Patient Safety
Progress Report

November 2007

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“The names of the patients whose lives we save can never be known. Our contribution will be what did not happen to them. And, though they are unknown, we will know that mothers and fathers are at graduations and weddings they would have missed, and that grandchildren will know grandparents they might never have known, and holidays will be taken, and work completed, and books read, and symphonies heard, and gardens tended that, without our work, would never have been.”

Donald M. Berwick, MD, MPP
President and CEO
Institute for Healthcare Improvement
**Fast Facts**

**Did you know?**

- In the first year of Patient Safety Leadership Walkarounds (PSLWA) that 984 PSLWA were conducted. During those PSLWA 1351 patient safety issues were identified, of which 64-80% of them have been resolved or have active improvement work in progress.

- 93% of staff surveyed reported that PSLWA had increased their awareness of patient safety and that they felt comfortable openly and honestly discussing patient safety issues.

- Since the establishment of a new and simpler occurrence reporting process for adverse events and near misses that reporting has increased 129% over the last two quarters from the same time period last year.

- The RACE team at the General site has made significant impact on decreasing the numbers of patients experiencing code blue from 15/month to 5/month and June 2007 there were 75 new consults made to the team, up to 80% of the time where a consult occurred, the patient was able to remain on the ward.

- Since implementation of the PACE team at the Children’s Hospital, only 2 code blue activations have occurred in total since Jan 29th, compared to 37 in a 2-year retrospective cohort.

- 68% of congestive heart failure patients now have an acute length of stay that is less than or equal to the expected length of stay since the implementation of a chronic disease management model for this patient group.

- HHS has almost 400 Patient Safety Champions who identify, coordinate and improve patient safety at the local level.

- 100% of clinical units conduct transfer of accountability during nursing shift handover and 95 errors that could have led to patient harm have been caught in this process.

- As a result of the Prevention of Surgical Site Infections Initiative, antibiotic timing improved from 13.8% of patients receiving antibiotics in the first 60 minutes to 92.6%. The incidence of normothermia improved to 2/100 patients arriving hypothermic to the PACU from 30/100 patients. In addition, wound infection rates fell from 14.3% for superficial wound infections to 6.8%, and for organ space infections from 7.6% to 6/8%.

- HHS’s Fourth Annual Patient Safety Symposium was attended by almost 500 leaders in patient safety and showcased the patient safety work of 33 presenters and 20 poster presentations.

- All acute sites now have a unit dose system for medications which has been shown to decrease errors related to medication and that Accudose machines (a technology to prevent medication error) has been introduced in the critical care areas.

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The delivery of safe exemplary patient care has always been a priority and focus at Hamilton Health Sciences (HHS). However, recent research has cast doubt on how safe our patients really are, despite our best intentions. In 1999, the release of the Institute for Medicine’s Report “To Err is Human”, suggested that 44,000-98,000 people were dying in U.S. hospitals as a result of medical error (Kohn, Corrigan, & Donaldson, 2000). In 2004, Baker et al. released results of the Canadian Adverse Events study, which suggested that in 2000, there were as many as 23,750 Canadians who died as a result of preventable adverse events in acute care hospitals. During that same year, this review of hospital records suggest that one in thirteen patients (7.5%) admitted to Canadian hospitals would suffer an adverse event. An adverse event is defined as “an unintended injury or complication that results in disability at the time of discharge, death or prolonged hospital stay and that is caused by healthcare management rather than by the patient’s underlying disease process” (Baker et al., 2004, p. 1679). In teaching hospitals, such as HHS, this number is closer to one in eleven patients. These figures are alarming, but not unexpected in light of similar studies previously released in other countries. These compelling nature of these numbers, along with our vision for exemplary care led to the birth of a formal patient safety program at HHS.

The Canadian Council of Health Services Accreditation state that quality consists of eight dimensions: population focus, accessibility, safety, work life, client-centred services, continuity of services, effectiveness and efficiency. These dimensions provide a balanced approach to quality and are inextricably integrated in the care provided to patients. The purpose of this report is to focus on the dimension of safety, which is one part of the strategies related to quality improvement at HHS. In September 2004, the HHS Patient Safety Program was created, and significant work has occurred in three years. A HHS Patient Safety Model: Cornerstones, Connections and Caring (see figure 1), was developed and two full time patient safety specialists were hired to implement the vision of safer patient care. This model is based on the need for a balanced approach for the creation of an effective patient safety program. Four “cornerstones” need to be addressed to achieve this balance: Culture of Patient Safety and Accountability, Measurement and Improvement, Education and Professional Development, and Information and Communication. The integration of the cornerstones and supporting connections ensure a strong safety program. Many initiatives have been implemented since 2004, some of which include Patient Safety Leadership Walkarounds, a Transfer of Accountability process, implementation of technologies to prevent medication errors, rapid response teams to bring critical care to the bedside of a patient who needs immediate care, extensive education initiatives, implementation of Safer HealthCare Now! initiatives and a large network of patient safety champions who are committed to improving patient safety.
In 2005, at the annual Patient Safety Symposium, HHS set a goal of “zero preventable deaths within five years”. This is a strong challenging goal that is critically important to moving patient safety forward at HHS. In order to reach this goal, within an ever-changing and highly complex healthcare system, a comprehensive patient safety plan was created. The plan outlines a strategy to achieve zero preventable deaths in five years and was developed as the result of an in-depth scan of internal and external drivers. There has been a deluge of literature related to patient safety processes, standards, goals and practices. As well multiple organizations, such as the Canadian Council on Health Services Accreditation, the Canadian Patient Safety Institute, Safer Healthcare Now!, the Institute for Healthcare Improvement, the Institute for Safe Medication Practices, the National Patient Safety Foundation and the Joint Commission of Accredited Health Organizations, have suggested embracing specific practices to successfully enhance patient safety. The plan is designed to address the four perspectives of the Kaplan and Norton’s (1996) Balanced Scorecard (Customer, Finances, Internal Processes and Learning and Innovation) and the four cornerstones of the Patient Safety Model. The plan is extensive and outlines the strategies and initiatives, as well as components to successfully implement this organizational change (See Appendix 1).

The work to date has been the result of strong leadership commitment to patient safety and the contributions and commitment from all levels of staff towards this goal. It is important to note that the strategies that have been implemented are large initiatives which require adoption by large numbers and levels of staff in a complex system and are therefore resource intensive and require a commitment for continuous effort towards sustainability and continuous improvement. This report is presented in accordance with the dimensions of the Patient Safety Model. This is intended to be a high level overview of the progress to date related to the strategies to address Patient Safety. This report only addresses patient safety improvements from an organizational level and does not reflect the huge amount of patient safety work that occurs in many areas and units on a daily basis. More detailed information related to specific initiatives is attached in the appendix, but may be more pertinent at the operating level.
Making Improvements – Using a Quality Improvement Model

The Institute for Healthcare Improvement (IHI) from Boston, MA endorses the Model for Improvement developed by Associates in Process Improvement (Langley GL, Nolan KM, Nolan TW, Norman CL, Provost LP). It is a simple yet powerful tool for accelerating improvement. This model is an adjunct to the change methodology used at HHS, and is meant to accelerate improvement efforts within the change model methodology. The model for improvement has two parts:

- Three fundamental questions, which can be addressed in any order.
- The Plan-Do-Study-Act (PDSA) cycle (Deming WE. The New Economics for Government, Industry, Education) to test and implement changes in real work settings. The PDSA cycle guides the test of a change to determine if the change is an improvement.

**Model for Improvement**

**Background and Case for Change**

**How Do We Know We Have a Problem?**

1. **Set Aims**
2. **Select Measures**
3. **Select Changes**
   - Test (Is the change an improvement?)
   - Implement
   - Spread
   - Sustain

**Safe Care For Patients**
- No harm
- No needless deaths
- No needless pain
- No helplessness

**Four-Year Plan for Patient Safety**
The Background:

The average healthcare organization performs many highly complex and potentially risky procedures under very tight time constraints every day. Within this type of environment, errors are not only possible, but also likely. “The patient safety movement is striving to develop a culture of safety whereby every individual, whether on the receiving or delivery end of care, is preoccupied with safety, is armed with the skills to evaluate his or her environment for potential harm, and is supported and rewarded for making appropriate choices” (Frankel et al. 2003, p.16). Achievement of this goal requires a vision of a High Reliability Organization (HRO). “These organizations acknowledge the complexity of their systems, create an environment in which individuals can communicate openly about concerns, and design systems that make it difficult for failures to occur. Effective communication, teamwork and shared learning are inherent properties of these organizations” (Leonard, Frankel & Simmonds, 2004, p. 16).

While all of the cornerstones contribute to the enhancement of patient safety culture, some very specific strategies were implemented that specifically focus on this cornerstone of patient safety. The development of a “just non punitive culture” is discussed within the discussion of reporting systems.

The Strategies:

Identifying Patient Safety as a Strategic Priority

To truly develop a culture of patient safety requires strong leadership commitment. Senior leaders must carry the banner of patient safety and visibly endorse and encourage involvement in safety projects as well as participate directly in initiatives. Staff will not focus on safety if its leadership does not (Frankel, 2004). Patient Safety is articulated as a key element of the corporate strategic priority of Quality Initiatives reflecting the integration of patient safety, appropriateness of care and application of best practices into the overall quality agenda. As well, there is visible leadership by Murray Martin, our CEO and President for Patient Safety in chairing the Patient Safety Steering Team, which also is supported by multiple senior leaders.

Patient Safety Culture Survey

In 2004, prior to the implementation of strategies to address patient safety, a patient safety culture survey was conducted. It is important to assess the current state of the environment and determine a baseline to see what changes are necessary. The general notion is that one person’s attitude is an opinion but the attitudes of everyone taken together provide an assessment of the climate in the organization (Sexton & Thomas, 2004). In October-December of 2004, 2589 staff were surveyed during patient safety workshops (31% of all HHS employees, 35% of front line employees). A 100-point index was used to reflect the mean of all statements in the survey. The higher the index indicated a better climate for patient safety. The measure of overall patient safety climate on a 100-point index was 57.79 (CI 56.62-58.97). Factor analysis identified four themes in the results and their corresponding 100-point scale result (see table 1). This provided us with indications of which perceptions may require attention. This year in 2007, as part of our Accreditation process all staff have been asked to take part in
another patient safety culture survey, which will allow us to further understand our progress and areas to consider for further development. The rapid pace of change and understanding in the field of patient safety has meant that measurement tools are continuously changing. While there will not be a direct comparison possible, it will still provide us with an indication of our strengths and opportunities related to the further enhancement of patient safety culture.

Table 1- Factor Analysis of Patient Safety Culture Survey

<table>
<thead>
<tr>
<th>THEME</th>
<th>RESULT ON 100 POINT INDEX</th>
<th>CONFIDENCE INTERVAL (95%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational leadership for patient safety</td>
<td>69.4</td>
<td>67.2-68</td>
</tr>
<tr>
<td>Reporting and improvement environment</td>
<td>70.4</td>
<td>69.2-70.8</td>
</tr>
<tr>
<td>Beliefs about non-punitive approach</td>
<td>47.4</td>
<td>45.8-49</td>
</tr>
<tr>
<td>Local accountability for patient safety</td>
<td>72.4</td>
<td>71.4-73.4</td>
</tr>
</tbody>
</table>

Patient Safety Leadership Walkarounds (Appendix 2)

Aim / Expected Outcome:
- To provide a supporting framework for collaborative efforts to improve identified patient safety issues
- To improve or encourage open lines of communication and dialogues about Patient Safety
- To further enhance Patient Safety culture
- To demonstrate organizational commitment to Patient Safety
- To improve teamwork through connecting leaders and front line staff in discussions and in collaboration to address patient safety issues

Patient Safety Leadership Walkarounds (PSLWA) have been identified in the literature as a powerful tool to develop patient safety culture by connecting senior leaders with front line staff in open dialogues about patient safety (Leonard, Frankel & Simmonds, 2004). Additionally this strategy promotes teamwork, opens communication channels and offers an opportunity for teams to engage in working together to improve patient safety. PSLWA have been in place at HHS since March of 2006. In the first year of implementation, 984 walkarounds were scheduled. During these PSLWA, 1351 patient safety issues were identified of which 64-80% of those issues were resolved or have active improvement work in progress (See Figure 2). These issues were categorized by Vincent’s (2006) themes (see Figure 3).
Many patient safety improvements have occurred as a result of the PSLWA (See table 2 for examples).

<table>
<thead>
<tr>
<th>Patient Safety Issue Identified</th>
<th>Patient Safety Solution Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shortcuts can and will result in a risk to patients</td>
<td>Implementation of a quality assurance education and auditing plan to ensure Standard Operating Procedures were met in clinical support services</td>
</tr>
<tr>
<td>Insufficient transfer of information when patients arrive to ambulance and patient care area at Cancer Clinic</td>
<td>Transfer of Accountability process implemented for patients arriving in ambulance care</td>
</tr>
<tr>
<td>Need for a forum to openly discuss error and learn from it</td>
<td>Regular Occurrence Reporting Rounds-presentation of case study by staff involved in error</td>
</tr>
<tr>
<td>Turnaround time for equipment repair</td>
<td>Monthly Engineering shop meetings at every site to identify barriers to repair and generation of solutions</td>
</tr>
<tr>
<td>Need to improve reporting of adverse events and near misses</td>
<td>Implementation of the Eagle Eye project to reward and recognize reporting by staff</td>
</tr>
<tr>
<td>Pharmacist shortage and medication errors</td>
<td>Fourth medication check by pharmacy technician or RN/RPN Patient Safety Champion</td>
</tr>
</tbody>
</table>

Table 2 - Examples of Patient Safety Issues Identified via PSLWA and Improvements Made at Local Level
Continuous improvement of this process is occurring following a formal evaluation of the process in 2007. The evaluation as well indicated some great successes in the first year: 100% of programs/services are now conducting PSLWA; 93% of respondents agreed that PSLWA had enhanced their awareness of Patient Safety; 93% of respondents felt comfortable openly and honestly discussing patient safety issues; 70% of respondents felt that they were always heard at PSLWA; and 87-91% of leaders felt comfortable leading PSLWA. In addition to these quantifiable results, the qualitative responses to the evaluation were overwhelmingly positive.

In response to the process evaluation, continuous quality improvement has occurred related to the following areas and will continue to be evaluated:
- Scheduling
- Scripts
- Feedback Loops
- Reporting Processes and
- Resolving Issues

The HHS process for PSLWA has garnered considerable interest from other healthcare organizations and has been accepted for publication in the 2007 Healthcare Quarterly Patient Safety Papers, and was chosen by the editors to represent the journal in an early release handout at the OHA Health Achieve in November.

Measurement and Improvement

The Background:

This cornerstone addresses the implementation of best practices related to quality improvement and measurement of progress in those areas. Patient safety requires formal improvement work to address complex systems of care to ensure that appropriate and safe care is given to our patients. These initiatives are large-scale initiatives, many of which align with required organizational practices for Accreditation in May 2008.

The Strategies:

Occurrence Reporting (Appendix 3)

In 2005, a working group was struck to understand the existing occurrence reporting system and to improve that system to ensure that reporting of adverse events and near misses provided more robust data that allowed a fuller understanding of patient safety event trends, and to provide focus for future system improvements. For an adverse event reporting system to succeed there must be incentives to complete reports that outweigh perceived barriers. There were multiple barriers found in the existing system to reporting occurrences. There were 15-20 forms in the system to report “errors”, “occurrences”, “incidents” or “quality assurance concerns” and no way to report near misses. Many of these forms went to homegrown databases for decentralized use. There was no centralized collection of these occurrences. Staff expressed frustration with the length of the forms and the ability to determine which form to use. As well, documented follow up of events was not always clear. Data in the main risk management system was very difficult to sort into usable reports due to the high number of free text fields. Lack of feedback to staff led to apathy related to reporting.
With the collaboration of multiple disciplines and service areas, one simple one-page form was developed for staff to report all types of incidences. As well an internally developed database was developed to allow for more robust understanding of the contributing factors leading to events or near misses and to measure outcomes for patients and record follow up to prevent recurrence of events. This new process was launched in December 2006, and we have recently just completed analysis of the first six months. Data from two quarters reveals a 129% increase in reporting of occurrences from the same time period last year. This is indicative of improved ease of use of the form, a centralized database to collect and analyze information, as well a reflection of a growing positive patient safety culture. Current trends follow in Figure 4 HHS Occurrence Reporting Trends (Dec- June 2007).

![Figure 4 – Dec – June 2007 Occurrence Report Trends](chart)

This graph is one exemplar of data that can be used to inform the organization of areas of focus for improvement. There must also be alignment with reported trends and the corresponding action from patient safety initiatives. When reviewing the top three categories of reported adverse events and near misses in the first six months, there is clear alignment apparent related to the trends reported. In addition to the percentages and frequency, which tell part of the story, the odds ratio of the error leading to harm must also be considered. Some examples include:

- **Medication errors**: There is a multiyear plan to address medication safety that has been in place since 2006 which includes the integration of technology to improve medication safety systems (unit dosing, accudose dispensing machines)
  - The chart above shows that medication occurrences are most frequently reported. Two of the top three types of medication occurrences reported were improper dose and wrong dose.

- **Falls**: this year’s patient safety initiative is being launched in early 2008 and will focus on the implementation of RNAO best practice guidelines for the prevention of falls
  - Falls are the second most frequently reported occurrence and can be a high risk of harm for patients. When we examine the odds ratio related to this
type of adverse event, the odds of moderate to severe harm occurring is 2.08 times that of a non-fall occurrence.

- Treatment and Diagnostics – this area of error includes things such as incorrect tests or procedures, administration of tests/procedures to wrong patient, incorrect results reported, incorrect orders for tests. The data from Jan to June’07 demonstrates the largest number of Treatment/Operative/Diagnostic Occurrences reported were incorrect or incomplete orders. This year a new patient safety initiative to address verification practices has been started. This group will develop processes to ensure critical tests are reported safely, that we verify patient identity and tests ordered prior to administering them and the consistent use of two identifiers to ensure correct identification of patients.

Education of all staff related to occurrence reporting also included a focused discussion of the definition and expectations of a non-punitive accountable culture. Future plans are to address the challenges of a paper-based system grown system, with the purchase of standardized LHIN software to track occurrences, and to continue to improve the ability to track trends, and provide timely feedback to staff.

Occurrence reporting also includes disclosure of harm to patients and families as per HHS policy. The next steps are to investigate the use of commercial software that would provide a much more detailed understanding of the system issues which may lead to error and harm.

**Safer Healthcare Now! Initiatives**

Safer Healthcare Now! is a national campaign supporting Canadian Healthcare organizations to improve patient safety by using quality improvement methods to integrate evidence and best practice in patient care delivery. The campaign is patterned after the IHI’s 100,000 Lives Campaign and is supported through the Canadian Patient Safety Institute. It consists of six strategies to improve patient safety: Preventing Central Line, Surgical Site Infections, Preventing Ventilator Associated Pneumonia, Medication Reconciliation, Rapid Response Teams and Improved Care for the Acute Myocardial Infarction Patient.

**A) Medication Reconciliation**

Medication Reconciliation (Appendix 4) is a powerful strategy to reduce adverse drug events at the time of admission and as patients move from one level of care to another. Multiple studies have demonstrated that when medication reconciliation occurs on admission a significant number of discrepancies can be intercepted before a patient is harmed. At present, HHS is currently implementing Medication Reconciliation at the time of admission at the McMaster site in adult medicine, pediatrics and emergency (See appendix attachment for details). Additionally, a pilot is being planned for implementation during the transfer process in pediatrics in February/’08. Medication Reconciliation is a formal process of obtaining an accurate list of each patient’s home medications, verifying that list with the patient within 24 hours of admission and using that list on admission, transfer and/or discharge, identifying discrepancies to the attention of the prescriber and making changes where appropriate. Any resulting changes are documented. This has proven to be a very complex process given the resource challenges related to pharmacist personnel, understanding by the inter-professional team of the scope of practice of colleagues and the ingrained practice
patterns in place. This initiative will continue in pilot this year to develop a sustainable process that will then be considered for implementation to other sites of HHS.

Summary of Medication Reconciliation Data

The goal of medication reconciliation is to monitor organizational success and to eliminate medication discrepancies. There are three types of discrepancies:

1. **Intentional Discrepancy (Type 1)**
   An intentional discrepancy is one in which the physician/APN has made an intentional choice to add, change or discontinue a medication and their choice is clearly documented in the patient’s health record. This is considered to be “best practice” in medication reconciliation.

2. **Undocumented Intentional Discrepancy (Type 2)**
   An *undocumented intentional* discrepancy is one in which the physician/APN has made an intentional choice to add, change, or discontinue a medication but this choice is not clearly documented. These discrepancies are a failure to document are not medication errors and do not usually represent a serious threat to patient safety. They can however lead to confusion, require extra work and may lead to medication errors.

3. **Unintentional Discrepancy (Type 3)**
   An *unintentional* discrepancy is one in which the physician unintentionally changed, added or omitted a medication the patient was taking prior to admission. Unintentional discrepancies are medication errors that can lead to adverse drug events (ADEs).

**Type 0** refers to instances where there are NO medication discrepancies.

Type 0 and Type 1 are considered best practice. Therefore our efforts are concentrated on reducing the rate of Type 2 and Type 3 discrepancies, that is, to reduce the rate of undocumented intentional discrepancies and unintentional discrepancies.

<table>
<thead>
<tr>
<th>Month</th>
<th>Type 0</th>
<th>Type 1</th>
<th>Type 2</th>
<th>Type 3</th>
<th>Success Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apr 07</td>
<td>5</td>
<td>2.2</td>
<td>0.6</td>
<td>0.4</td>
<td>87.8%</td>
</tr>
<tr>
<td>May 07</td>
<td>5.5</td>
<td>3.4</td>
<td>0.7</td>
<td>1.3</td>
<td>81.6%</td>
</tr>
<tr>
<td>Jun 07</td>
<td>3.75</td>
<td>2.2</td>
<td>1.35</td>
<td>0.83</td>
<td>73.9%</td>
</tr>
<tr>
<td>Jul 07</td>
<td>5.6</td>
<td>2.5</td>
<td>0.9</td>
<td>0.83</td>
<td>82.4%</td>
</tr>
<tr>
<td>Aug 07</td>
<td>5.3</td>
<td>2.2</td>
<td>1.0</td>
<td>1.3</td>
<td>76.5%</td>
</tr>
<tr>
<td>Sep 07</td>
<td>7.43</td>
<td>4</td>
<td>0.86</td>
<td>1.29</td>
<td>84.2%</td>
</tr>
<tr>
<td>Oct 07</td>
<td>4.5</td>
<td>3</td>
<td>1.25</td>
<td>1.0</td>
<td>77.1%</td>
</tr>
</tbody>
</table>
B) Rapid Response Teams

Rapid Response Teams (RRT) (Appendix 5) are teams of clinicians who bring critical care expertise to the patient’s bedside. These teams can decrease non-ICU cardiac arrests, reduce post-operative emergency ICU transfers and deaths and reduce arrest prior to ICU transfer. As a result of MOHLTC funding, there is now an adult RRT known as the RACE (Rapid Assessment of Critical Events) team at the Hamilton General site. Since the inception of this team, the number of code blue arrests called has declined from an average of 15 per month to an average of 5 per month. The most significant impact has been to the number of patients experiencing respiratory arrest. At the McMaster Children’s hospital, the MOHLTC has also funded a demonstration project for a pediatric RRT, known as the PACE (Pediatric Assessment of Critical Events) team (Appendix 6). Since implementation of this team, there has been a significant reduction in code blue activations to 2 in total since January 29th, compared to 37 in a 2-year retrospective cohort.
C) Preventing Surgical Site Infections

A team addressing the prevention of Surgical Site Infections (SSI) (Appendix 7) was struck at the McMaster site. SSI has been shown to increase mortality, readmission rates, length of stay and cost for patients who incur them (Kirkland, 1999; Perencevich et al., 2003, cited in Safer Healthcare Now!) Two strategies used to reduce SSIs are delivering the first intravenous antibiotic within 60 minutes of surgery and ensuring normothermia prior to surgery. When comparing the first phase of the initiative to the second phase, antibiotic timing improved from 13.8% of patients receiving antibiotics in the first 60 minutes to 92.6% . Improvements to care to ensure normothermia, led to a decrease in the number of patients arriving into the PACU hypothermic from 30/100 patients to 2/100. In addition, wound infection rates fell from 14.3% for superficial wound infections to 6.8%, and for organ space infections from 7.6% to 6/8%. The work of this group began in February 2005 and is now planned for spread between sites.

D) Ventilator Associated Pneumonia, Central Line Infections and Surgical Site Infections.

The strategies related to preventing ventilator associated pneumonia, surgical site infections and central line infections will be addressed in the coming year, and active participation in the Safer Healthcare Now! campaign in conjunction with these three initiatives will be requirements for future wait time funding.

Medication Safety Initiatives  (Appendix 8)

A) Improving Medication Delivery Errors through Technology

Multiple strategies to ensure medication safety are ongoing. Design of standardized processes are recommended to prevent errors and harm. As part of a five year plan, there has been implementation of two packaging machines in pharmacy and provision of 24 hour unit dose service delivery. Evidence related to these initiatives suggests decrease in medication errors, decrease in medication related activities for nurses, improved drug monitoring, reduced drug inventories, improved drug use control, and improved job satisfaction for health care professionals. Automated dispensing units provides a system that makes it very difficult to make an error in selecting medications. This has initially been implemented in critical care areas with plans to later implement in all clinical areas. Future plans for this initiative will build on these foundational technologies and include computerized medication records, bar-coding and physician order entry.

B) Decreasing medication errors for high risk medications

In 2006, the Institute for Safe Medication Practices and the Ontario Hospital Association released priority recommendations for safe narcotic use. This includes strategies related to narcotic storage and standardization, independent double checks for Patient Controlled Analgesia and epidurals and safety strategies related to patient controlled analgesia. This work is ongoing and much of it has been implemented to date. In addition, 100% of units have had high concentrations of electrolytes (ie. Potassium) removed as this represents an extremely high risk drug.
**Allergies and Alerts (Appendix 9)**

A new process has been developed and implemented to provide a more consistent standardized approach to allergy alerts. This project underwent course corrections in response to feedback and is now moving to a regular auditing process to ensure compliance. Multiple system issues have been addressed to improve compliance including: information technology changes, revision of the process in outpatient areas, revision of original forms, removal of alerts from armbands (which is consistent with practice in most hospitals).

![Graph showing patient compliance](image1)

**Death and Adverse Event Review**

Health care organizations, such as Hamilton Health Sciences (HHS), are obligated to investigate and understand the extent to which, and reasons why adverse events and the event-associated deaths occur, as well as engage interventions to improve the safety of the care provided to our patients.

As of September 2007, a revised and enhanced death review process has been developed and implemented where two Patient Safety Specialist Reviewers review all deaths at HHS (excluding pediatrics) to determine potential adverse events related to death. These cases will be referred to the death review committee and trended data and recommendations will be presented to the Quality of Care committee for system
improvements related to patient safety. Future direction of this team will include the review of random charts (of patients who did not die) for adverse events.

This initiative is currently in the first month of implementation. Between October 1-26th, 102 reviews have been completed. Within those reviews, the Patient Safety Specialist reviewers have found 28 adverse events. Adverse events that may have potentially led to the death are referred for second level review to the departmental death review chairs or designated physicians. To date nine patients have been referred for second level review, of which two were identified to have potentially contributed to the death and seven decisions are pending second level review decision.

**Failure Modes and Effects Analysis**

This is a proactive tool used to evaluate a process to identify where and how it might fail and then eliminate or reduce the likelihood of adverse events. It assesses the relative risk of different failures and identifies the areas of the process most in need of change. This process is resource intensive so is used for high risk, high harm processes. To date, it has been used and taught for application to: the identification of risks associated with narcotic cupboard use, assessing risk related to a new patient controlled analgesia (PCA) process and cardiac output monitoring systems. The narcotic cupboard FMEA led to the revision of how narcotics are stored, the number of narcotics stored and processes to support sustainability. The PCA FMEA led to development of orders and policy that addressed areas of high risk identified in the process. Finally, the cardiac output FMEA led to the development of new processes and the use of new equipment to provide a safer practice with a focus on infection control issues. There is now a required organizational practice to conduct yearly proactive prevention analysis.

**Root Cause Analysis**

HHS has adopted the Canadian Patient Safety Institute Root Cause Analysis Framework for application to review of sentinel events. It encourages a collaborative approach to openly discussing adverse events with a focus of learning from adverse events to prevent future occurrences. Review of the events and the recommendations for system change are referred to the Quality of Care Committee to assign accountability for follow-up. As well, Dr. James Paul has received research funding to further examine the use of root cause analysis in the pain service patient population.

**Clinical Equipment and Environmental Safety Working Group** (Appendix 10)

This multidisciplinary group examines occurrences and near misses related to equipment and environmental issues. They follow up and share learning related to these issues. As well they report to external agencies any vendor related issues that are not addressed by the vendor. Specific detailed occurrences are listed in the appendix.
Some examples of occurrences addressed by this committee (See appendix for more detailed list):

<table>
<thead>
<tr>
<th>Process</th>
<th>Automatic Tourniquet</th>
<th>Device failed to inflate</th>
<th>Attached package of O-rings to all devices for quick replacement when needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process</td>
<td>Code Cart Defib</td>
<td>Battery not charging because not plugged in</td>
<td>Battery charging added to checklist</td>
</tr>
<tr>
<td>Design - Usability</td>
<td>Ventilator</td>
<td>Power could not be switched back on</td>
<td>Working with vendor to change rear mains switch cover</td>
</tr>
</tbody>
</table>

**RNAO Best Practice Initiatives- Fall Prevention and Decubitus Ulcer Prevention**

In 2006, HHS was designated a Best Practice Spotlight Organization. With this designation came MOHLTC funding to implement two best practice initiatives which include prevention of decubitus ulcers and falls. The fall prevention strategy will be launched in January 2008 (see appendix 11). Decubitus Ulcer Prevention was launched in 2006. Since that time there has been significant work done related to the structures to support this best practice. Audits have been conducted this month (October 2007) and the results will be available in early 2008 (See appendix 12).

**Best Practice Care for Congestive Heart Failure Patients (Appendix 13)**

This initiative focuses on application of best practice guidelines for congestive heart failure using a chronic disease management model. This project has shown multiple indicators of success (please see Appendix 13 for specific results).

- 68% of cases had an acute length of stay less than or equal to the estimated length of stay
- 58% of patients appropriate for cardiology preprinted orders had orders completed
- 54% of patients on the pathway had daily weights compared to 22% not on the pathway

**Information and Communication**

**Background:**

This cornerstone addresses communication, teamwork and the use of information technologies. Along with effective leadership and building reliable processes for care delivery, teamwork and communication are foundational elements to patient safety. The majority of adverse events involve communication failure. In fact, the overwhelming
majority of sentinel events involve communication failure- 70% (75% of these sentinel events leads to death (JCAHO, 2005). In another Australian study of 28 hospitals it was found that communication errors were the leading underlying cause of adverse events, twice as many deaths as was clinical inadequacy (Solet et al. 2005). When a sentinel event is occurring (ie. Wrong site surgery) often someone in the room knows there is a problem. Why is it so hard to speak up? Team functioning, existing hierarchy, psychological safety, cultural differences, gender differences, mental models professional training, differences in professional communication styles and past experience all play a role. Effective teamwork has been demonstrated to decrease mortality and morbidity, improve patient safety culture and decrease nurse turnover. Human interactions, human limitations and complexity of the healthcare delivery are such that reliance on individuals and an assumption of safety are not longer enough to assure safety. Teamwork and communication are foundational to reducing adverse events.

The Strategies:

Patient Safety Triads and Networks  (Appendix 11)

While we believe that patient safety is the responsibility of all staff at HHS, there needs to be support for this to occur. A critical task is to build accountability into the system, and part of that task is to encourage individual employees to share that responsibility (DiBella, 2001). HHS developed a framework to foster local accountability for patient safety. Accountability must exist at organizational and local levels to effect the needed changes in practice and culture. This framework is built on the concept of local patient safety champions. These champions, called Patient Safety Triad Members include managers, physicians, leaders and front line staff who have agreed to be the local “point people” to address patient safety issues. These triads come together in networks every two months for intensive education to develop local expertise in patient safety, communication of ongoing initiative work and to share adverse events and learnings as well as to share their solutions to patient safety issues.

At present there are almost 400 patient safety triad members at HHS from clinical and service areas. This number has grown steadily from less than 100 members since its inception in January 2005. An informal evaluation “pulse check” was conducted after the first year as small working group discussions at the network meetings. Overall the message was that the triad members felt valued, excited and committed to their work. They also valued their network meetings and felt that the multi-site, multidisciplinary approach had created a cohesive and collaborative approach to patient safety. Monthly evaluations of the meetings continue to be rated as good to excellent.

In November of 2006, another pulse check was conducted to assess the structure of the network in terms of strengths and areas for improvement to be addressed. Sixty surveys were received back from a possible total of 300 (20%). Of the respondents received, 75% were from clinical areas, and 25% were from service areas. 93% of triad members had initiated more than one patient safety project in the last year (36% had initiated more than three projects) and 80% had completed patient safety projects in the last year. As well 94% felt their immediate supervisor supported them in their triad role.

Transfer of Accountability  (Appendix 12)

A clinical strategy to improve communication is the Transfer of Accountability (TOA) initiative. TOA is the process of exchanging clinical information and handing over
responsibility for patient care to another health professional. This process also includes a patient safety checklist. The focus of this initiative has been transfers of care between nurses at shift change. Biweekly audits continue to monitor the success of this project. At present 100% of clinical units are using TOA processes and tools. A total of 1040 observational audits were submitted from February 2006–September 2007. The majority of the time during observational audits, TOA was occurring as intended:

- 96% of the time it occurred face to face
- 69% of the time staff were using a written tool (Tools are to be used when there is significant data to report)
- 92% of the time reporting on the required components
- 85% of the time TOA was documented appropriately and
- 68% of time time the bedside Patient Safety Checklist was completed (on remainder of the units, two nurses on same shift complete the checklist on the beginning of their shift, as per policy)

To date 95 errors and occurrences have been identified, involving armbands, allergies, monitor alarms and other risk issues. This will continue to focus on sustainability in this fiscal year, and will later address transitions between units or services, between physicians, between allied health members and at discharge. Preliminary work related to physician handover (Appendix 13) and understanding current practice has been completed.

<table>
<thead>
<tr>
<th>Occurrence/Error by Type</th>
<th>Number (not all occurrences/errors identified a type)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Armband</td>
<td>22</td>
</tr>
<tr>
<td>IV Infusion</td>
<td>14</td>
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<tr>
<td>Allergies</td>
<td>7</td>
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<tr>
<td>Monitor Alarms</td>
<td>1</td>
</tr>
<tr>
<td>Risk Issues</td>
<td>9</td>
</tr>
<tr>
<td>Other</td>
<td>26 + 16 not identified (42)</td>
</tr>
</tbody>
</table>

Verification Processes: Teamwork and Communication Best Practices

Verification of processes is related to communication of vital information between healthcare workers. Patient safety experts agree that verification processes for high-risk care/activities are extremely important for safety. These activities carry increased risk and potential for harm. This is a multi-phased, multi-year initiative related to teamwork and communication. The first phase of this initiative will specifically concentrate on verification processes related to reporting and communicating critical test results, independent checks for high-risk medications, use of two patient safety identifiers and surgical and procedural pauses prior to invasive procedures. Future years will build on this foundation and focus on broader communication and teamwork skills that include structured communication, crew resource management teamwork skills, and using simulation in the development of these skills.

Other Communication

Communication in a large facility is always a challenge. Although the triads and networks provide one form of communication and are expected to share their learning in their areas, there is also a quarterly patient safety newsletter that shares learnings and literature related to patient safety as well as updating staff on the progress of ongoing initiatives. As well it is important that HHS continues to share its work outside of HHS to
continue to build knowledge in this steadily growing field. The work at HHS has been shared in multiple journal publications, presentations (including national forums) and poster publications.

Education and Professional Development

Background:

The final cornerstone of the patient safety model is education and professional development. Ongoing education strategies are key in sustaining gains in patient safety culture. New learners, staff and physicians need to understand the basic concepts of human factors and the limitations of humans. Humans will continue to err, we need to build systems that make it harder to err. This cannot be accomplished without the ongoing education and development of staff that provide the tools and knowledge of how to prevent error.

Strategies:

Staff Education

Education strategies encompass many audiences. Patient safety education is provided bimonthly to Patient Safety Triad members, monthly to all new employees, quarterly to charge role leaders, new leaders, and as required to new residents. As well, biyearly workshops to review the basic principles of patient safety are offered.

This year as part of the education review at McMaster a simulated patient room with planted patient safety risks was part of the review. Staff enjoyed being able to attend this interactive experience to assess their knowledge of patient safety risks. It was also used in the new graduate orientation for nursing and was available for staff during Canadian Patient Safety Week this year.

Patient Safety Symposium

This year will mark the fifth annual patient safety symposium. This symposium is attended by approximately 500 of the leaders of patient safety including the triad members. It provides a showcase of the work to date but also offers vision for the future. It has been a very successful event that is anticipated by many.

Conclusion

Patient safety has become a major focus in healthcare organizations internationally. Significant gains have been made in the last three years at HHS. HHS is recognized as a leader in patient safety and continues to model strong leadership and commitment to this goal. The journey of patient safety is a long one, and the focus on quality care for our patients is being integrated into many governing bodies. The harnessing of the power of our 10,000 staff will create incredible momentum to our goal and continues to be the vision of HHS. Patient safety contributes to the ongoing development of a balanced approach to quality care for our patients.
References


Executive Summary

In June 2005, Hamilton Health Sciences set the goal of "zero preventable deaths in five years". Two years have passed and the goal is now "zero in three". In order to achieve this goal, within an ever-changing and highly complex healthcare system, a comprehensive plan must be created which effectively and efficiently addresses the patient safety risks and issues that lead to potential preventable deaths within Hamilton Health Sciences (HHS).

Implementation of this plan requires significant commitment from the leadership and tremendous strategic agility, as well as superior execution of an integrated change strategy. Robert Kaplan and David P. Norton (2001) have concluded that the ability to implement the strategy is more important than the strategy in itself. Successful execution of patient safety strategies and initiatives requires all HHS employees to truly understand and commit to the strategic goals of the organization.

In 2006 a strategy map and four year patient safety plan were drafted which addressed the external requirements for patient safety and other initiatives that are required to accelerate towards our goal of zero preventable deaths. The Patient Safety Strategy Map was developed based on the four perspectives of Kaplan and Norton’s (1996) Balanced Scorecard: Customer, Finances, Internal Processes and Learning and Innovation.

The Patient Safety Plan has been revised to reflect current patient safety initiatives, internal and external drivers for change.

Introduction

“Zero potential preventable deaths in five years” is the goal that was set for Hamilton Health Sciences in June 2005. In order to meet this goal, a comprehensive plan must be created which effectively and efficiently addresses the patient safety risks and issues that lead to potential preventable deaths and adverse events within Hamilton Health Sciences (HHS).

The plan must integrate the knowledge and expertise available from the fields of quality, patient safety, change management, organizational development and leadership development to ensure the transformational change necessary to achieve the “zero in five” goal.

Using the original Four Year Patient Safety Plan entitled “Accelerating Towards Zero In Four: A Plan for Patient Safety” approved in April 2006 and updated in September 2006, as the base, this report will serve as an annual updated ‘Work Plan’ in alignment with our annual operation and corporate decision cycle.

This document will identify internal and external stakeholders and key drivers for change in terms of priorities and strategies for implementation of initiatives to address patient safety and quality.

The following Patient Safety Four Year Plan Update (2007) addresses the external requirements for patient safety, as well as other initiatives that are required to accelerate towards our goal of zero potential preventable deaths at HHS.
Background

In recent years, a number of key themes have emerged in our health care system: (a) an increased focus on accountability for access, integration, and financial performance, (b) a more integrated system to enhance continuity of care, and (c) the continued emphasis on the need for adequate human and physical resources in recent years. Following the Institute of Medicine Report and Baker and Norton et al’s 2004 landmark study, there has been a growing emphasis on patient safety. The establishment of the Canadian Patient Safety Institute (CPSI) was announced in December 2003 with a mandate to provide leadership and coordinate the work to build a culture of patient safety and quality improvement throughout the Canadian health system. The Canadian College of Health Service Executives developed a position paper for members in 2004 which states that responsibilities and accountabilities for patient safety need to be delineated in governance, management and clinical processes.

In November 2004, the Canadian Council on Health Services Accreditation (CCHSA) began its communications around its new Patient Safety Goals and Required Organizational Practices (ROPs). The objective of the goals and practices is to assist organizations to enhance patient/client safety. The goals and practices were approved by CCHSA’s Board in September 2004, and came into effect in January 2006.

CCHSA expects organizations to put in place the appropriate policies, processes, practices and/or systems to meet CCHSA’s Patient/Client Safety Goals and Required Organizational Practices. CCHSA recommends organizations review relevant literature and seek out specific patient safety resources through organizations such as health associations, the Institute for Safe Medication Practices (ISMP) Canada, Safer Healthcare Now! (SHN) and the Canadian Patient Safety Institute (CPSI), to determine what actions to take to meet the goals and practices. It is CCHSA’s intent that the patient safety goals and practices (currently 25 ROPs) will eventually become standards, and new goals and practices will evolve. The appropriate monitoring, measurement, evaluation and management of patient safety goals and practices will include the development of a set of relevant and value-added indicators. The 25 ROPs comprise the original 21 Rops launched in January 2005 and an additional four ROPs announced in January 2007. The four newly launched ROPS are as follows:

- **Goal: Reduce the risk of injuries resulting from patient falls**
  - Implement and evaluate a falls prevention strategy to minimize the impact of patient falls.

- **Goal: Improve effectiveness and coordination of communication among care providers and with the recipients of care/service across the continuum**
  - Use at least two patient identifiers prior to the provision of any service or procedure.

- **Goal: Reduce the risk of influenza and pneumococcal disease in high-risk populations**
  - Develop and implement an organizational policy and protocol for administration of the influenza vaccine.
  - Develop and implement an organizational policy and protocol for administration of the pneumococcal vaccine.

HHS is expected to be in compliance with the patient safety goals and practices of these 25 ROPs.
Patient Safety: External Influence

The following key bodies may exert impact on the key drivers for change in terms of standards, priorities, strategies, direction and pace for the implementation of initiatives to address patient safety.

- Canadian Council on Health Services Accreditation (CCHSA)
- Canadian Patient Safety Institute (CPSI)
- Safer Healthcare Now! (SHN)
- Institute for Safe Medication Practices (ISMP) Canada
- Canadian College of Health Service Executives (CCHSE)
- The Association of Canadian Academic Healthcare Organization (ACAHO)
- Ministry of Health and Long-Term Care (MOHLTC)/Wait Time Strategies

Patient Safety: Key Drivers for Change

Accountability

- Clear definition of accountabilities for patient safety
- Regular reporting to Executive Team through Patient Safety Steering Team and Quality Committee on quality and patient safety issues
- Regular reporting to the Quality Committee of the Board and Performance Monitoring Committee of the Board

Communication and Teamwork

Health care providers, patients and all others within the health system must be informed participants and understand that human error is inevitable. Furthermore, they must demonstrate their knowledge and/or commitment to the following:

- Underlying systematic factors including ongoing system change contribute to most near misses, adverse events and critical incidents
- Communication of adverse event policy
- Quality of Care Committee under QCIPA
- Safer hand-offs and transitions
- Openness in communication with staff, key stakeholders, patients and the public at large
- Sharing and dissemination of "lessons learned" and feedback about improving patient safety throughout the continuum of care
- Transparent and open communication is essential for a culture of quality and patient safety
- Behaviour change is a key indicator of effective communications

Culture

Driving cultural change by demonstrating commitment to safety through:

- Clearly communicating patient safety goals
- Visible commitment to openly share information
- Driving patient safety education at every level and at every opportunity
- Supporting resources and tools required to achieve success
- Patient Safety Leadership Walkarounds

High Reliability/redesign

Based on learning from the aviation industry and the nuclear industry, reliability principles include:
- Simplification
- Standardization, such as,
  - Failure mode analysis for selected new technologies and processes
  - Wound care program
  - Patient Falls Prevention Program
  - Patient Lifts and Transfers Program
- Work design with attention to human factors
- Environment

Measures
- Develop reporting policies and procedures within a quality/performance improvement framework across the organization that promote learning
- Ensure appropriate monitoring and reporting mechanisms are in place

Professional Development
- Maintenance of professional competency is an important aspect of ensuring patient safety
- Interdisciplinary collaborative practice model
- Patient Safety Education
- Team Safety Education Plan
Patient Safety identified as one of the five organizational strategic themes in the HHS Strategy Map.

Figure 1: HHS Patient Safety Strategy Map
Description of the Patient Safety Plan

The four year Patient Safety Plan Update (2007) has been drafted with consideration to the Required Organizational Practices outlined by CCHSA and practices recommended by Safer Healthcare Now!, IHI, ISMP and the OHA. The plan also incorporates practices or strategies recommended in quality, patient safety and organizational development literature.

The Patient Safety Plan has been created to meet two objectives. One objective is to meet the goal of zero potential preventable deaths by 2010 and to achieve sustained improvements. The second objective is to address the 25 Required Organizational Practices, which will need to be fully implemented to meet Accreditation standards in Spring 2008. In order to meet these objectives, the initiatives outlined in the plan have been clustered and sequenced to build on and enhance one another and optimize impact in the organization.

The Patient Safety Strategy Map was the framework used for the development of the plan. Table 1 (page 11 to 18) provides an outline of the Updated Patient Safety Plan (2007). Key Processes/Strategies with relevant objectives, where applicable, are listed in the first (left column). Initiatives are numbered and are clustered for each key strategy.
Updated Patient Safety Plan—Based on the Initial 2006 Four-Year Patient Safety Plan

<table>
<thead>
<tr>
<th>Strategy &amp; Objectives</th>
<th>No</th>
<th>Initiatives</th>
<th>Previous Decisions 2006-2007</th>
<th>Potential status as of 2007</th>
<th>Submission for Decision Required</th>
<th>Source</th>
<th>MRP</th>
<th>SCOPE</th>
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</thead>
<tbody>
<tr>
<td><strong>Infection Control Practices</strong></td>
<td></td>
<td><strong>1</strong> Examine and improve sterilization processes</td>
<td></td>
<td></td>
<td></td>
<td>CCHSA ROP</td>
<td>Sue Smith</td>
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<td></td>
<td></td>
<td><strong>ROP:</strong> Adhere to federal and/or provincially developed infection control guidelines such as Health Canada’s Infection Control Guidelines: Handwashing, Cleaning, Disinfection, and Sterilization in Healthcare.</td>
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<td></td>
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<td><strong>2</strong> Prevent surgical site infection</td>
<td>Spread will be determined by Periop Services</td>
<td>Program based- Perioperative Services</td>
<td>SHN</td>
<td>Kelly Camp bell</td>
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<td></td>
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<td><strong>3</strong> Prevent Central Line Infection</td>
<td>Deferred</td>
<td>Corporate strategic initiative</td>
<td>SHN WAIT TIMES</td>
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<td><strong>4</strong> Prevent ventilator associated pneumonia</td>
<td>Corporate strategic initiative</td>
<td>Associated with Wait Time Strategy Funding</td>
<td>Critical care only</td>
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<td></td>
<td>R1</td>
<td><strong>Monitor infection rates and share this information throughout the organization.</strong> Measuring Healthcare Associated Infection: MRSA infection rate &amp; C. difficile infection rate; and Surgical Site Infection: Rate of post surgical infections and rate of timely administration of prophylactic antibiotic</td>
<td></td>
<td></td>
<td></td>
<td>CCHSA ROP</td>
<td>MUST INCORPORATE WITH STRATEGIES 2, 3 &amp; 4</td>
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<tr>
<td>No</td>
<td>Initiatives</td>
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<td>Potential status as of 2007</td>
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<td>Source</td>
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<tr>
<td>5</td>
<td>Cleanliness and clutter campaign &lt;br&gt;&lt;strong&gt;ROP:&lt;/strong&gt; Adhere to federal and/or provincially developed infection control guidelines such as Health Canada's Infection Control Guidelines: Handwashing, Cleaning, Disinfection, and Sterilization in Healthcare</td>
<td>Service based on Customer Support Services</td>
<td>Service based for cleaning, disinfection and sterilization Clinical Support Services and Customer Support Services</td>
<td>Corporate strategic initiative for handwashing</td>
<td>Linda Carsoon</td>
<td></td>
<td>CCHSA ROP</td>
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<td>R2</td>
<td>Deliver education and training for staff, other providers and volunteers on handwashing/hygiene</td>
<td>Corporate strategic initiative</td>
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<td>CCHSA ROP</td>
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<td>Pandemic Planning</td>
<td>Corporate strategic initiative</td>
<td>Program based on Professional Affairs</td>
<td></td>
<td>Nancy Fram</td>
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<td>6</td>
<td>High Risk Medication Management Practices 3/19/2007: Verification process, narcotics and anticoagulants &lt;br&gt;&lt;strong&gt;ROPs:&lt;/strong&gt; 1. Remove concentrated electrolytes (including, but not limited to, potassium chloride, potassium phosphate, sodium chloride &gt;0.9%) from patient/client care units. 2. Standardize and limit the number of drug concentrations available in the organization</td>
<td>Program/service based on Professional Affairs and Clinical Support Services</td>
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<td>CCHSA, ISMP, OHA</td>
<td>Nancy Fram/ Sue Smith</td>
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<td>Include monitoring the removal of concentrated electrolytes; standardization and limitation of drug concentrations</td>
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<td>Strategy &amp; Objectives</td>
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<td>Initiatives</td>
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<td>Medication Safety Initiative: (Pharmacy automation)</td>
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<td>Corporate strategic initiative</td>
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<td>Reconciliation of Medications-Admission</td>
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<td>Corporate strategic initiative</td>
<td>CCHSA ROP</td>
<td>Nancy Fram</td>
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<td>8</td>
<td>Reconciliation of Medications-Transfer and Discharge</td>
<td>Deferred in scope of corporate strategic initiative</td>
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<td>CCHSA ROP</td>
<td>Nancy Fram</td>
<td>Development and plan implementation</td>
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<td>R3</td>
<td>ROP: Provide ongoing, effective training for service providers on all infusion pumps</td>
<td>Program based- Clinical Education</td>
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<td>CCHSA ROP</td>
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<td>Proven Best Practices</td>
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<td>Corporate strategic initiative</td>
<td>Initiative for sustainability</td>
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<td>Charl otte Danie ls</td>
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<td>Critical Care Response Team (PACE Team)</td>
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<td>Best practice for Acute Myocardial Infarction care</td>
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<td>11</td>
<td>Integrated SWAT response team—staff support, patient support, and process improvement support following an adverse event, near misses</td>
<td>Defer</td>
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<td></td>
<td>N1</td>
<td>Implement and evaluate a falls prevention strategy to minimize the impact of patient falls</td>
<td>Corporate strategic initiative</td>
<td></td>
<td>CCHSA 2007 ROP</td>
<td>RNAO Best Practice Guidelines: Pressure Ulcers and Falls</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strategy &amp; Objectives</td>
<td>No</td>
<td>Initiatives</td>
<td>Previous Decisions 2006-2007</td>
<td>Potential status as of 2007</td>
<td>Submission for Decision Required</td>
<td>Source</td>
<td>MRP</td>
<td>SCOPE</td>
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</tr>
<tr>
<td>Patient Safety Communi...</td>
<td>12</td>
<td>Transfer of Accountability- Nursing Shift to Shift</td>
<td>Corporate strategic initiative</td>
<td>Program based- Clinical</td>
<td>CCHSA ROP Nancy Fram</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>Transfer of Accountability- Allied Health, transition, and unit to unit</td>
<td>Deferred in scope of corporate strategic initiative</td>
<td>Corporate strategic initiative</td>
<td>CCHSA ROP Nancy Fram</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>R4</td>
<td>Physician Handover</td>
<td>Corporate strategic initiative</td>
<td>CCHSA ROP Dick McLean Communication between covering physicians</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>13</td>
<td>Implement processes to enhance patient safety communications: 1)Critical language, SBAR, closed loop communication; 2) verification and checking systems for ordering and receiving critical test results</td>
<td>Incorporate appropriate elements into RACE/PACE initiatives</td>
<td>Corporate strategic initiative</td>
<td>CCHSA ROP IHI</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>13</td>
<td>Team model for patient safety</td>
<td>Incorporate appropriate elements into RACE/PACE initiatives</td>
<td>Corporate developmental initiative</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>Surgical/procedural pauses and safety briefings</td>
<td>Corporate strategic initiative</td>
<td>CCHSA ROP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N2</td>
<td>Use at least two patient identifiers prior to the provision of any service or procedure</td>
<td>Corporate strategic initiative</td>
<td>CCHSA 2007 ROP</td>
<td>Link with surgical/procedural pauses initiative</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>26</td>
<td>Armbands, Allergies and Alerts</td>
<td>Corporate strategic initiative</td>
<td>Initiative for sustainability</td>
<td>Nancy Fram</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strategy &amp; Objectives</td>
<td>No</td>
<td>Initiatives</td>
<td>Previous Decisions 2006-2007</td>
<td>Potential status as of 2007</td>
<td>Submission for Decision Required</td>
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<tr>
<td><strong>Team Process</strong></td>
<td>15</td>
<td>Multidisciplinary team based process to manage high risk situations</td>
<td></td>
<td>Defer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient Involvement</td>
<td>16</td>
<td>Develop and implement comprehensive strategies to enhance patient involvement and communication <strong>ROP:</strong> Inform and educate patients/clients and/or family about their role in patient safety, using both written and verbal communication.</td>
<td>Elements of the strategy will be integrated into other initiatives as appropriate</td>
<td>Corporate strategic initiative</td>
<td>CCHSA ROP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Culture of Patient Safety and Accountability</td>
<td>17</td>
<td>Alignment of all policies and procedures with patient safety principles, competencies and indicators <strong>ROP:</strong> Adopt patient safety as a written, strategic priority/goal.</td>
<td>Program based- Professional Affairs</td>
<td></td>
<td>CCHSA ROP</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>18</strong></td>
<td>Develop and implement a patient safety accountability framework, which includes roles, responsibilities, and accountabilities for patient safety <strong>ROP:</strong> Delineate clearly the roles, responsibilities, and accountabilities of staff and other providers for patient/client care and safety.</td>
<td>Corporate development initiative</td>
<td>Corporate strategic initiative</td>
<td></td>
<td>CCHSA ROP</td>
<td>Jennifer Evers</td>
<td>Complete development activities and implement</td>
<td></td>
</tr>
<tr>
<td>Strategy &amp; Objectives</td>
<td>No</td>
<td>Initiatives</td>
<td>Previous Decisions 2006-2007</td>
<td>Potential status as of 2007</td>
<td>Submission for Decision Required</td>
<td>Source</td>
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<tr>
<td></td>
<td>19</td>
<td>Patient Safety Leadership Walkarounds</td>
<td>Corporate strategic initiative</td>
<td>Initiative for sustainability</td>
<td>Required</td>
<td>CCHSA ROP</td>
<td>Charl</td>
<td>SCOPE</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>Quality/performa</td>
<td>Corporate developme</td>
<td>Corporate</td>
<td>CCHSA</td>
<td>Brend</td>
<td>Implementatio</td>
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<td>measurem</td>
<td>nt, evaluation, improveme</td>
<td>nce improvement</td>
<td>nt initiative initiative</td>
<td></td>
<td>ROP</td>
<td>a Flaher</td>
<td>n and re</td>
<td>nt and reporting</td>
</tr>
<tr>
<td>21</td>
<td>Occurrence Reporting Protocol and Safety Occurrence Report</td>
<td>Corporate strategic initiative</td>
<td>Program based- Corporate and Medical Affairs</td>
<td>CCHSA ROP</td>
<td>Jennifer Evers</td>
<td>Integration of lab reporting system and Software</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Develop a process/system to respond to external patient safety related alerts</td>
<td>Service based- Clinical Support Services/Corporate and Medical Affairs</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Strategy &amp; Objectives</td>
<td>No</td>
<td>Initiatives</td>
<td>Previous Decisions 2006-2007</td>
<td>Potential status as of 2007</td>
<td>Submission for Decision Required</td>
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<tr>
<td></td>
<td>R5</td>
<td>Develop and implement a plan and process to assess patient safety issues within the organization and to carry out improvement activities</td>
<td>Service based-Organizational Effectiveness</td>
<td></td>
<td>CCHSA ROP</td>
<td></td>
<td></td>
<td>e.g. PSLWA</td>
</tr>
<tr>
<td></td>
<td>R6</td>
<td>Implement an effective preventative maintenance program for all medical devices, equipment and technology</td>
<td>Service based-Clinical Support Services</td>
<td></td>
<td>CCHSA ROP</td>
<td></td>
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<tr>
<td></td>
<td>R7</td>
<td>Carry out one patient safety related prospective, analytical process per year (e.g. FMEA) and implement appropriate improvements/changes</td>
<td>Program/service based</td>
<td></td>
<td>CCHSA ROP</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>N3</td>
<td>Develop and implement an organizational policy and protocol for administration of the influenza vaccine</td>
<td>Services based</td>
<td></td>
<td>CCHSA 2007 ROP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N4</td>
<td>Develop and implement an organizational policy and protocol for administration of the pneumococcal vaccine</td>
<td>Services based</td>
<td></td>
<td>CCHSA 2007 ROP</td>
<td></td>
<td></td>
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<tr>
<td>Strategy &amp; Objectives</td>
<td>No</td>
<td>Initiatives</td>
<td>Previous Decisions 2006-2007</td>
<td>Potential status as of 2007</td>
<td>Submission for Decision Required</td>
<td>Source</td>
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<td>SCOPE</td>
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</tr>
</tbody>
</table>
| **Education and Professio**  
   nal development | 23 | Build capacity for and knowledge of quality improvement in the organization through the provision of quality improvement and patient safety education to all staff  
   **ROP:**  
   *Deliver at least annual education/training on patient safety to all staff including targeted patient safety focus areas within the organization.* | Deferred to development within OE with Patient Safety Triads as target group | Corporate developmental initiative | CCHSA ROP                                                                 |        |      |      |
| **Information and Communication** | 24 | Acquire, integrate and utilize data/information in a timely manner  
   + | Timely access to health records by care providers | Services based- Finance and Integrated Health Information | Kathy Watts                                                                 |        |      |      |

**Legends:**

Numbers 1 to 25: From the Original Patient Safety Plan (2006)


N1 to N4: *NEW* Required Organization Practices Launched in January 2007 by CCHSA

+ : Additional Initiative
Appendix 2 – Patient Safety Leadership Walkarounds

Background:

PSLWA are known to be one of the strongest methods for enhancing patient safety culture and provide an informal method for leaders to talk with front line staff about patient safety issues and demonstrate support for patient safety. The outcome of PSLWA includes the identification of patient safety issues, which are resolved or improved as the result of this collaborative approach. Communication and teamwork are important to patient safety. To enhance patient safety we must strive to develop a culture of patient safety whereby every individual, whether on the receiving or delivery end of care, is preoccupied with safety, is armed with the skills to evaluate his or her environment for potential harm, and is supported and rewarded for making appropriate choices (Frankel et al. 2003). PSLWA promotes teamwork, opens communication channels and offers an opportunity for teams to engage in working together to improve patient safety. As well this provides a structure to report occurrences and near misses in a safe environment that is focused on learning from error and creating safer systems.

Aim:

We are trying to enhance the foundation of a patient safety culture, where we demonstrate the importance of patient safety by regularly engaging all leaders at HHS in an active dialogue about patient safety with front line staff who are then part of resolutions and improvements with the demonstrated support of leaders.

Evidence of Success:

100% of programs and services participate and report patient safety issues and quality improvement work
# of PSLWA booked

Progress to Date:

In the first year of implementation 984 PSLWA were scheduled. During these PSLWA, 1351 patient safety issues were identified, of which 64-80% of those issues were resolved or have active improvement work in progress (see figure 1). Following the first year of implementation of this strategy a process evaluation was completed to evaluate the current process of PSLWA at HHS. In March 2007, 500 staff (including the leadership team and five front line members from each area or unit) were asked to complete a survey to evaluate the PSLWA process. The survey consisted of demographic questions, 15-four point scale questions and 4 open ended questions related to the process. In addition leaders were asked to complete an additional ten questions related to their role in PSLWA. A total of 341 surveys (68%) were received from 26 programs. Front line staff represented 53% of responses and 43 % were leaders (formal or informal). Responses from clinical/service areas (71%/28% respectively) were received.
The evaluation demonstrated satisfaction with the process of PSLWA, with some areas that were opportunities for further improvement. The strengths of PSLWA are listed below:

- 93% of respondents agreed that PSLWA had increased their awareness of patient safety issues
- 93% of respondents felt comfortable openly and honestly discussing patient safety issues
- 70% of respondents felt that they were always heard at PSLWA
- 91% of leaders felt comfortable leading PSLWA (96% clinical, 85% service)

In addition to these quantifiable results, the qualitative responses to the evaluation were overwhelmingly positive. The following represent a portion of these responses:

- “Staff identify that the PSLWA are useful and important”
- “I think that PSLWA are brilliant.”
- “Staff are now looking forward to LWA, more and more staff want to attend. We are getting more physician attendance as well”
- “…a very positive initiative… extremely pleased with the process and staff feedback”
- “Pleasantly surprised by how the staff have embraced the initiative”
- “This is a fantastic avenue for the minds to meet to attain our common goal of patient safety. The forum is open and one feels that together, we can make anything happen”
- “… They make me feel that we are a team… meaning all of us can make a difference regarding how we work together to improve all aspects of care…. When you feel you are making a difference daily … workload no longer feels like workload but a service done and I feel good about how the day goes”

Areas identified for improvement included: scheduling aspects, scripting, feedback, reporting, and accountability. All of these improvements have been incorporated into the current process to ensure continuous quality improvement.

Submitted by: Teresa Smith, Ivan Ip & Rosanne Zimmerman
Appendix 3 - Occurrence Reporting Initiative

Background
Patient safety literature continues to demonstrate an unacceptable rate of preventable injury or death for hospital patients. Reliable reporting mechanisms allow organizations to understand trends and provide data, which can be used in decision making for allocation of resources related to patient safety initiatives. This process allows for a proactive approach to safety. Historically, there were over 20 forms and processes for tracking error used throughout HHS with no centralized database for all occurrences. Additionally, there was no reliable method to track near miss events.

Aim
The aim of this initiative is to establish a simplified consistent approach to increase the ease of reporting and tracking of near misses and adverse events, which support the philosophy of a non-punitive culture and allows for trending of data and inform the organization on a focus for future system improvements and the units/departments on future local improvements.

Successes
- A protocol regarding reporting and management of occurrences has been established and ensures one process is used for occurrences throughout HHS.
- One form is now being used for all occurrences – patient, staff and visitor.
- There is increased knowledge of the protocol throughout the organization.
- Near miss events are now being reported and we can track trends of level of harm.
- Data from two quarters reveals a 129% increase in reporting from the same time period last year.
- Advanced statistical analysis beginning to inform the organization as to where improvement efforts should be focused i.e. Falls have a 2.08 greater odds of causing harm than all non fall related occurrences.

Examples of Data from 1st Quarter Report

<table>
<thead>
<tr>
<th>Percentage of Occurrences Reported by Site</th>
<th>Number of Actual Events &amp; Near Misses</th>
</tr>
</thead>
<tbody>
<tr>
<td>General 30%</td>
<td>1251 Actual Event 43 Near Miss 0 Not Entered</td>
</tr>
<tr>
<td>Hend 29%</td>
<td>374 Actual Event 43 Near Miss 0 Not Entered</td>
</tr>
<tr>
<td>MUMC 23%</td>
<td>1100 Actual Event 314 Near Miss 0 Not Entered</td>
</tr>
<tr>
<td>Chedoke 8%</td>
<td>374 Actual Event 43 Near Miss 0 Not Entered</td>
</tr>
<tr>
<td>Children 3%</td>
<td>314 Actual Event 0 Near Miss 0 Not Entered</td>
</tr>
<tr>
<td>Other JCC 1%</td>
<td>314 Actual Event 0 Near Miss 0 Not Entered</td>
</tr>
</tbody>
</table>

Summary
This initiative has made significant progress in the establishment of a consistent approach to the reporting and management of occurrences at HHS. There continues to be challenges associated with the current paper-based system, the generation of unit specific reports, and ensuring the sustainability of change, however, we now have the ability to track trends, identify areas of risk and implement changes needed to increase safety throughout HHS.

Patient Safety Progress Report
Quality – Board of Directors Subcommittee
October 2007

Submitted by: Catherine McCann Patient Relations/Risk Management Specialist and Mladen Samac, Manager Corporate & Medical Affairs
Appendix 4 - Patient safety work accomplished at HHS – Medication Reconciliation

Background to the project

Up to 60% of patients admitted to hospital will have at least one discrepancy in their admission medication history (Cornish et al, 2005). Medication reconciliation is a formal process of obtaining an accurate list of pre-admission medications and comparing these to the physician’s orders on admission to ensure home and in-hospital medications are the same, or only changed intentionally with reasons documented. Discrepancies are identified and clarified in order to reduce medication errors and harm (Institute for Healthcare Improvement, 2005). This standardized medication reconciliation process ensures medication changes are documented and communicated throughout a patients’ hospital stay. This reduces risks of an adverse drug event ultimately providing our patients a safer environment.

Aim

The aim of this project is to create a process involving pharmacists, certified pharmacy technicians, nurses and physicians working together to ensure the best possible medication history is obtained for each and every patient. This year’s project aim is to implement the medication reconciliation on admission to decrease the risk of adverse drug events related to discrepancies in home medications and admission medications.

Progress to date

The pilot is occurring across four distinct areas of the MUMC site: Emergency department, Pediatrics (3B/3C), Internal Medicine (3X/3Y), and Pharmacy. Information about the drug name, dosage, frequency and route is collected on one document shared by all of the disciplines. This is then compared to the admission orders. Discrepancies are brought to the attention of the prescriber and if appropriate changes are made to the orders and documented on the health record. Implementation in the pilot areas began in mid October 2006 with a documentation tool initiated in the Emergency Department and completed within 48 hours of hospital admission. The pilot project team developed an education package, communication plan and a documentation tool to facilitate the process. This tool is in the form of a physician medication order to reduce duplication and provide a clear consistent place to document medication on the health record. Implementation planning and process audits to date have identified significant challenges for this change to be implemented and sustained including physician and front line ED staff engagement. Throughout the pilot, examples of medication discrepancies have been identified and medication errors avoided. With the introduction of a certified pharmacy technician role in ED, we expect to improve the process. Process and plan for piloting medication reconciliation on transfer has been proposed in pediatrics – transfers between wards 3B/3C to PICU.

Data collection related to medication discrepancies will continue during this implementation to allow measurement of improvements as part of Safer Healthcare Now! (SHN) and Canadian Association of Pediatric Health Centres (CAPHC) patient safety initiative as well as process audits to assist with engagement of staff and for sustainability planning.
Summary of Medication Reconciliation Data

The goal of medication reconciliation is to monitor organizational success and to eliminate medication discrepancies. There are three types of discrepancies:

1. **Intentional Discrepancy (Type 1)**
   An intentional discrepancy is one in which the physician/APN has made an intentional choice to add, change or discontinue a medication and their choice is clearly documented in the patient’s health record. This is considered to be “best practice” in medication reconciliation.

2. **Undocumented Intentional Discrepancy (Type 2)**
   An _undocumented intentional_ discrepancy is one in which the physician/APN has made an intentional choice to add, change, or discontinue a medication but this choice is not clearly documented. These discrepancies are a failure to document are not medication errors and do not usually represent a serious threat to patient safety. They can however lead to confusion, require extra work and may lead to medication errors.

3. **Unintentional Discrepancy (Type 3)**
   An _unintentional_ discrepancy is one in which the physician unintentionally changed, added or omitted a medication the patient was taking prior to admission. Unintentional discrepancies are medication errors that can lead to adverse drug events (ADEs).

**Type 0** refers to instances where there are NO medication discrepancies.

Safer Healthcare Now asks organizations to measure their progress on an ongoing basis. Three measures are used:

1. **Mean Number of Undocumented Intentional Discrepancies (Documentation Accuracy)**
   
   \[
   \text{Mean \# of undocumented} = \frac{\text{\# of undocumented intentional discrepancies}}{\text{\# of patients}}
   \]

2. **Mean Number of Unintentional Discrepancies (Rate of Error)**
   
   \[
   \text{Mean \# of unintentional} = \frac{\text{\# of unintentional discrepancies}}{\text{\# of patients}}
   \]

3. **Medication Reconciliation Success Index (Improvement over time)**
   
   \[
   \text{Medication Reconciliation} = \frac{\text{\# of NO discrepancies} + \text{\# of documented intentional discrepancies}}{\text{\# of all discrepancies}} \times 100
   \]

Type 0 and Type 1 are considered best practice. Therefore our efforts are concentrated on reducing the rate of Type 2 and Type 3 discrepancies, that is, to reduce the rate of undocumented intentional discrepancies and unintentional discrepancies.
Adult Medicine Medication Reconciliation Mean Numbers/ Patient 2007 to Date

<table>
<thead>
<tr>
<th>Month</th>
<th>Type 0</th>
<th>Type 1</th>
<th>Type 2</th>
<th>Type 3</th>
<th>Success Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apr 07</td>
<td>5</td>
<td>2.2</td>
<td>0.6</td>
<td>0.4</td>
<td>87.8%</td>
</tr>
<tr>
<td>May 07</td>
<td>5.5</td>
<td>3.4</td>
<td>0.7</td>
<td>1.3</td>
<td>81.6%</td>
</tr>
<tr>
<td>Jun 07</td>
<td>3.75</td>
<td>2.2</td>
<td>1.35</td>
<td>0.83</td>
<td>73.9%</td>
</tr>
<tr>
<td>Jul 07</td>
<td>5.6</td>
<td>2.5</td>
<td>0.9</td>
<td>0.83</td>
<td>82.4%</td>
</tr>
<tr>
<td>Aug 07</td>
<td>5.3</td>
<td>2.2</td>
<td>1.0</td>
<td>1.3</td>
<td>76.5%</td>
</tr>
<tr>
<td>Sep 07</td>
<td>7.43</td>
<td>4</td>
<td>0.86</td>
<td>1.29</td>
<td>84.2%</td>
</tr>
<tr>
<td>Oct 07</td>
<td>4.5</td>
<td>3</td>
<td>1.25</td>
<td>1.0</td>
<td>77.1%</td>
</tr>
</tbody>
</table>

**Adult Medicine Medication Reconciliation Mean Numbers 2007 to Date**

**Pediatrics Medication Reconciliation Mean Numbers/ Patient 2007**

<table>
<thead>
<tr>
<th>Month</th>
<th>Type 0</th>
<th>Type 1</th>
<th>Type 2</th>
<th>Type 3</th>
<th>Success Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb 07</td>
<td>1.2</td>
<td>2.1</td>
<td>0.3</td>
<td>0.9</td>
<td>73.3%</td>
</tr>
<tr>
<td>Mar 07</td>
<td>3.45</td>
<td>1.89</td>
<td>0.78</td>
<td>0.78</td>
<td>81.4%</td>
</tr>
<tr>
<td>Jun 07</td>
<td>4.1</td>
<td>2.1</td>
<td>0.8</td>
<td>0.55</td>
<td>81.9%</td>
</tr>
<tr>
<td>Jul 07</td>
<td>1.25</td>
<td>4.5</td>
<td>0</td>
<td>0.17</td>
<td>97.2%</td>
</tr>
<tr>
<td>Aug 07</td>
<td>2.1</td>
<td>3.1</td>
<td>0.2</td>
<td>0.1</td>
<td>94%</td>
</tr>
</tbody>
</table>

**Pediatric Medication Reconciliation Mean Numbers 2007**

**No data available April and May**

Submitted by: Ruth Lee, Nursing Practice Chief and Marita Tonkin, Pharmacy Practice Chief

Patient Safety Progress Report
Quality – Board of Directors Subcommittee
October 2007
Critical Care Outreach Teams (CCOT), also known as Medical Emergency Teams (MET) or Rapid Response Teams (RRT) are an important patient safety strategy in the prevention of death in patients who are progressively failing outside of the Intensive Care Unit (ICU). In May 2006, the Ministry of Health and Long Term Care (MoH & LTC) provided funding for Adult teams at 22 sites in Ontario. Hamilton Health Sciences (HHS) received funding to provide a 24/7 adult service at the Hamilton General site. Known as the RACE Team (Rapid Assessment of Critical Events), the team is comprised of a critical care registered nurse (RN), a registered respiratory therapist (RRT) and a physician.

The RACE Team was implemented using a phased in approach, beginning in May 2006. During Phase 1, RACE Team, RNs and RRTs underwent a rigorous selection process and educational program. This included attendance at a 2-day Canadian Resusitation Institute course in Toronto, on-site classroom time, IV, ward experiences as well as a 2-day teamwork and communication skills workshop. Phase 2 began in November 2006 when the RACE Team become operational 8 hours a day, weekdays only. RNs and RRTs gained preceptored experience with the RACE Physician during this phase.

Since January 29th 2007, the RACE Team has been operational 24/7 (Phase 3) and has made great strides as evidenced by the number of consults, follow-up visits and patient unit staff satisfaction survey results. The team is charged with:

- Identification and resuscitation of in-patients at risk of deterioration
- Performing prophylactic interventions including follow-up of patients recently discharged from the ICU to prevent readmission, and rounds on the patient units
- Knowledge dissemination to promote acute care education, the concept, use and effectiveness of the RACE Team as well as a culture of patient safety and responsiveness
- Assistance with decisions regarding appropriateness of care, end-of-life decision-making, and organ donation opportunities.

The numbers of patients that the team has interacted with has continued to rise with only one small dip in numbers during April 2007. During the first 3 months of 24/7 service:

- A total of 830 patients were seen by the RACE Team
- 124 of these visits were New Consults
- The numbers of New Consults have continued to grow with 76 New Consults in June 2007.

Experts on the Project Leadership Team for this provincial initiative have advised that this level of activity is not usually seen until a team reaches maturity (i.e. after 2 years or so). The RACE Team is also carefully monitoring the numbers of Code Blue arrests (involving CPR) as well as the number of respiratory arrests at the HGH Site each month. The number of Code Blue arrests called has declined from an average of 15 per month to an average of 5 per month. The team has made the most significant impact on the numbers of patients experiencing a respiratory arrest. Proactive intubation by the RACE Team means that respiratory arrests rarely occur at this site.

The RACE Team assesses and works in partnership with patient unit staff to stabilize the patient. However, in some cases the patient needs to be moved to a specialized area to receive a higher level of care. We continue to closely monitor how many patients remain on the ward and how often patients are moved to another unit post consult. Up until May 2007:

- 71 – 80% of patients remained on the ward
- 5-10% were admitted to a Step-down Unit
• 5% were transferred to the CCU, OR or HIU
• And 14-17% were admitted to the ICU.

The RACE Team has received overwhelmingly positive feedback from Hamilton General Site staff. Here is a snapshot of the Satisfaction Survey comments that have been received to date:

Ø Excellent teamwork
Ø .... considerate supportive and efficient
Ø Good communication
Ø Staff felt comfortable in calling the RACE team
Ø Great team very informative
Ø The RACE team is a big help, always nice and informative
Ø RACE team is very knowledgeable and helpful
Ø Staff on RACE are very friendly, efficient and approachable
Ø They were wonderful, explained things to husband, very calm, knowledgeable and effective

Submitted by Karen Cziraki and Dr. Peter Krauss (RACE Team Initiative Leads)
Appendix 6 – Pediatric Assessment of Critical Events Team

On average, only 17% of patients who experience a cardiac arrest survive to discharge\(^1\), yet many exhibit measurable signs of clinical deterioration preceding the event\(^2\).\(^3\). Those clinical warning signs can provide a key to preventing or reducing the rate of cardiac arrests through the use of Critical Care Response Teams (CCRTs). Critical Care Response Teams are groups of critical care practitioners that respond to acute deterioration in hospitalized patients. Implemented both nationally and internationally with enormous success, the use of CCRTs has been shown in many institutions to decrease rates of cardiac arrests, related adverse outcomes, and the length of stay in the intensive care units (ICUs).

The Ministry of Health and Long-Term Care (MOHLTC) recognized the importance of Critical Care Response Teams for their capacity to improve patient safety outcome, critical care access, and the efficiency of hospital resource utilization. In January 2006, the MOHLTC funded and implemented the Critical Care Response Team program in 22 Ontario hospitals in which the Hamilton General Hospital has received funding and established an adult CCRT team known as the RACE Team (Rapid Assessment of Critical Events). McMaster Children’s Hospital is one of four pediatric hospitals developing teams in this province-wide demonstration project. The PACE (Pediatric Assessment of Critical Events) team is comprised of a pediatric critical care nurse and physician and supported by a pediatric Respiratory Technician and Pediatric Critical Care Unit House staff during new activations. The PACE team can be activated by caregivers/family members and health care providers if the patient meets the predefined calling criteria. The PACE team also routinely follows all patients discharge from the PCCU for 48 hours as they may represent a higher risk for deterioration and to assist in the transition of chronically complicated patients.

The PACE team has been operating 24 hours / 7 days a week since Jan 29\(\text{th}\), 2007 and during this period of full implementation has responded to 171 new activations representing an average of 69 calls / 1000 patient admissions. Twenty-one percent of patients were admitted to the PCCU following this initial encounter and 38% of patients following any encounter including follow-up visits were admitted to the PCCU. Following full implementation of the team, the MCH has undergone a significant reduction in code blue activations to 2 in total since Jan 29\(\text{th}\), compared to 37 in a 2-year retrospective cohort. Moreover, in analysis of the two recent code blue activations, neither of them were considered to have been preventable by the PACE team.

References:

Submitted by: Dr. Jon Gilleland and Barb Jennings (PACE Team initiative leads)
Appendix 7 – Preventing Surgical Site Infections

Background:

The Surgical Site Infection (SSI) initiative began in February 2005. The ultimate objective was to demonstrate that for patients undergoing general surgical procedures, the application of an evidence-based peri-operative bundle of interventions, which included optimization of peri-operative antimicrobial use, blood glucose levels, and temperature, would reduce SSIs. Randomized clinical trials have demonstrated that these interventions are effective in reducing surgical site infections. The SSI project was done in conjunction with a pilot SSI research project headed up by Dr. Dick McLean.

Aim: To decrease the incidence of surgical site infections by:

Introducing a bundle of interventions aimed at:
- Appropriate selection, timing and duration of antibiotic prophylaxis
- Maintenance of peri-operative normothermia
- Maintenance of peri-operative blood sugar

Expected Outcomes:
- Decrease the number of SSIs in elective abdominal surgery patients
- Improve the percentage of patients receiving timely prophylactic antibiotic administration
- Improve the percentage of patients with normothermia
- Improve the percentage of peri-operative glucose control (5-11 mmol/L range)

Progress to Date:

Implementation has occurred at the McMaster in the general surgery population. Spread has begun at the Henderson and General sites and this will become a Safer HealthCare Now! initiative again in 2007 as part of the wait time funding strategy.

McMaster site data follows:
Appendix 8 – Medication Safety Initiative

The Medication Safety Initiative (MSI) is a corporate strategic initiative that will impact many of Hamilton Health Sciences (HHS) 10,000 employees. All communication regarding the patient safety aspects of this initiative are directed to all disciplines to ensure a patient-centered approach and a collaborative and comprehensive program. The ultimate intent of this initiative is to positively impact the organizational safety culture.

The MSI vision statement is "through a systems-based approach to processes and innovative use of technology, we commit to minimizing medication risk and facilitating patient-centered care."

Institute for Healthcare Improvement (IHI) experts recommend that standardized processes should be designed to prevent errors and harm. MSI project implementations continue to facilitate standardization of the medication process across all sites. Supporting policies and procedures are put in place to help sustain the change. The current and future projects within the MSI umbrella are noted below.

1. Implementation of Packaging Machines
Phase One of this project included the purchase of two identical PacMed packaging machines: One is located at the MUMC pharmacy servicing MUMC and the Chedoke sites, the other is at the General site pharmacy servicing the General and Henderson sites. All unit dose packaging from the PacMed now features one standardized label for all oral medications.

2. 24-Hour Unit Dose Service Delivery
This service delivery is the standard of practice for safe medication systems. Evidence demonstrates reduced incidence of medication errors, decrease in medication related activities for nursing, efficient use of pharmacy and nursing personnel, improved drug monitoring, reduced drug inventories, improved drug use control, increased adaptability to computerized processes and improved job satisfaction for health care professionals. The literature demonstrates that 25% of medication errors occur during the preparing and dispensing phase – 24-hour unit putting additional checks in the system prior to the RN/RPN completion of the five rights of medication administration. In March 2007 and September 2007 respectively, the Henderson and General sites implemented this change in practice. This now ensures that all HHS sites now meet the accreditation standard. The rollout included brand new standardized medication carts strategically chosen to move us toward the future of bedside medication verification. Additionally, the medication drawer filling procedure has been standardized across HHS and a certification process is currently underway. Prior to the change in service delivery, the ward stock and urgent stock maintained in medication rooms was reviewed and decreased. The medication stored in medication rooms have been reviewed to improve the safety of labeling, reducing look alikes/sound alikes and decreased risk of choosing wrong dose through minimizing drugs that are accessible prior to pharmacist review.

3. Automated Dispensing Units – AcuDose
The Institute for Safe Medication Practice (ISMP) recommends using technology to store medication that have the capability to force functions making it impossible for a high alert drug to be given in a potentially lethal manner. HHS has committed to the purchase of 78 Automated Dispensing Units that do just that and more. Each AcuDose Dispensing Unit comes equipped with high capacity drawers and lock-lidded pockets to house narcotics, benzodiazepines and certain High-Alert medications. The User logs on to the AcuDose using a unique User ID and complex
password providing an electronic signature to all medications dispensed. Additionally, studies indicate that 49% of medication errors occur during the ordering phase. One of the roles of the Pharmacist in the drug distribution system is to review orders ensuring correct medication, correct dose, correct route, drug interactions, allergy review and review of medication in light of laboratory information. AcuDose in patient profile dispense mode allow only pharmacy approved orders to be dispensed thereby decreasing risk to the patient. The MSI have rolled out AcuDose in night cupboard locations (site specific access to medications when pharmacy is closed), emergency and critical care areas as well as a pilot in-patient unit to date. AcuDose implementation will continue in additional clinical areas through 2008.

4. cMAR, BMV, eMAR, CPOE - 26% of medication errors occur during the transcribing phase. The MSI team is currently in the research of phase of computerized medication administration record (cMAR) for future implementation under this initiative. CMAR will lead the way for bedside medication verification (BMV), electronic medication administration record (eMAR) and computerized provider order entry (CPOE).

Submitted by: Cheryl Szabo, MSI Initiative Lead

Medication Room Before Accudose  Medication Room after Accudose
Appendix 9 - Allergy Protocol

Background
The Allergy and Alert protocol was the result of over 5 years of work by a cross-functional group, and linked to the Armband initiative as a means to further enhance patient safety and establish consistent practices across sites of HHS. Although it was created as the procedure for inpatient populations, it was also implemented in a few outpatient areas such as SDS, HIU and L&D.

Aim:
To decrease the number of errors associated with patient allergy identification

Goals
The prime objective of implementing the allergy/alert protocol was to promote patient safety by:
- Requiring standard procedures and practices across all sites of HHS, to accurately identify patients
- Using computer entries & standard practices to reduce the risk of missing allergy information
This would be accomplished by:
- Enabling other departments such as Pharmacy & Nutrition to see information as soon as it’s entered into Meditech, thereby reducing communication delays
- Allowing automatic recall of information for subsequent visits, to support continuity of care, save time, and reduce repetitive documentation
- Requiring verification of allergies by a Health Care Professional with clinical expertise
- Promoting future communication and common language with other hospitals and our LHIN groups who also use Meditech
- Moving towards other online electronic documentation and technology that will enable automated medication dispensing (AcuDose), barcode scanning for med administration, and eventually electronic medication profiles
- Enabling verification of patient identity using bar code scanning to avoid potential errors
- Streamlining the appearance of hardcopy forms and computer screens to match to decrease chance of error of transcription

Progress to Date
The original Allergy & Alert protocol required completion of a hardcopy form, each time a patient was admitted. Education about the new protocol began in April 2006. Valuable feedback from frontline staff at these sessions resulted in the development of different processes and forms to reduce repetitive documentation, and enable more efficient online recall of information. The revised process was implemented in June 2006. Since that time, course corrections and process changes have been made on an ongoing basis to continue to streamline procedures in response to feedback.

The size and complexity of our organization and variation of practices across diverse populations resulted in unanticipated issues - some resulting from the inability to pilot the IT processes prior to implementation, and the need to require some outpatient areas to utilize inpatient processes.

Audits were also done to validate compliance with the protocol following implementation. Some of the non-compliance may be the result of misinterpretation of audit criteria, or reflect the inability of outpatient areas to implement inpatient processes. The audit tool has
been revised and audits by only inpatient units will be completed and analyzed using the new criteria.

As a result of ongoing course corrections, in an effort to streamline the process, the decision was made in April 2007 in consultation with stakeholders, MAC and PAC to discontinue the recording of Alerts, to avoid potential incomplete or inconsistent lists being created.

Some additional outpatient areas will continue to implement the inpatient protocol. An analysis of current outpatient practice and issues will be completed, and those areas considered exceptions - eg. due to frequency or volume of visits - will be identified, and revisions made to the protocol to clearly define their process.

Submitted by Sheila Knight Initiative Lead
Appendix 10 – Clinical Equipment and Environment Safety Working Group

A medical device sub-committee of the PSST, co-chaired by the manager of Biomedical Technology and an assigned risk management specialist, deals with device related occurrences (adverse events). Activities include investigating adverse events involving equipment, interviewing staff, developing strategies, internal and external notification, alert and recall tracking, root cause analysis, database and article searches, and risk management. A database was created for this purpose and is used to track progress on the resolution of each event and the prevention of recurrence.

Examples of occurrences examined by the devices group include the investigation of an over-infusion of Heparin due to crossed IV lines. This event required the review of the occurrence report and subsequent interview with the clinical staff. The Biomed representatives interviewed the staff using a non-punitive approach and resulted in effective dialogue regarding the current system. Contributing factors were cited by the staff and allowed the Biomed staff to make a recommendation to the devices group. Resources were allocated for the project and are now being used to deploy in-line pole hangers to make cross channel error less likely.

Another initiative came in response to an adverse event near miss, which occurred in the intensive care units at 2 different sites. Due to a product change, clinical staff had difficulty promptly treating patients with esophageal tamponade. In each case the clinical staff sought the immediate assistance of Biomedical Technology. They had to rig something up to connect a Blakemore tube to an inflation device. This simple problem could have lead to a disastrous outcome if it were not for the quick thinking of the clinical and biomedical personnel. This resulted in a corporate initiative submitted by the devices group. It dealt with product substitutions pertaining to life-saving medical devices.

Problems that put patients at risk also involve low-tech everyday devices and apparatus. One example is the use of an oral swab for dental/oral hygiene. There have been reports from within our organization that sponge tips have separated from oral swab applicator sticks. Although not a sentinel event at our hospital, this kind of occurrence has been known to asphyxiate patients at other institutions. Nevertheless, we still carried out due diligence and reported our experience with peers, agencies, and government in order to quicken the product improvement process which did occur.

In addition to the above, several other incidents have occurred involving medical devices (see Table 1) at HHS. These events are being tracked for follow up and subsequent prevention of recurrence. Over 2005 and 2006, the patient safety devices group has entered and tracked over 40 device-related occurrences. 2006 had seen an increase of almost 100% on reporting of adverse events related to equipment. Fortunately, events in the serious outcome categories remain at zero. In early 2007 we were up to 48 device-related occurrences on our database.
Examples of tracked device-related occurrences:

<table>
<thead>
<tr>
<th>Category</th>
<th>Device</th>
<th>Problem</th>
<th>Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process</td>
<td>Esophageal Tamponade</td>
<td>Cuff inoperable due to correct adapter not being available</td>
<td>Product Substitution Process developed for life-saving products</td>
</tr>
<tr>
<td>Process</td>
<td>Automatic Tourniquet</td>
<td>Device failed to inflate</td>
<td>Attached package of O-rings to all devices for quick replacement when needed</td>
</tr>
<tr>
<td>Process</td>
<td>Code Cart Defib</td>
<td>Battery not charging because not plugged in</td>
<td>Battery charging added to checklist</td>
</tr>
<tr>
<td>Design - Usability</td>
<td>Ventilator</td>
<td>Power could not be switched back on</td>
<td>Working with vendor to change rear mains switch cover</td>
</tr>
<tr>
<td>Design - Usability</td>
<td>Gas Machine</td>
<td>Patient circuit found connected to absorber mount pivot</td>
<td>Reported to vendor and agencies, modified all carts to prevent misconnection</td>
</tr>
<tr>
<td>Design - Usability</td>
<td>Infusion Pump</td>
<td>Mistakenly interchanged lines</td>
<td>Replace double-loop IV pole hangers with ‘rake’ style in-line 8 hook hanger for better management of IV lines</td>
</tr>
<tr>
<td>Design – Off-label Use</td>
<td>Forced Air Warming Units</td>
<td>Used without blanket attached</td>
<td>Awareness Program, Communication</td>
</tr>
<tr>
<td>Design - Technical</td>
<td>Ventilator</td>
<td>Detachable power cord became detached</td>
<td>Notified vendor and agencies, added clasp device on all ventilator receptacles</td>
</tr>
<tr>
<td>Defective Product</td>
<td>Cardiac Output Set</td>
<td>Draws air during load sequence, faulty check-valve</td>
<td>Repeated events led to change in vendor</td>
</tr>
<tr>
<td>Defective Product</td>
<td>Oral Swab (Toothette)</td>
<td>Sponge tip comes off and lodges in throat</td>
<td>Reported to vendor and agencies, resulted in swift product improvement</td>
</tr>
<tr>
<td>Categorization Pending</td>
<td>Cardiac Ablation Catheter</td>
<td>Became stuck in left atrium, difficult to remove</td>
<td>Investigation in-progress</td>
</tr>
<tr>
<td>Categorization Pending</td>
<td>Radial Artery Catheter</td>
<td>Became twisted and kinked in-situ</td>
<td>Investigation in-progress</td>
</tr>
<tr>
<td>Categorization Pending</td>
<td>Central Venous Line Guide Wire</td>
<td>Became unwound in-situ</td>
<td>Investigation in-progress</td>
</tr>
<tr>
<td>Categorization Pending</td>
<td>Aneurysm Coil</td>
<td>Became frayed during insertion</td>
<td>Investigation in-progress</td>
</tr>
</tbody>
</table>

Submitted by Mike Capuano - Group Chair
Appendix 11 - Hamilton Health Sciences Fall Prevention Strategy

Background
In 2006, HHS was designated as an RNAO Best Practice Spotlight Organization (BPSO). The three-year, Ministry of Health and Long-Term Care of Ontario (MOHLTC) funded initiative includes the implementation of two RNAO Best Practice Guidelines: Assessment and Prevention of Pressure Ulcers and Prevention of Falls and Fall Injuries in Older Adults. Fifteen medical-surgical and rehabilitation units at 4 hospital sites are designated BPSO units. As a 2007-2008 corporate initiative, the second year of the RNAO project has been strategically designed to meet both our commitment to the RNAO and MOHLTC and the accreditation required organizational practice to implement and evaluate a fall prevention strategy to minimize the impact of patient falls (ROP 22). In June 2007, a group made up of clinical experts in elder care and education, clinical management, pharmacy and the RNAO BPSO leadership team struck a working group to develop a fall prevention strategy to provide clinical staff with 1) a fall prevention guideline/policy, 2) educational resources (inservice and e-learning), and 3) fall prevention, risk assessment, intervention and documentation resources and recommendations.

Guideline/Policy
A Fall Prevention Guideline/Policy is currently in development. The guideline will provide staff with evidence-based expectations for fall risk assessment, intervention and documentation. The target date for completion and approval of the guideline and insertion into the policy library is January 31, 2007.

Educational Resources
A clinical staff inservice resource has been developed based on 1) previous work completed by several HHS acute medicine units, 2) a review of the evidence, and 3) educational capacity (staff attendance). An e-learning package is in development to ensure that all staff has the opportunity to participate. Both educational tools will be available in January, 2008. A milestone target of 50% of clinical staff attendance at a 1-hour inservice or e-learning session by March 30, 2008 has been identified. A resource for clinical pharmacists to inform medication review and staff education post patient fall is in development. Plans are in place to ensure that fall prevention content is incorporated into annual clinical practice reviews and orientation of new staff. Additionally, existing patient and family educational materials are being revised to reflect current evidence and available resources.

Fall Risk Assessment and Documentation
The evidence reviewed and reports from our provincial BPSO partners indicated that valid and reliable fall risk assessment tools that can be applied to multiple acute care populations are not available. A three-point risk assessment tool has been adopted that is premised on the evidence that indicates that the best predictor of a patient fall is a previous fall or cognitive deficit. This tool is included in the Health Outcomes for Better Information and Care (HOBIC) data set being piloted at HHS for the MOHLTC and incorporated into our electronic documentation. Communication of fall risk and intervention will be facilitated by fall risk signage to be placed at each bedside and on the ‘at risk’ patient’s chart. This signage has been developed for the HHS strategy by Stryker Canada. All Stryker beds have exit alarms systems to inform staff of risk. These exit alarms are in the process of being connected to the call bell monitoring systems at nursing stations.
Fall Prevention Strategy Launch

On January 7, 2008 the HHS fall prevention strategy will be launched at an event titled “Don’t Fall for It”. The two-hour event will include a presentation at the Hamilton General Site by HHS physician Dr. A. Papaionnou, an internationally recognized expert in fall risk assessment and elder care. A “room of horrors” will test attending staff on their awareness of environmental fall risk. Stryker Canada will demonstrate the exit alarm functions of their beds. Clinical staff will be facilitated to drop in throughout the event that will be teleconferenced to the Henderson and MUMC sites. Refreshments and the room and bed setups will be provided at all three sites. The strategy launch will be jointly sponsored: Fall Prevention Working Group, Nursing Education and Development Committee of the Nursing Advisory Council, and Stryker Canada.

RNAO Spotlight Organization Implementing Units

In addition to participating in the educational session and utilization of resources and tools previously described, 15 RNAO BPGSO units (6 acute medicine, 7 surgical and 2 rehabilitation) will replicate the unit and site-based processes utilized in the implementation of the pressure ulcer guideline in 2006-2007 to implement the RNAO Prevention of Falls and Fall Injuries in Older Adults BPG. The processes include the identification of unit-based Champions who are trained to provide leadership in fall prevention including participating in environmental risk assessments on their units and monitoring and evaluating outcomes. Monitoring of fall risk assessment compliance and fall rates and severity obtained through chart audit and analysis of fall occurrence reporting data is included in these processes. Expansion to other clinical units will be encouraged and supported.

Summary

In summary, a HHS fall prevention strategy will be launched in January 2008 to heighten staff awareness, provide educational resources and implement policy to reduce patient fall risk, incidence and severity. The strategy additionally meets our commitments to the RNAO BPG SO and accreditation ROP and reflects opportunities for improvement identified through quality monitoring.

Submitted By: Sandra Ireland, Nursing Practice Chief
Appendix 12 - Implementation of the Risk Assessment & Prevention of Pressure Ulcer Best Practice Guidelines

Background

In 2006, HHS was designated as an RNAO Best Practice Spotlight Organization (BPSO). The three-year, Ministry of Health and Long-Term Care of Ontario (MOHLTC) funded initiative includes the implementation of two RNAO Best Practice Guidelines: Assessment and Prevention of Pressure Ulcers and Prevention of Falls and Fall Injuries in Older Adults. Fifteen medical-surgical and rehabilitation units at 4 hospital sites are designated BPSO units. As a 2006-2007 corporate initiative, the first year of the RNAO project focused on the implementation and evaluation of the assessment and prevention of pressure ulcer to reduce the incidence of pressure ulcer in the adult medical-surgical and rehabilitation population.

In September of 2006, the HHS RNAO BPSO Steering Committee was convened to provide leadership and corporate support for the implementation and evaluation of the BPG. Site Implementation teams (SIT) were formed to provide leadership and to support the activities of the Unit Based teams. Unit Based teams are responsible to lead and support the implementation of the Best Practice Guidelines on the clinical unit (see the attached HHS RNAO BPG Spotlight Organization Organizational Chart).

Front line staff as Champions and the Advanced Clinical Practice Fellowship (ACPF) has played a key leadership role as change agents and role models for the uptake of the recommendations into clinical practice. 52 nurses and allied health staff have attended the RNAO Champions Network workshop and 3 staff has received an ACPF from the RNAO.

Aim

The overall goal of the BPSO initiative is to improve patient outcomes through a systematic approach in the identification and assessment of patient at risk for developing a pressure ulcer, and the implementation of recommendations to prevent pressure ulcer. The BPG will also encourage an evidence-based culture, and enrich the practice environment of nurses and other health care providers. Through the implementation of the recommendations, staff will be confident not only in the assessment and prevention of pressure ulcers, but also in the management of Stage I and Stage II pressure ulcers. We aim to demonstrate a 25% reduction of the pressure ulcer incidence over 3-years from baseline on designated BPSO units.

Progress

We have much to celebrate at the completion of our first year. The BPSO initiative is one of the Corporate Initiatives for 2007-2008. The support structures are in place for the implementation of the BPG (Steering Committee, Site and Unit Based teams). Unit based Practice Councils are structured to support the implementation of the BPG and to meet identified gaps in clinical processes. Support for ongoing education to maximize the role of the Champions as content experts in wound assessment and management through a partnership with ConvaTec is occurring. Revised Braden Scale tool and the inclusion of the intervention guide to support clinical practice was completed in August of 2007. Clinical Managers continue to support the role of Champions by providing opportunity for staff to attend the Champions Network workshops. HHS continues to provide clinical mentors and support for staff application for the ACPF through the RNAO.

In April of 2007, HHS hosted its first Champions Open House. Champions from all sites participated in the showcasing of their accomplishments in the implementation of the BPG. McMaster Research Practicum students have been integral to the BPG initiative. Students are engaged in the development of audit tools, conducting baseline chart audits on the use of the risk assessment tool, conducting staff focus groups to assess staff perspective on the readiness of the clinical unit to implement the BPG.

In October 2007, HHS conducted their bi-annual Prevalence and Incidence audit: results will not be available until Feb. 2008. In addition to the designated BPSO units, we have additional units implementing the BPG. Three additional BPG's are in planning phase for pilot implementation in 2008.
In summary, the implementation of the Risk Assessment and Prevention of Pressure Ulcers Best Practice Guideline, has heightened staff awareness of their role in the assessment, prevention, and management of Stage I and Stage II pressure ulcers. The quality monitoring results from the Prevalence and Incidence audit will inform the next stages for the integration of the pressure ulcer BPG as we move toward the sustainability phase.

**FIGURE 1: HHS RNAO BPG SPOTLIGHT ORGANIZATION**

**Research Subcommittee**
- Research Liaison (Chair)
- RNAO Nursing Best Practice Research Unit
- School of Nursing, Faculty

**Spotlight Steering Committee**
- Project Leader (Chair)
- Chief Nursing Executive
- Clinical Program Director
- Manager Clinical Practice & Ed.
- Project Coordinator HHS
- Project Leader SJHH (Ex officio)
- Recruitment & Retention Consultant
- Chiefs of Nursing Practice (4)
- Skin and Wound Committee Co-Chair
- APN Elder Care Specialist
- Clinical Nurse Specialist
- Consultant OE (Ex officio)
- Chief Allied Health
- RNAO Prof Leader
- RPN
- APN Site Leader
- School of Nursing Faculty
- ONA Representative
- Clinical Manager
- BPG Champion
- BPG Fellow
- HOBIC Leader

**Unit Based Teams**
- Nurse Champions
- E&D Clinician
- Clinical Manager
- Patient Safety Triad Members
- Interdisciplinary Team Members
- APN
- Other members as required

**Spotlight Research Liaison**

**Henderson General & Chedoke Implementation Team**
- Nurse Champions (2/Unit)
- Site Leaders (2)
- Chief of Nursing
- Project Coordinator
- Education & Development Clinician (1/Unit)
- Clinical Manager
- Skin & Wound Consultant
- Elder Care Specialist
- Nursing Research Committee Member
- Allied Health
- APN
- Other members as required

**Hamilton General Implementation Team**
- Nurse Champions (2/Unit)
- Site Leaders (2)
- Chief of Nursing
- Project Coordinator
- Education & Development Clinician (1/Unit)
- Clinical Manager
- Skin & Wound Consultant
- Elder Care Specialist
- Nursing Research Committee Member
- Allied Health
- APN
- Other members as required

**McMaster Implementation Team**
- Nurse Champions (2/Unit)
- Site Leaders (2)
- Chief of Nursing
- Project Coordinator
- Education & Development Clinician (1/Unit)
- Clinical Manager
- Skin & Wound Consultant
- Elder Care Specialist
- Nursing Research Committee Member
- Allied Health
- APN
- Other members as required

Submitted By:  Bev Morgan, Initiative Lead
Appendix 13 - Caring For Patients With Heart Failure: A Paradigm Shift

Project Description
In 2005/2006 the MOHLTC introduced the Hospital Accountability Planning Submission (HAPS) and the Hospital Accountability Agreement (HAA) to encourage a more efficient and effective use of ministry resources in the hospital sector. At this time, a comprehensive review was conducted and 13 Case Mix Groups (CMGs) were identified as having opportunity for efficiencies at Hamilton Health Sciences (HHS). Heart Failure (HF), was one of the CMGs identified as having opportunities. The HHS board of directors approved and submitted a HAPS and HAA to the MOHLTC committing to agreed upon performance targets for HF, CMG 222. This was the beginning of our journey towards developing an evidence-based model of care for HF patients living in Hamilton, as well as ensuring a seamless continuum across health care sectors.

HF reduces patients’ quality of life, exercise tolerance and survival. Patients experience acute, recurrent episodes of decompensation, leading to repeated hospitalization. The incidence of HF is age dependent: 1 to 5 per 1,000 each year in the total population, to as high as 30 to 40 per 1,000 each year in people greater than 75 years of age. Approximately 40% of patients are readmitted within 1 year of their first hospitalization for HF. In 2001, Canadians spent 1.4 million days in hospital for HF.

Health Care Professionals have tried to care for HF patients in a health care system that is not set-up to deal with chronic illness. A paradigm shift was required to change a health care system that focused on acute and episodic care to a system that integrates chronic illness management with health promotion and disease prevention, as well as acute and episodic care. Patients living with HF must be involved in the management of their illness because the majority of chronic illness management is done by the patient/family/caregiver. Re-alignment of care must include education and skills management for self-efficacy which will ultimately enable the patient/family/caregiver to participate in the management of their chronic illness.

Chronic Disease Management Models (CDMM) have been shown to be effective in improving the quality of care for patients living with chronic illnesses such as HF. In 2005, Roccaforte et al conducted a meta-analysis of the effectiveness of disease management programs and reported a 14% reduction in the rates of all-cause hospital re-admissions, a 31% reduction in total number of HF-related (re)hospitalizations and a 16% risk reduction in total mortality. A systematic review of multidisciplinary strategies for the management of HF conducted by McAlister et al (2006), reported a 27% reduction in HF hospitalization rates and a 43% reduction in total number of HF hospitalizations.

The World Health Organization (2003) indicates that key elements of a CDMM include: comprehensive care (multiprofessional, multidisciplinary, acute care, prevention and health promotion); integrated care, care continuum, coordination of the different components; population oriented (defined by a specific condition); active patient management tools (health education, empowerment, self-care); evidence-based guidelines, protocols, care pathways; information technology, system solutions; and continuous quality improvement.
The following 3 interdisciplinary, cross sectorial teams were formed to review current practices, identify gaps in care, and develop recommendations to close the gaps: i.) Inpatient ii.) Heart Function Clinic (outpatient) and iii.) Community Partners. The teams were supported by the manager and facilitators of the HHS Quality, Patient Safety, Clinical Resource Management Program, as well as decision support analysts.

Following identification of gaps in care, the 3 teams utilized the most current evidence and/or expert opinion to develop a Heart Failure Disease Management Model (Appendix 1). The inpatient team developed the following: Standardized pre-printed admission orders; Interdisciplinary HF Care Path; Discharge Summary; Patient Passport; Patient HF Care Path; and Patient education materials (e.g. signs and symptoms of worsening HF and a weight diary). Standardization of clinical tools such as Pre-Printed Admission Orders and Care Paths assists novice to expert health care professionals to provide evidence based care which ultimately leads to safe, quality patient care within the organization.

In 1999, HHS established a Heart Function Clinic (HFC) where patients are cared for by cardiologists and nurse clinicians whose expertise is HF. Optimal treatment plans for HF patients cannot be achieved during a 5 to 7 day hospitalization because medications need to be titrated and target doses reached. Equally important, HF patients require intensive education and support in order to become involved in managing their own care and this cannot be achieved during an acute episode of HF. In order to meet the growing demands of this population, additional resources were provided to ensure that patients leaving the hospital, as well as living in the community have timely access to the HFC. In addition, the HFC team developed a HF Care Path which is supported by the most up-do-date evidence. The HFC Care Path is a continuum of the hospital’s Care Path.

The Community Partners team consisted of hospital staff (multidisciplinary) and physicians, the HHS Chief of Family Medicine, as well as a Director and Case Manager from CCAC. Family Medicine identified the need for more timely communication for patients leaving hospital and this led to the development of a Discharge Summary which is faxed on the day of discharge. CCAC initiated a pilot for HF patients which consists of 5 to 7 nursing visits over the first 30 days post-discharge. A HF Care Path was developed for the nurses working with HF patients in the community and this builds on the patient and caregiver education started in the hospital (e.g. documenting daily weights, early identification of worsening HF).

**Evaluation**

The HHS Quality, Patient Safety, Clinical Resource Management Program has completed 5 audits since the implementation of the HF Disease Management Model in 2006. This has been supplemented by analysis of utilization data from Hamilton Health Sciences inpatient and clinic sources (CIHI DAD, Communitywide scheduling, Heart Function clinic database) and from CCAC. A comprehensive evaluation framework, as detailed in Appendix 2, has been developed to include:

- Outcome indicator: acute length of stay;
- Balancing measures: readmission rates and intervals;
• Process indicators: implementation of the preprinted orders and clinical pathway (from which we can evaluate quality indicators like daily weights and patient education as identified in the Canadian Cardiovascular Society’s Quality Indicators for Heart Failure);

• Monitoring indicators: Heart Function Clinic access and wait times, and the number of referrals and visits through the CCAC pilot.

The HF Steering Committee is accountable for analyzing the data and making course corrections where necessary. An improvement has been seen in the measurement of daily weights, patient education, readmissions, and length of stay.

Sustainability

The Chronic Disease Management Model incorporated elements of sustainability into the development of its foundational tools and processes. Wherever possible, critical elements and decision points have been embedded in the preprinted orders and clinical pathways. With the introduction of the Emergency Department Information System, and pending electronic documentation modules, we anticipate opportunities to use technology to trigger action.

Moving forward, there is an ongoing sustainability and evaluation plan in place, with continued support from the Steering Committee to monitor indicators and make recommendations for continued improvement.

Conclusion

The HF Disease Management Model incorporates the best from research and practice and has provided a foundation for integrated practice across the health care sectors. While it is early, the HF Disease Management Model appears to be facilitating positive health care outcomes for HF patients living in Hamilton.

Outcome Indicator: Length of Stay

We compared the length of stay using CIHI DAD data with exclusions as for conservable day methodology, then examined on a case-by-case basis the variance between actual acute length of stay and the expected length of stay (ELOS).

Overall 471 of 691 (68%) cases had an acute length of stay less than or equal to the ELOS, with distribution by site as follows:

• General Site: 244 of 331 (74%)
• Henderson Site: 99 of 174 (57%)
• McMaster Site: 128 of 186 (69%)

These results mirror the progressive implementation by site of the Heart Failure Disease Management Model, where we have seen the greatest progress at the General Site, followed by the McMaster and Henderson Sites.
Submitted by: Kelly O’Halloran, Advanced Practice Nurse (Initiative Lead)

**Balancing Measures: Readmission Rates and Intervals**

Despite small numbers over time, we have continued to measure the readmission rate for patients discharged with CMG 222 Heart Failure as a leading indicator that might suggest overly aggressive discharge practices and our need to adjust the plan of care either on an inpatient basis or following discharge (for example, increased readmission might suggest the need for additional clinic or in home supports).

Given the chronic nature of heart failure, we expect readmissions to occur. With the introduction of patient education aimed at improving the patient’s ability to manage his illness, supported by CCAC through additional visits to reinforce this teaching and additional clinic resources to provide this expertise, we hope to extend the time between readmissions. Consequently, we would expect to see the proportion of readmissions within 7 days decreasing, while that in 8-28 days and > 28 days is increasing.
**Process Indicators:**

Process indicators were defined to measure the implementation of the Heart Failure Disease Management Model. These indicators have been measured through three 3-week audits (February 2007, May 2007, August 2007) and two 1-day snapshot reviews (March 2007, April 2007).

August 2007 audit results are summarized as follows:

**Preprinted Orders:**
- Overall, 23 of 40 (58%) patients appropriate for the cardiology preprinted orders had orders completed.
  - 16 of 18 (89%) from the General Site,
  - 5 of 11 (45%) from the McMaster Site
  - 2 of 11 (18%) from the Henderson Site

**Clinical Pathway:**
- The clinical pathway is embedded in the preprinted orders, and as such, initiation is contingent upon their completion.
- 16 of 22 (73%) patients had preprinted orders and a clinical pathway at least partially completed. For 1 patient, orders were completed, but the patient was admitted to CCU and not appropriate to follow the pathway.
- We saw improvement in the completion of the pathway between the May and August audits. Outcomes were completed in 67% patient days in August, compared to 49% in May 2007.

**Daily Weights:**
- One of the original EFFECT Study quality indicators was daily monitoring of weight for patients with Heart Failure. Our 2005 baseline measure, based on this study, was 15%, with a target of 90%.
- When we compared the monitoring of daily weights with the audit, we found that weights were completed in 32 of 59 (54%) of patient days for patients on the pathway. By comparison, weights were completed in 17 of 77 (22%) of patient days for those not on the pathway. In addition to the lower rates of daily weights completed for patients not on the clinical pathway, we found that the documentation, when it was completed, was located in different areas of the chart, making it less likely to be located by the team.

**Patient Education:**
- A comprehensive patient education package has been developed as part of the development of the Heart Failure Disease Management Model. This includes four key elements, which are embedded in the clinical pathway: patient pathway, CHF booklet, patient reminder and weight diary.
- The EFFECT Study advised for counseling on at least one topic for 90% patients. With a baseline (2005) of 74%, our target was 86% patients to receive education at least once. To achieve this, patient education was embedded in the clinical pathway.
- In the August audit, 12 of 14 (86%) patients received each component of the education package at least once (day 1-5). This is an improvement from the May audit, when 12 of 17 (70.6%) patients were documented to have received education at least once. The rate of introduction of the weight diary has been constant at 50% patients for the past two audits (May and August 2007). We were unable to locate documentation of any education for patients who were not on the pathway.
Monitoring Indicators: Heart Function Clinic Access and Wait Times

- To ensure timely access to the outpatient component of care, we have monitored the Heart Function Clinic volumes.
- The average number of monthly visits has, predictably, increased with the introduction of this initiative. The average number of monthly visits:
  - 2005-2006: 119.2
  - 2006-2007: 134.0
  - 2007-2008 YTD: 158.0 (April – July)

Heart Function Clinic Wait Times:

- A total of 91 of 174 (52.3%) patients were referred with a specific time frame requested (within 7 days, 14 days, 21 days, 30 days, 60 days). Of these patients, 40 of 91 (44%) were seen within the requested time. For the remaining 83 of 174 (47%) patients, no time interval was specified so we were unable to determine whether the time from referral to visit was appropriate.
- With increasing visits, we are seeing increases in the average wait time from referral to the first scheduled appointment, from 29 days in January to 71 days in July 2007. Initially we had introduced both admission and discharge criteria for the clinic, based on New York Heart Association Classification. Additional evaluation is required to understand whether there are opportunities to optimize clinic utilization or whether additional capacity must be added.
CCAC Referrals and Visits

- In order to support our HF patients, CCAC initiated a pilot to provide 5 to 7 nursing visits to every patient discharged from HHS with the primary diagnosis of HF. The intent of this pilot was to augment the number of visits to reinforce and continue with the education started in hospital (e.g. weights, side effects of medications, signs & symptoms of worsening HF).
- Referral to CCAC is embedded in the clinical pathway. Consequently, the number and source (by site) of referrals reflects the sites where implementation is more advanced.
- In total, there have been 44 referrals and 213 visits.
Appendix 14- Patient Safety Triads and Networks

Background:

In 2005, Hamilton Health Sciences (HHS) developed a framework to foster local accountability for patient safety. This framework was called Patient Safety Triads and Networks. HHS is a four-site 1000-bed regional tertiary care facility, which is comprised of five hospitals and a cancer centre and 10,000 staff. This framework provided an operational strategy to engage, and develop patient safety expertise and a framework for local accountability across a very large complex organization.

Patient Safety Triads are unit or area based champions for patient safety. In clinical areas the triad members most often include a manager, a frontline staff member and a physician. In service areas, membership includes a manager, a supervisor/leader and a front line staff member. Although, initially the structure was based on a three person framework (hence the name triads) the diversity of the many areas required customization of this structure and so some areas have up to nine patient safety champions in their areas. Two key considerations were suggested when choosing triad members: 1) to ensure a front line staff member, who directly provided care to patients or service to support patient care, and 2) to select opinion leaders who would enhance the strength of their team. These triad members are identified as the “local point people” for patient safety, and their role is to develop an expertise in safety concepts, identify and manage safety issues, assist with the spread of organizational patient safety initiatives, provide a connection between front line and the senior team and to be a role model for patient safety.

To support these champions to become experts in patient safety and to continue to learn and build on the work within the organization, the patient safety networks were developed. These networks consist of multidisciplinary, multi-site triad members who come together every two months to share successful initiatives, obtain ideas and support, to collaborate for solutions, and to enhance their patient safety and quality improvement expertise. As well, HHS case studies are presented to assess system and human factor issues that led to adverse events and enhance organizational learning. Risk management, pharmacy and infection control partner with patient safety to provide updates at each meeting related to their areas of patient safety. Each meeting literature related to the topic of learning for that session is provided. This is then part of a growing library of references for each area. Triad members are expected to share their learning and information within their areas. Three networks are in existence, which was necessary to accommodate the large triad member numbers and to allow for manageable size groups for networking and group work. The networks are supported and coordinated by the Patient Safety Specialists.

Patient safety can be difficult and challenging work. Patient Safety Triads offer a framework to engage front line staff and managers in the commitment to patient safety by providing a clear strategy to address patient safety issues at the local level. They support the four cornerstones of the HHS Patient Safety Model for a balanced approach to patient safety and include: creating a culture of patient safety and accountability, providing education and professional development, establishing communication and information structures and ensuring measurement and improvement. The networks provide resources to support these champions and offer an opportunity to share successes and struggles, to learn, and to generate solutions with colleagues in a safe environment.
Project aims / expected outcome:
- The generate local patient safety champions that represent all clinical and non clinical units / areas at HHS
- To provide a framework for a collaborative teamwork approach to patient safety
- To generate local level improvement projects related to patient safety which can be prioritized and coordinated at the local level
- To enhance patient safety culture and improve patient safety

Progress to Date:

At present there are almost 400 patient safety triad members at HHS from clinical and non-clinical areas. This number has grown steadily from less than 100 members since its inception in January 2005. An informal evaluation “pulse check” was conducted after the first year as small working group discussions at the network meetings. Overall the message was that the triad members felt valued, excited and committed to their work. They also valued their network meetings and felt that the multi-site, multidisciplinary approach had created a cohesive and collaborative approach to patient safety. Monthly evaluations of the meetings continue to be rated as good to excellent.

Project aims / expected outcomes

In November of 2006, another pulse check was conducted to assess the structure of the network in terms of strengths and areas for improvement to be addressed. Sixty surveys were received back from a possible total of 300 (20%). Of the respondents received, 75% were from clinical areas, and 25% were from service areas. 93% of triad members had initiated more than one patient safety project in the last year (36% had initiated more than three projects) and 80% had completed patient safety projects in the last year. As well 94% felt their immediate supervisor supported them in their triad role.

As part of the network meetings, triads share their improvement work to support a collaborative approach of sharing and learning from the work of different areas. Some of the projects shared in the last year include:

- Preventing pediatric patient strangulation – This project was undertaken by the pediatric triads following national reports of pediatric strangulation with intravenous tubing. The project involved the creation of a positioning stabilizer for Intravenous or wired devices and this device has now sparked interest with the triads serving the geriatric population.
- Project Eagle Eye – This project created a strategy to encourage and increase reporting of adverse events and near misses. Strategies included an easier reporting process, rewards for reporting and a robust feedback loop related to occurrences and has resulted in a significant increase in reporting in the six-month period following implementation.
- Improving communication for the care of Rehabilitation patients – This project addressed the high-risk area of failed communication of care plans in the rehabilitation units. An internal audit process was developed to monitor accurate communication of care plans by all health professionals and has showed steady improvement in accuracy and completeness of patient care plans.
- Labeling of solutions on sterile fields – This project was undertaken in the diagnostic department to address unlabelled solutions on sterile fields. Pre printed sterile labels are now used on all sterile field solutions and this process has been adopted in other areas of HHS following this shared presentation.
- House of Horrors – This project was developed in response to a request to create an innovative and interactive learning process related to patient safety annual review. A simulated patient room with multiple planted patient safety risk issues was created for staff to view, to assist them in identifying risk issues for patients. This was followed by a debriefing discussion that
highlighted new safety protocols and identification of the planted risk issues. This initiative has also spread to different areas of HHS.

In addition, at the annual patient safety symposium, the patient safety triad members are invited to submit poster presentations of their local initiatives to improve patient safety (see Appendix 2). For the last two years approximately 20 posters have been presented and at the 2007 Patient Safety Symposium, multiple triad members provided oral presentations of their work.

Submitted by: Rosanne Zimmerman, Patient Safety Specialist
Appendix 15- Transfer of Accountability- Nursing Shift to Shift: Sustainability Phase

Background:
Transfer of Accountability (TOA) is the process of exchanging clinical information and handing over responsibility for patient care to another health professional. The three components of Nursing Shift-To-Shift TOA include the utilization of face-to-face reporting, written tools for staff nurses and unit leaders, and bedside patient safety checks. All components are supported by unit-specific Nursing Standards.

Purpose and Aim:
Communication of information between healthcare providers is critical to patient safety and continuity of care. According to the Joint Commission on Accreditation of Healthcare Organizations (JCAHO 2003), 70% of all sentinel events are related to breakdowns in communication. The JCAHO’s 2006 National Patient Safety Goals called on hospitals to improve handoff effectiveness. In addition, the 2008 JCAHO Required Organizational Practices (ROP) states that organizations should “employ effective mechanisms for transfer of information at interface points, including shift changes.”

The aim of TOA is to introduce and sustain standardized processes and tools for conducting the shift-to-shift transfer of care, and to improve communication of high-risk situations and relevant clinical information between nurses at shift change.

Progress To Date:
The initiative is currently in the sustainability phase. Audits are being conducted on all units. The year-end measure of success for 2006/07 was met, in that 100% of clinical units were using TOA processes and tools, as well as conducting audits. A total of 1040 observational audits were submitted from February 2006-September 2007. The majority of the time during observational audits, TOA was occurring as intended:
• 96% of the time it occurred face to face
• 69% of the time staff were using a written tool (Tools are to be used when there is significant data to report)
• 92% of the time reporting on the required components
• 85% of the time TOA was documented appropriately and
• 68% of time time the bedside Patient Safety Checklist was completed (on remainder of the units, two nurses on same shift complete the checklist on the beginning of their shift, as per policy)

To date 95 errors and occurrences have been identified, involving armbands, allergies, monitor alarms, and other risk issues (See inside report).

In 2007/08 the sustainability phase of TOA implementation will continue. The current auditing process will continue until the audits demonstrate that all components of TOA are consistently applied over a three-month period. When TOA is sustained for three months in a row, monthly audits will no longer be required. Spot audits will then be conducted quarterly. In the event that two quarterly audits demonstrate non-compliance with TOA, monthly audits will resume.

Submitted by Lesia Kicak and Kim Alvarado (Project Team Leads)
Appendix 16- Physician Handover

In November 2006, the Medical Advisory Committee held a retreat focusing on patient safety related issues. Following discussion of the issues, physician handover was identified as area of focus due to the significant impact of communication on patient safety. As a result, the Physician Handover Working Group (PHWG) was struck in January 2007. The mandate of this group was to review current practices, processes and tools used for physician handover and make recommendations to improve the effectiveness of physician handover at HHS.

SCOPE

The PHWG have defined handover as “patient specific information and accountability that is communicated between healthcare providers to maintain continuity and safety of patient care”. While this definition broadly covers all points of transfer of care (between services, and between levels of care), the PHWG chose to initially focus on handover to covering physicians, both Most Responsible Physician to covering physician and Resident to Resident.

PROCESS

The PHWG completed a needs analysis to identify current practices and issues. This analysis was conducted through individual telephone interviews with physician leaders, focus group sessions with medical, surgical and pediatric residents, and focus group sessions with nursing staff on nine inpatient units.

SUMMARY

Two major issues were identified through the needs analysis. The first issue is the significant amount of variability in handover practices between and within physician departments and divisions. This variability may result in gaps in the handover communication, which are accentuated during off-hours, for off-service patients, and in the smaller sub-specialties without built-in system redundancies.

The second major issue is that care and accountability is not always transferred unambiguously. This may increase the chance of confusion and omissions in care. The current systems for communicating information about physician handover and on-call schedules to clinical units and other health care professionals appear to require refinement.

Based on the needs analysis, eight recommendations were proposed for consideration by the PHWG. The PHWG is in the process of reviewing the recommendations and determining the next steps for action.

Submitted by: Dr. Dick McLean (Project Initiative Lead)