who provide direct patient care at SLCH. Dr. Branch conducted her study and collected responses from 296 direct-care providers. She found that compassion fatigue exists at SLCH in approximately the same proportion as found in the literature. Her literature search confirmed that the Centers for Disease Control’s 2010 guidelines recommended initiation of ART as soon as possible after potential HIV exposure. To address the issue, she created a screening tool for use in triage by ED physicians and pediatric nurse practitioners to quickly identify at-risk patients. The provider met with the patient and parent, if appropriate, in a private area to discuss the treatment and order a dose of Combivir and ondansetron. The medications were then administered prior to the usual in-depth interview by the social worker and history and physical exam by the physician. Following implementation of the project, almost half of the eligible patients received ART within the 60-minute-goal. This DNP project used existing research to significantly change practice and improve the delivery of patient care.

For additional information, contact Joan Smith at joanrs@bjc.org; Carole Branch at cab2684@bjc.org; or Kathleen Houston at kathle1h@bjc.org.
**STRUCTURAL EMPOWERMENT**

**Reducing Hospital Acquired Conditions (HACs)**

In 2012, St. Louis Children’s Hospital (SLCH) joined the Ohio Children’s Hospitals’ Solutions for Patient Safety (OCHSPS). Together with 79 other pediatric hospitals, SLCH began the journey to significantly reduce inpatient serious harm events focusing on 10 specific hospital acquired conditions (HACs). The hospital's annual goal to achieve a 50 percent reduction in HACs has become one of SLCH's top priorities.

SLCH is focusing on reducing these HACs:

- adverse drug events (ADE)
- catheter associated urinary tract infections (CAUTI)
- central line associated bloodstream infections (CLABSI)
- injuries from falls and immobility
- pressure ulcers (PU)
- venous thromboembolism (VTE)
- ventilator associated pneumonia (VAP)
- surgical site infections (SSI)
- obstetrical adverse events (OAE)
- preventable readmissions

Significant organizational resources were allocated to support the improvement efforts. To provide executive-level oversight and guidance, the hospital created a HAC program management office (PMO), identified HAC team co-leaders and established a HAC team development roadmap. A program structure was established to support the individual HAC teams; quality improvement tools were employed, measurement strategies were implemented, and monthly reviews of outcomes and process reliability were conducted. Each team’s progress is currently tracked and measured to a deliverable action plan and managed by the PMO and project manager. Through this planned approach, the project work has been broken down into phases and progress is reported at a monthly Goal Deployment operating review.

With a goal to reduce central line associated bloodstream infections by 50 percent, the hospital has introduced several new models, including standardized care practices for central lines. In the Pediatric ICU, Maggie Myers, BSN, CCRN, “scrubs the hub” with chlorhexidine gluconate for patient Logan Harvey, as his mother, Vanessa, observes.
Initially, efforts focused on the areas that presented the highest number of opportunities: CLABSIs, SSIs, CAUTIs, and PUs. To accelerate improvement efforts, teams leveraged the expertise from ICUs, expanding the work they began years ago to include the entire hospital. Armed with the ICU's lessons learned, the House Wide Central Line Care team and the CAUTI HAC team were developed. In an effort to optimize all of the hospital's existing resources, the SSI HAC team and PU HAC team were augmented from existing groups. With the newly created HAC teams and the augmented HAC teams, the hospital standardized improvement efforts. Significant accomplishments have been made by each of the top four HAC teams.

Central Line Associated Bloodstream Infections
The team has standardized the care practices for central lines, created a pre-packaged central line dressing change kit, and established peer-to-peer observations to ensure central lines are accessed using a consistently safe practice. Daily discussion of the continued need for the central line with the medical team during rounds and weekly provider/nurse dressing integrity rounds on all central lines are also being performed in higher risk areas.

Surgical Site Infections
The surgical site infection team has implemented changes in the electronic ordering system and introduced visual aids to improve the delivery of pre-surgical antibiotics. By delivering the right type of antibiotic, at the right time and dose, the risk of infection is significantly reduced. The team is also initiating pre-surgical chlorhexidine gluconate baths in Same Day Surgery for specific cases as an additional method to reduce the risk of infection.

Pressure Ulcers
The Skin and Wound Team focused their efforts on improving the consistency of daily skin assessments, medical device rotation and patient repositioning. They also implemented an electronic report that identified the highest risk patients on each unit.

Catheter Associated Urinary Tract Infections
Although the CAUTI HAC team wasn’t established until later in 2013, members have already created a urinary catheter checklist to ensure proper precautions are taken during insertion. Additionally, the group implemented visual aids to ensure catheter collection systems are properly maintained at the bedside and during radiology procedures.

Through these concentrated efforts, SLCH has seen a 34 percent reduction in HACs through October 11, 2013. This translates to 15 patients saved from unintentional harm. The work of these HAC groups has made a significant impact on patient outcomes.

For additional information, contact Stephanie Johnson at saj2258@bjc.org.
Positive patient identification system improves patient safety

The Clinical Laboratories at St. Louis Children's Hospital (SLCH) have an important role in ensuring patient safety. The chance for human errors and omissions is high for specimen collection, testing, blood transfusion and human milk administration because each process involves multiple manual steps. Automating these processes with a positive patient identification (PPID) system can virtually eliminate errors.

Landmark studies by the Institute of Medicine in 1999 indicate:
- 44,000 to 98,000 patient deaths per year due to medical errors
- 5.8 percent of phlebotomy samples are mislabeled, at a cost of approximately $700 per incident
- One in 165 pre-transfusion specimens are mislabeled
- More than 20 plus patients die annually from transfusion incompatibility
- Annual cost of specimen labeling errors alone is $200 to $400 million

The PPID project was approved in May 2012 for Barnes-Jewish Hospital (BJH), SLCH and Parkland Health Center. The combined initiative for implementing PPID was the laboratory system used by all three hospitals.

Barcode technology allows clinicians and caregivers to positively identify patients at the point of care when collecting specimens, transfusing blood or preparing human milk for infant feedings. PPID was designed to improve patient safety by ensuring the right specimens are collected on the right patient in the right containers at the right time.

The project was governed by a steering committee comprised of various staff from all three facilities, including laboratory, nursing, Clinical Information Services (CIS) and senior leadership. Additionally, a core work team and teams from each entity composed of front-line staff and managers collaborated to discuss the system build and workflow issues. Multiple decisions were made by the core team regarding computer equipment, workflow, training and roll-out schedules. Global settings for the PPID system were agreed upon by all three entities to coordinate expectations, assess risks and define measures for success.

The SLCH work team developed a training program, which included a short video, laboratory specimen collection tips and scenarios using the PPID system. Trainees simulated scanning patient ID armbands, selecting tests from the computer screen and printing labels. Super users were identified to help support the transition to the system.

Implementation at SLCH began in April 2013 in the Newborn ICU and the 9 West/Bone Marrow Transplant Unit. Every few weeks thereafter, additional areas were implemented with completion of inpatient areas by the end of June 2013. Areas not on PPID to date include the Emergency Department (ED) and Operating Room. Plans call for the ED to begin using the system by year’s end. Blood transfusion is scheduled to be implemented by the end of first quarter 2014, with human milk administration to follow.

The system for collection of specimens requires a computer, scanner and printer. Steps to use the system include:
- Activate orders in KIDDOS if needed
- Sign on to the PPID system (using network sign-on)
- Scan the patient armband (which must be attached to the patient)
- View specimens that need to be collected and select tests (screen will indicate order of draw and the correct specimen tubes)

For very small babies in the Newborn ICU, scanning a card attached to the patient known as a “luggage tag” is an acceptable practice.
- Scan the printer to print labels for the test(s) selected to draw
- Draw the specimen(s). Use labels to identify specimen tubes at the bedside
- Place labels on all tubes and scan the barcode on the labeled tubes to confirm collection
- Place all labeled tubes in a re-sealable, zipper storage bag and send to the laboratory

Prior to implementing PPID, 160 mislabeled tubes were occurring annually. In August, the first month for evaluating data, there were two mislabeled specimens from the same floor, both of which were received without labels affixed to the tubes.

With PPID implementation, patient safety has been improved by collecting the right specimens, on the right patient, at the right time — reducing mislabeled specimens to almost zero.

These samples were rejected due to the laboratory’s zero-tolerance policy.

With PPID implementation, patient safety has been improved by collecting the right specimens, on the right patient, at the right time — reducing mislabeled specimens to almost zero. Implementation for blood transfusion and human milk administration will complete the PPID project in 2014, ensuring additional safety for our patients.

For additional information, contact Susan Deuser at smd6071@bjc.org.

During morning rounds on 8 West, Candice Hubbard, phlebotomist, uses the new identification system, step by step.
Pediatric Perspectives

Who or what inspired you to become a nurse?

It was probably the what. I was always going to be a teacher until I became a candy striper at age 15. I did it to earn a Girl Scout badge. And, I loved it! My fabulous high school counselor then encouraged me to go into nursing and said I needed to get my BSN because that was the way of the future.

How have you seen the changing role of the nurse leader impact health care?

I started in the day of the head nurse. She was essentially the person who made the schedule. In the evolution, the nurse became seen as a leader, even within the health care team, as opposed to practicing what the physician told her to do. It was more independent nursing practice. I still have a mentor to this day that I so respect and she took us to a whole new level as a nurse leader. Defining that nursing had its own “practice” has had a huge impact on health care.

What attributes do you find most important for nurse leaders, both formal and informal?

A nurse leader needs to have a professional presence because you are representing not only the profession, but the staff that you work for. You have to be a good listener and be willing to explore new ideas, proactively not reactively.

In your terms, what is the difference between good nursing care and exceptional nursing care?

The typical response would be going the extra mile. For me, good care is getting the required stuff done. You can do that and give good care and get good outcomes. But, exceptional care is individualizing it for the patient, the care and the compassion. Taking time to do the little things makes the difference. And, exploring new ways to do things so we can be even better. Not just being happy with the status quo.

What projects or goals are you most looking forward to accomplishing in the upcoming years?

Being involved in the building expansion project; having involvement in something for a long-term future, particularly as it relates to the Pediatric ICU; and looking at innovative ways to staff and do things differently. I like to think about ways we can do things differently, ways that we can give even better care that costs less or thinking outside the box so that we aren’t so siloed. We need to be willing to try new things and accept that failure is a possibility. I started to think about these things when my daughter had a health care crisis. I had been a nurse for quite a while when that happened, but it wasn’t until I was on the other side of the bed as a patient’s mother that I saw things differently. I questioned processes and practices and wanted to help change things.

Meet Cindy Brooks

Cindy Brooks joined the St. Louis Children’s Hospital (SLCH) team in February as Director of Pediatric Intensive Services. Currently, she oversees Respiratory Therapy, Pediatric ICU, 7 East, Float Pool, the Pediatric ICU Advanced Practice Nurses and the Administrative Supervisors. Cindy came to SLCH from the Women’s & Children’s Hospital at MU Health Care in Columbia, Mo., after dedicating 35 years. The open position came across her email and caught her eye. She was intrigued and thought it was time for something different. Her move back to St. Louis was made easier by the fact that her parents still reside in the area. Cindy and her husband have been married for 37 years and have two daughters, ages 24 and 20. Cindy earned her bachelor’s degree in nursing and master’s degree in nursing from the University of Missouri-Columbia. Her husband and eldest daughter are Mizzou grads and her 20-year-old is currently a student there. Needless to say, they bleed tiger blood!
In the eight months you’ve been here at SLCH, what has impressed you most?
The warmth and the single-mission mindedness of everyone that works here. Of any organization that I’ve ever been in, this place lives and breathes the mission. I felt it when I stepped into the interview.

Now for a few fun questions...
If you had $1,000 to spend frivolously, where would you shop?
Probably Chico’s, which is where I get most of my clothes. I like fun jewelry, too.

If you were a Disney character, who would you be and why?
I always loved Cinderella! The Prince takes her home and marries her no matter what she was like, right?

What was the first concert you ever attended?
I went to lots and lots of concerts. Not sure if Linda Ronstadt or Jefferson Starship was the first.

What was the first car you owned?
I did not own a car until my husband and I were married. So, the first car we owned was a brown Duster with yellow shag carpet that we bought from his parents. The carpet was put in so that the big speakers sounded better. We drove to Chicago for our honeymoon in that car with an 8 track that we bought as a wedding gift for each other.

What is your favorite accessory?
I’m an earring girl.

George Clooney or Brad Pitt?
Is Pierce Brosnan an option?

For additional information, contact Cindy Brooks at Cynthia.Brooks@bjc.org.

NEW KNOWLEDGE

New technology revolutionizes detection of respiratory viruses

In November 2012, the St Louis Children’s Hospital (SLCH) Virology Laboratory entered a new era of diagnostic testing for respiratory pathogens. Every day patients present to the Emergency Department (ED), the clinic or their physician’s office with symptoms of a respiratory tract infection. Most of the possible culprits of the infection cause very similar symptoms. Until recently, determining the cause of the infection was neither a simple task, nor a speedy one.

Thanks to a new respiratory virus test pouch, all that has changed. The instrument tests for 20 respiratory viruses and bacteria in about an hour.

The Virology Lab has four FilmArray instruments, each capable of running one test at a time, for a throughput of four tests per hour. The test is offered 24/7, with specimens being loaded into the instruments as they arrive in the lab. The turnaround time is currently averaging 79 minutes for SLCH specimens and 137 minutes for specimens referred from other hospitals. The lab’s goal is to deliver results within two hours for SLCH specimens and within eight hours for all other specimens.
Vicki Crespi, MT(ASCP), Virology Lab, prepares and loads a patient sample in the respiratory panel test pouch.

The lab performs virology testing for all of BJC, as well as several other area hospitals. Despite the large numbers of specimens, staff are pleased with rapid turn-around-times and hope quick results are having a positive influence on patient care.

The Respiratory Pathogen Multiplex PCR test uses Polymerase Chain Reaction (PCR) methodology, which allows scientists to interrogate the specimen for the presence or absence of the nucleic acids (DNA or RNA) of specific viruses/bacteria. Highly complex molecular testing techniques that are normally carried out on multiple lab instruments by highly trained technologists now take place inside a shoebox-sized instrument and test pouch the size of a hand. For most other PCR testing, specimens are batched for the most efficient and cost effective specimen extraction/nucleic acid purification and PCR testing. The test pouch is changing all of that by automating the entire process, such that it is “sample in – answer out.”

Specimens collected using a swab and Universal Transport Medium (UTM) are mixed vigorously to elute respiratory secretions off the swab and into the transport media. Mucoid specimens, such as tracheal aspirates, require a 15 minute pre-treatment to liquefy the specimen. Once in a liquid state, a portion of the specimen is added to the sample buffer provided in the test kit and mixed well. A syringe, with cannula attached, is filled with the specimen/buffer, while another is filled with molecular-grade water. These are inserted into injection ports on the test pouch, which is vacuum sealed and draws in the correct amount of specimen, as well as rehydrates the lyophilized reagents. In just over an hour, testing is complete and the technologist prints and enters the results in the lab information system.

If a pathogen’s nucleic acid is identified, the report issued will list all of the viruses and/or bacteria that were found. If no nucleic acids were discovered, the report states “no respiratory pathogen nucleic acids detected – negative.” A list of all pathogens capable of being found by the assay is listed in the result’s interpretive comments section.

This new process has been well received by both the technologists in the Virology Lab and clinical care providers. Since implementation of the respiratory multiplex PCR, 47 percent of specimens tested have been positive for one or more respiratory pathogens compared to only 19 percent of specimens submitted for direct fluorescent antibody (DFA) stain and culture since July 2010. While no test is 100 percent accurate, and clinical judgment must be used in conjunction with the results, the respiratory panel has greatly improved the detection of respiratory pathogens.

For additional information, contact Stephanie Bledsoe at slb5668@bjc.org.

List of Detectable Pathogens
Respiratory Pathogen Multiplex PCR detects 20 respiratory pathogens with minimal hands-on prep. Results are available in just over an hour.

- Bordetella pertussis
- Chlamydophila pneumoniae
- Mycoplasma pneumoniae
- Adenovirus
- Coronavirus HKU1
- Coronavirus NL63
- Coronavirus 229E
- Coronavirus OC43
- Human Metapneumovirus
- Human Rhinovirus/Enterovirus*
- Influenza A
- Influenza A/H1
- Influenza A/H3
- Influenza A/H1-2009
- Influenza B
- Parainfluenza Virus 1
- Parainfluenza Virus 2
- Parainfluenza Virus 3
- Parainfluenza Virus 4
- Respiratory Syncytial Virus

*cannot reliably differentiate

NEW KNOWLEDGE

New multiplex PCR revolutionizes detection
continued from page 11