Emergency Unit (EU) staff nurses Debra Henderson, RN, CPEN and Debra Parran, BSN, RN, CPEN, CPN, coordinate the handoff of patient information during shift change. The process is just one of many opportunities staff have identified to improve the department’s continuum of emergency care and enhance the patient experience for patients and families.

The EU is a critical access point to St. Louis Children’s Hospital, receiving approximately 58,000 visits annually, or 130-140 visits daily. Each child who comes to the EU is provided with a complete continuum of care, as professionals from various disciplines work together to fully assess and treat a child’s needs.

This spring issue of Pediatric Perspectives contains articles about the continuous improvement involved in ensuring safe, effective care.
As we approach springtime and graduation season, I thought I would share some ideas with you that I used in a graduation address for the Goldfarb School of Nursing last December. The theme was navigating a successful career, and I think the “rules of the road” are as applicable to those of us working at St. Louis Children’s Hospital as they were for the December 2011 nursing graduates.

**Rule #1 – Don’t be afraid to learn from your mistakes and don’t let your mistakes derail you.**
Mistakes are an opportunity for learning — even when they are big mistakes. The person who is least likely to make a major mistake is someone who has experienced the pain of making one in the past! While of course we should always try to avoid making mistakes, we are in fact human. As long as human beings are involved, there will be mistakes. The challenge for us is to create systems that catch our human mistakes before they reach our patients. That comes through learning from our mistakes. Be sure that you are open to that learning, and help others to learn as well by sharing your mistakes.

**Rule #2 – Remember that your attitude is your choice.**
Don’t be a martyr or a victim. Focusing on “poor me” and what “they” are doing to us is tempting when under stress. However, it is not fun to be around a victim. It drains energy and doesn’t create a positive healing environment for patients. Remember that our view of a situation is really just a perspective. No one can make us a victim unless we let them. People who are positive and pleasant to be around attract others. Choose your attitude each and every day and you will make the world around you a better place.

**Rule #3 – Care for yourself so that you can care for others.**
Leading, partnering and learning require a person to be confident, resilient and full of energy. This means that we have to take care of ourselves. We must care for ourselves to be good caregivers for others. Set boundaries between your professional and personal life, take time to recharge your batteries and live a healthy lifestyle. As they say in the safety message on airplanes: “Put on your own oxygen mask before attempting to help others traveling with you.”

**Rule #4 – Focus on what you can do to be a leader and a good partner.**
Rather than focusing on what you can’t do, or can’t control, find the opportunities to step up and contribute your ideas for improving St. Louis Children’s Hospital. You will make a difference for your co-workers, patients, and families — and you will be noticed! At the same time, know when to be a partner and follower when the situation demands it. Teamwork requires listening to others and blending our contributions into the whole of the team. Being a good partner also means looking out for each other. It is one of the most important things we can do to make health care safer for our patients.

**Rule #5 – Love what you do!**
There is probably nothing more important than this rule as a key to a successful career. If you love what you do, you will be successful. Passion for meaningful work gives us the energy to work through problems and persevere in the face of adversity. I guarantee you there is no career and no life that does not contain some tough times. But if you truly believe that your work makes a difference and enjoy doing it, you will have the stamina needed to reach a positive outcome.

Now go out there and have fun!

Peggy Gordin, MS, RN, NEA-BC, FAAN, is SLCH’s Vice President of Patient Care Services. She can be reached at pgordin@bjc.org.

“I did my peds rotation here and fell in love with the place,” said Tina LaPlant, RN, assistant nurse manager, Same Day Surgery (SDS). She worked in the Emergency Unit for two years, then came to SDS as a staff nurse. As part of a trial, LaPlant became the first SDS charge nurse in 1990. She continued in that role for six years until she became assistant manager.
Pediatric Perspectives

Inpatient falls remain a challenging safety and quality issue in acute care hospitals. Falls are considered preventable and classified as an adverse event. For these reasons, injury resulting from a fall is deemed a “never event.” In 2005, The Joint Commission introduced a new National Patient Safety Goal to reduce the risk of patient harm resulting from falls. The following year, hospital organizations were required to establish fall reduction programs and evaluate program effectiveness.

Compared to research on adult inpatient falls, little research and evidence-based interventions exist on pediatric inpatient falls. As a result, the Child Health Corporation of America (CHCA), a cooperative of 43 pediatric hospitals, commissioned a nursing task force to determine the:

- Current state of the science of pediatric falls
- Prevalence and characteristics of pediatric falls and fall-related injuries
- Sensitivity of pediatric fall risk tools

The current state of the science of pediatric falls was summarized by the task force and published in 2009 through an analysis of existing literature. The second priority for the task force was addressed through research study design.

Study design

A multi-site, prospective, descriptive design was used to examine inpatient pediatric falls in 26 free-standing CHCA-member hospitals. The non-random sample of patients included all inpatients up to 18 years of age who fell in each participating member organization during a consecutive six month period from 2008 to 2009. A fall event was defined by the National Database for Nursing Quality Indicators (NDNQI) as an “…unplanned descent to the floor, with or without assistance.”

Methods

A 70-item data collection tool was developed by a subcommittee of the CHCA Nursing Falls Study Task Force. Subcommittee members included 20 experienced researchers, pediatric nurses and clinical experts. Content validity of the tool was established, and each study site obtained approval from its Institutional Review Board (IRB) prior to participation. When a fall was reported, the data collection tool was completed using a variety of methods to obtain the desired information: risk or quality reports, medical record review and staff interview. The data collection tool was broken down into three sections and captured patient

Study reveals new data for pediatric patient falls
characteristics, fall characteristics and risk-reduction strategies. Patient characteristics included age, gender, developmental status, race, primary diagnosis, physical characteristics and medical history. Fall characteristics included day of week, time of day, location, fall type, activity at time of fall, environmental conditions and patient outcomes. Risk reduction strategies included risk status and whether fall prevention interventions were incorporated into the plan of care and with handoff. Statistical analyses were performed and included demographic characteristics, fall and injury rates, stratification by patient age and presence or absence of injury.

**Results**

Seven hundred and eighty-two falls occurred with a resulting fall rate of 0.88 falls per 1,000 patient days. Two hundred and fifty falls (32 percent) resulted in an injury. All but two falls were classified as minor injuries and the two categorized as more serious resulted in no permanent loss of function. No patients suffered a serious injury or death.

**Fall characteristics**

Falls with injury occurred more frequently on day shift (65 percent), on median hospital day three, in the patient room (73 percent) and were witnessed (80 percent) by a parent or family member (69 percent).

**Fall types**

The most common type of fall occurred when the patient fell or rolled off an object; approximately one-half included a bed/stretcher or crib. All available side rails were elevated in only one-third of falls and only one-half of patients in cribs had a crib hood in place. Approximately 15 percent of patients reportedly slipped or tripped; one of eight of these occurred while toileting or bathing.

**Fall risk reduction strategies**

Most of the children had been screened for fall risk, but only 25 percent used a published tool with documented psychometrics. Of those screened, only half were identified to be at risk for a fall.

Alert mechanisms such as color-coded fall risk bracelets and bedside signage were used for 60 percent of the children. For most, risk status was documented in the medical record. Hand-off communication to convey fall risk was used in about half of the patients who fell. Interventions targeted fall prevention; however, these actions were only used for one-fourth of the children and were primarily limited to the use of non-skid socks.

**Injury-associated factors**

Injuries were more likely to occur outside the patient’s room in good environmental lighting with the parent present for children who were oriented, developmentally appropriate and without balance problems.

**Conclusions**

These findings suggest that falls occur less often for pediatric than adult inpatients and that the risks associated with pediatric falls differ from those in adults. Specifically, history of previous fall, level of consciousness, confusion/disorientation, impaired balance, sedation and environmental conditions have little impact on pediatric falls. Injury rates, however, are similar between children and adults, although the severity and the outcomes of injuries in children are much less severe.

**Implications for practice**

Though the prevalence of falls for pediatric patients is less than for adults, more must be done to identify those at risk and to prevent falls and fall-related injuries. First, risk reduction strategies should be used in all pediatric patients, not just those identified at risk. Clearly, parental presence is an inadequate fall risk reduction strategy. Additional research is needed regarding best practices for preventing pediatric falls, and a need exists to refine and validate risk-assessment tools for children.

For additional information, contact Heidi Fields at hwf0290@bjc.org.
Increasing number of drug shortages challenge health care providers

The number of drug shortages reported by the American Society of Health-System Pharmacists (ASHP) and Federal Drug Administration (FDA) has increased significantly. Many fundamental and essential drugs are in scarce supply (primarily older, sterile, injectable drugs) – including anti-neoplastic agents, anesthetics, life-sustaining medications, pain medications and nutrition components. A recent survey assessing the impact of drug shortages identified concerns among health care providers regarding not only medication safety but the considerable economic impact as well.

Drugs shortages are not without consequences. Increased risk for adverse effects and heightened potential for medication error can occur due to use of less familiar agents. Clinical treatment pathways may theoretically be altered if no therapeutic equivalent is available, if treatment courses are delayed or if procedures are cancelled due to drug shortages. Increased labor costs can occur with product substitution, redistribution of resources and time spent managing these drug shortages. Interdisciplinary relationships may be stressed due to increased frustration towards pharmacy and their inability to obtain certain medications. Lastly, increased time spent addressing drug shortages may affect current patient care practices, not only in the pharmacy but on the multidisciplinary care teams as well.

Unfortunately, there is minimal information available regarding the cause and duration of these drug shortages. Currently, pharmaceutical manufacturers are not required to provide any sort of advanced warning to the FDA or health care providers, making drug shortages unpredictable. This leaves health care providers and other manufacturers unprepared to manage shortages. Some institutions, fearing imminent shortages, may hoard available medications. This further depletes available supplies and alternatives. In other instances, alternative products may be difficult to obtain or, at worst, no alternative product exists or has also become unavailable.

**Drug shortages are a national public health emergency for which there is no single solution to prevent their occurrence.**
Causes of drug shortages are varied and complex:

- Bulk / raw materials unavailable to produce pharmaceuticals
- Manufacturer voluntarily recalls product due to potential contaminant
- Manufacturer decides to stop producing certain (older) drugs in favor of newer, more profitable products
- Inability of other manufacturers to increase production quickly for alternative products used to replace or substitute existing drug shortages
- Unexpected increased demand for drugs with new indication approval or change in therapeutic usage (i.e. guidelines update, disease outbreak)
- Manufacturer mergers (narrowed product line focus; production delays; product discontinuation)
- Change in product formulation
- Natural disasters (damaged facilities or increased demand to treat victims)
- FDA enforced action due to non-compliance with good manufacturing practices, delaying or temporarily discontinuing production

Drug shortages are a national public health emergency for which there is no single solution to prevent their occurrence. A Drug Shortage Summit held in November 2010 identified potential avenues to help prevent and address this problem through legislation, regulation and communication. Currently the FDA has no enforcement arm requiring companies to report probable shortages or disruptions in supply manufacturing before they occur. Pharmaceutical companies are being encouraged to anticipate and communicate potential shortages so that the medical community is not the last to know. Congress and the FDA are also working to provide expedited approval pathways for older drugs and incentives to encourage manufacturers to continue production of these “vulnerable” drug products.

The impact and sheer number of unavailable medications has provoked heightened awareness and alarm regarding availability of adequate drug supplies. Unfortunately, little progress has been made to date and the drug shortage outlook for 2012 is expected to only get worse. Health care providers should do their best to stay informed — be aware of medication shortages and processes put in place to address these shortages at your institution.

For additional information, contact Emily D’Anna at ekh6316@bjc.org.

Examples of Current Drug Shortages

Injectable multivitamin products (TPN) – on restricted use

Injectable trace elements (TPN) – on restricted use

Injectable prochlorperazine (Compazine) – unavailable, use alternative antiemetics

Injectable vitamin A – completely unavailable, no therapeutic alternative

Injectable morphine – pharmacy managing shortage through waste minimization
Working smarter, not harder: The Central Processing department work flow and efficiency project

In 2009, the Central Processing department (CPD), which provides supplies, instruments and sterilization for the operating rooms, was challenged with the task of opening and delivering service to an additional operating room. The CPD had to evaluate current operational efficiencies to determine whether additional staffing was needed to support the additional room.

The CPD staff and manager partnered with a performance excellence consultant to analyze the existing CPD process using Lean Six Sigma, a process improvement methodology. This discipline determines unnecessary steps or redundancies that can be eliminated. This process uncovered that the turnaround time for instruments did not meet the OR demands. In addition, there were often instruments that were underutilized, missing or broken. A variety of issues impeding the workflow in CPD were addressed in eight sub-projects to improve operational efficiency. Goals and measurements were determined for each sub-project.

Some of the interventions included:

- A reorganization of instruments by type and size
- Implementation of a standard work instruction for the CPD process in all areas of the department
- Improvement of the inventory management of the OR Pyxis supply machines
- Development of work standard cycle times in order to be able to track productivity

As a result of the implementation of these measures, it was determined that project goals could be attained without having to hire additional staff by streamlining operational processes. The following positive outcomes have been gained as a result of these efforts:

- September 2009 – Unit cost was 4.18 percent over budget: As of September 2011 unit cost was 13.54 percent under budget
- September 2009 – Labor hours were 9.54 percent over budget: As of September 2011 labor was 9.2 percent under budget

The project changed how people do their work and identified ways to work “smarter” rather than “harder.” The CPD staff has been empowered to anticipate the needs of the department. By learning the Lean principles, they can question and troubleshoot inefficient processes.

“The CPD is a crucial part to the workings of the OR,” said Angie Eschmann, RN, clinical operating room. “The OR department would not be able to function without the CPD. Without a doubt, infection rates would increase and patient surgeries would be delayed.”

For additional information, contact Randy Scott at rws1397@bjc.org.

Lean Six Sigma Terms

**Lean** is a process improvement tool that is used to reduce the waste and redundancies in a process.

**Six Sigma** is a tool that is used to reduce variations in process.

**Lean Six Sigma** is a combination of both.
During Process Improvement:
(top photo) Central Processing staff members Reed Price, Ernestine Warren-Dean and Quiana Sykes remove excess inventory from shelving.

After Process Improvement:
(center photo) An example of the department’s new visual cues for ordering supplies.
(left photo) Floors were marked to indicate the process flow of case carts through the decontamination area.

CPD Work Flow & Efficiency Implementation Schedule

• Improve workplace organization:
  5S – the foundation that supports improvement
  Sort – keep only what’s needed
  Set in order – straighten, put items in the best location & use visuals
  Shine – clean & fix
  Standardize – document how to maintain 5S
  Sustain – make 5S part of the culture

• Treatment of instruments returned from OR to CPD
• Develop standard work instructions
• Inventory mangement: OR supply pyxis
• Review/revise preference cards
• Inventory management: CPD warehouse
• Microsystems: standard work cycle times
• Case cart building: work in progress (WIP) reduction
Health care professionals working in large, urban academic medical institutions interact daily with other health care professionals working in various departments, often with little understanding of one another. Different departments have extremely diverse roles and responsibilities, yet rely on one another for information and functionality in order to optimally perform their role. Wouldn’t it be fantastic if staff from one department could “walk in the shoes” of those from another department, resulting in enhanced understanding of one another’s roles and responsibilities? This is exactly what the Education Council at St. Louis Children’s Hospital sought to accomplish with the creation of the Shadowing Program.

The Shadowing Program is an opportunity for front-line staff within Patient Care Services to foster collaborative relationships with other departments and share the overall goals of improving hospital processes, enhancing patient care and providing a superior patient experience (SPE).

More specific goals of the program include:

- Identifying methods of improving relationships between departments
- Discovering similarities and differences between work structures in different departments
- Describing the processes, policies, and work flow of different specialty areas
- Sharing new knowledge about how the unit/department visited contributes to SPE

Program participants describe enriched relationships and communication between their units. One of the shadowing duos, Sue Harper, MT (ASCP), an employee in Laboratory/Transfusion Services and Lauren Orf, BSN, RN, from the Pediatric Intensive Care Unit (PICU), described what they unveiled during their shadowing experience. Sue described her role as one “behind the scenes,” where she does not see patients in the clinical setting unless she passes by them in the hospital halls. She felt that it would be worthwhile to see what happens to patients before/after she prepares and sends blood products to the unit. Lauren described her role as caring for critically ill children at their worst; she depends upon laboratory staff to send needed results of lab tests or blood products quickly and accurately.

Each of the employees spent a day shadowing the other in their respective departments.

After their shadowing experiences, both employees said that the shadowing program was worthwhile in enhancing understanding and collaboration. They also said the program can improve overall workflow throughout the hospital. Development of communication between departments allowed the two to see areas where they could improve certain processes to prevent delays and resolve processes more quickly. Seeing the day-to-day operations of another department provided an understanding that can lead to better collaboration. Simply knowing a face from another department provided an appreciation for the work done in other departments.
communications between departments contributes to a superior patient experience.

Due to the success of the Shadowing Program pilot, the program is expected to expand beyond Patient Care Services to include Washington University School of Medicine, Support Services and Outpatient Clinics. The program will continue to be enhanced based upon participant feedback. Patients, families and staff all benefit from the program.

For additional information, contact Amy Westfall at acd6714@bjc.org.

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Shadowing Program Accomplishments

• Pilot project launched 2nd quarter 2011
• Shadowing program launched June 2011 in Patient Care Services
• 22 staff from 17 departments have participated in shadowing experiences
• Program has been well received by front line staff, educators and managers
• Program processes have evolved based on feedback from participants

How to apply for Shadowing Program

The application for the Shadowing Program can be found on the hospital’s intranet, located on the Shared Leadership website under Education Council:


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In the Hematology/Oncology Clinic, Sue Harper, MT, (ASCP), Laboratory/Transfusion Services (right), shadows Kim Wall, RN, clinical nurse coordinator, in caring for patient Alexis Burger.

Kimberly Waters, BSN, RN, a nurse and mentor with more than 25 years of experience at SLCH in various roles, passed away suddenly in late December. Waters started at SLCH in October 1984 as a staff nurse in the Operating Room (OR). During this time her specialty was orthopedic and spine surgeries. By 1987 she had moved to the educator role in the OR where she mentored many of the current staff.

She transferred to Missouri Baptist Medical Center for two years and returned to fulfill the role of information systems clinician for all of surgical services.

Her colleagues in the Operating Room remember their longtime friend and her compassion for her calling:

• “Kim was a genuinely nice, sweet person.”
• “She never took shortcuts or compromised patient care.”
• “Kim helped people with things that were not her responsibility.”
• “She was thorough and detail orientated in everything that she did.”
• “Kim was always willing to help others and always did so with a smile.”
• “Everyone in the OR will remember her kindness, and she will be truly missed by all.”

In Memory~Kim Waters
Pediatric caregivers use early warning system to anticipate deteriorating patients

Pediatric literature has shown that 8.5 percent to 14 percent of all in-hospital cardiopulmonary arrests in children occur outside the intensive care unit environment, and the mortality rate for these patients can be as high as 67 percent. Given the grave consequences of such codes, pediatric hospitals have been looking for an objective way to measure whether a patient is deteriorating at the bedside. While individual clinical skills, judgment and experience are important factors in assessing patients, having an objective tool is one more way the caregiver can validate that “gut feeling” that something is not right.

The pediatric early warning scoring system (PEWS) tool and scoring process was initially developed at the Royal Alexandra Children's Hospital and Sussex University Hospitals in the United Kingdom. Cincinnati Children’s Hospital validated a three domain assessment, which is composed of behavior, cardiovascular and respiratory status. The score was designed for nursing staff to identify a deteriorating patient at least one hour prior to a cardiopulmonary arrest. Numerical values, ranging from 0 to 9, are given for each element in the tool and paired against the normal vital signs that have been established for that institution. A higher score denotes a deteriorating clinical status. Interventions are specific according to the scores, which are obtained a minimum of every four hours. Since its inception, several children’s hospitals have adopted and/or researched the tool and validated its use.

At St. Louis Children’s Hospital, an interdisciplinary team consisting of nurses, physicians, and information technology experts adapted the tool for use in the electronic health record (EHR). The scoring of the criteria is fully automated. Every score charted generates a message for the nurse and promotes guidance to the appropriate algorithm actions. The score was added to the hospital’s electronic unit census screen, and a large monitor was installed in the nursing station to display a modified version of the census screen with the PEWS scores. A six-month pilot was conducted on the Oncology and Bone Marrow Transplant Unit to evaluate the algorithm’s suggested actions and overall process. Since the start of the pilot, no cardiopulmonary arrests have occurred on the unit. The frequency of activating the rapid response team has significantly increased during the pilot timeframe, illustrating the positive outcomes when critical care expertise and skill are brought to a patient’s bedside in a timely manner. Rollout of the effort continues to include all inpatient units.

For additional information, contact Becky Doerhoff at RJDorhoff@bjc.org.