NOTE TO USERS

A PATIENT SAFETY INTERNSHIP PROGAM FOR NURSE LEADERS

By

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A thesis submitted in partial fulfillment of

the requirements for the degree of

MASTER OF ARTS

In

LEADERSHIP AND TRAINING

We accept this thesis as conforming

to the required standard

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ROYAL ROADS UNIVERSITY
August 2004

Your file Votre référence
ISBN: 0-612-94022-5
Our file Notre référence
ISBN: 0-612-94022-5

ABSTRACT

Patient safety is a major international concern with significant cost to patients and the system. Solutions to the problem centre on creating an organizational culture of safety, in which safety becomes imbedded as a core value and top priority. Safety education for clinicians is one component necessary to effect the changes in attitudes and beliefs required for cultural change. At Children's & Women's Health Centre of British Columbia, a safety, quality, and risk management internship program is offered to front-line nurse leaders. This study examined the alignment of the internship program with the current thinking on patient safety and with the needs of clinical staff. Literature review, safety climate survey, and interviews revealed that the internship program is solidly grounded in the literature and a fit with clinical needs. Expansion of the internship program as part of a comprehensive patient safety program would most effectively support a culture of safety.

ACKNOWLEDGEMENTS

"It takes a village…" I want to express my heartfelt thanks and appreciation…

…to Lynda Cranston and the Provincial Health Services Authority for providing financial support and the opportunity for me to attend Royal Roads University.

…to Dr. Doug Cochrane, long-time colleague and project sponsor, for giving me his time, honest feedback, and encouragement.

…to Georgene Miller for her flexibility, support, ideas, and input, and for demonstrating a constant commitment to excellence.

…to my fabulous C&W team--Anne, Sue, Katrina, Kris, Judy, Michelle, Sandy, Laurie, and Kim--for holding the fort and cheering me on.

…to my RRU cohort, especially Mary MacKillop, critical friend extraordinaire, my 'Dream Team' Advisory Group, and my fellow PHSA learners (Pat Gillis, Malcolm Farren, Dan Krefting) for offering friendship and inspiration, and sharing laughter and the occasional anxious moment!

…to Kim Gunning, my faculty advisor, for sharing her wisdom and advice.

…to Nancy Thornton, friend and mentor, for being an example of life-long learning and inspiring me throughout my career.

…to my parents, Elmer and Ada Taylor, for instilling in me the desire to be the best I can be, the belief that I can, and the confidence to try.

…to my children, for keeping life interesting and for making me proud. To my daughter, Sarah Allan, for exemplifying fierce determination, commitment to academic excellence, and balance between work and play. To my son, Ryan Allan, for having the courage to march to the

beat of a different drum, for standing up for what you believe in, and for being a leader in your own life.

Finally, and most importantly,

…to my husband, Tom Wahl, for *everything*.

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"We envision a system of care in which those who give care can boast about their work, and those who receive care can feel total trust and confidence in the care they are receiving" (Berwick, cited in National Steering Committee on Patient Safety, 2002, p. vi).

The Problem

The Research Question

It is twenty-five years since I became a Registered Nurse. Looking back, I see the changes that have taken place within the health care system since 1979 and I am struck by how much more complex the environment is now than when I first began. I have experienced health care as a bedside nurse, a nurse leader, a family member, and a consumer, in addition to my current role within the area of quality, safety, and risk management. From all of these perspectives, I have wondered what might be done to help make health care safer for patients and less prone to error for its providers. I am not alone in asking this question.

In the last decade, the issue of patient safety has garnered global attention and caused grave concern within the health care sector and beyond. Patient safety has become a major focus of accrediting bodies and of both the professional and lay media. Reports from around the world have suggested an alarming incidence of medical errors and *adverse events*--unintended patient injuries or complications caused by health care--resulting in disability and death for tens of thousands of people and significant costs to the health care system and society.

In response to this high profile issue, new organizations have emerged from both the private and not-for-profit sectors, offering a wide variety of potential solutions to the problem. Hospitals and health care agencies are also attempting to address patient safety concerns in a number of different ways. Borrowing from lessons learned in other complex, high-risk sectors,

the thinking about safety and adverse events has expanded beyond the individual health care provider to include organizational culture. The concept of a *culture of safety*, one where safety is part of the very fabric of the organization, has been widely touted as the most effective means to a safer system. A culture of safety requires visible leadership commitment, efficient methods to quantify and report on problems, integrated strategies to support staff, a non-punitive approach to error management, effective teamwork, and a strong desire to learn and improve. All of these components are critical parts of the solution and support a much-needed systems approach to the problem.

At Children's and Women's Health Centre of British Columbia (C&W), an internship program has been developed and implemented by the Department of Quality, Safety and Risk Management (QS&RM). Aimed at front-line nurse leaders, the internship program offers them the opportunity to engage in a comprehensive learning experience with the goal of helping them promote patient safety and quality improvement within their clinical areas. The internship program was developed by staff within the QS&RM Department and continues to evolve with feedback from the learners. With eight interns now having completed the internship program, it is the ideal time to look beyond the participants and examine the validity of its intent, content, and approach in relation to internal and external factors. The research question is: **Is the internship program aligned with recommended patient safety strategies and the needs and priorities of health care providers?**

The Extent and Significance of the Problem

"Although the populations of Western societies might enjoy all the benefits of affluence and modern medical care, they also run a significant risk as patients" (Davis, 2004, p. 1688-1689). Specifically, patients are at risk of suffering an adverse event. In Canada, this risk is

thought to affect approximately 7.5% of all patients admitted to Canadian hospitals, based on a recent study by Baker et al. (2004). The good news is that this statistic means that the vast majority of hospital patients are cared for without incident; however, the problem of adverse events is troubling due to the large number of people who come into contact with the health care system each year. In other words, an overall incidence rate of 7.5% means that about 185,000 Canadians are affected by adverse events each year (Baker et al.). As Leape explained it, "In the aggregate, mistakes add up….Even with a low injury rate, millions of people are getting hurt" (cited in Crane, 2003, p. 30).

Looking at patient safety beyond the Canadian experience further demonstrates the seriousness of the problem. In the United States, the Institute of Medicine report, *"To Err is Human"* (Kohn, Corrigan, & Donaldson, 2000), stated that more people die as a result of medication errors alone than motor vehicle accidents, breast cancer or Acquired Immune Deficiency Syndrome (AIDS). When combined with deaths due to hospital-acquired infections and adverse drug reactions, deaths in hospital caused by the health care system have been estimated to be the third leading cause of death in the United States (Starfield, 2000). Or, to use Leape's (1994) analogy, the number of deaths from iatrogenic injury in the United States is "the equivalent of three jumbo-jet crashes every two days" (p. 1851). Researchers from Australia, New Zealand, and Britain have reported similar findings (Wilson et al., 1995; Davis et al., 2002; Vincent, Neale, & Woloshynowych, 2001), adding to "the growing body of evidence that health care, although undoubtedly beneficial, also has potentially harmful effects on patients" (Davis, 2004, p. 1688). Clearly, health care has become a risky business.

Adverse events are "a challenge to quality of care, a significant avoidable cause of human suffering, and a high toll in financial loss and opportunity cost to health services" (World

Health Organization, 2002, p .2). In fact, not all adverse events are preventable; some, such as an allergic reaction to a new medication, are unavoidable consequences of care. However, an estimated 37%–51% are thought to be potentially preventable (Brennan et al., 1991; Leape et al., 1991; Wilson et al, 1995; Thomas et al, 2000; Davis et al; 2002; Vincent et al., 2001; Baker et al., 2004). Even if the proportion of preventable adverse events is low, investing energy and resources in making the system safer could offer sizable financial rewards as the costs associated with patient safety incidents are not trivial. "The cost of medical errors is much greater than the cost of error prevention. Patient safety initiatives may in fact represent one of the best opportunities for a positive return on investment for hospitals" (University of Michigan, 2002a, p. 9).

Patients pay the heaviest price when they experience harm at the hands of the people they have turned to for help. Consequences include discomfort, pain and suffering, extended stays in hospital (and related financial costs), loss of income, loss of function, loss of limb, and ultimately, loss of life (Kohn et al., 2000). Families suffer by association.

The cost to health care providers is also significant. People who choose careers in health care genuinely want to help their patients, and certainly don't mean to cause them harm (Edmondson, Roberto, & Tucker, 2002; National Steering Committee on Patient Safety, 2002). Health care providers are demoralized when patients and their families show a lack of trust in their care, and devastated when they are involved in a serious adverse event that results in harm to a patient. Burnout, turnover, absenteeism, and presenteeism--defined as decreased productivity when employees attend work but are not feeling well--have all been connected to low staff satisfaction with their work environments. Given the present and predicted future

shortages of nurses, physicians, and other health care professionals, this issue has important ramifications for both recruitment and retention (Auditor General of British Columbia, 2004).

Millar (2001) notes that "as well as being a major cause of death, medical error is a major cause of morbidity and extra costs in the system" (p. 80). In June 2004, the Canadian Institute for Health Information (CIHI) released a report, *Health Care in Canada*, which stated that 1.1 million added days in hospital and $750 million in extra health care spending may be attributable to adverse events annually (Canadian Institute for Health Information [CIHI], 2004). Alberti (2001) estimated that extended hospital stays and other expenses related to medical errors cost Britain's National Health Service more than £1 billion annually. A study by Strausbaugh and Joseph in 2000 (cited in Millar, 2001) found the additional costs of infections acquired by patients in American long-term care facilities to be approximately US$1 billion. Kohn et al. (2000) calculated the total national cost for adverse events, including lost income, lost household productivity, disability, and health care costs to be between US$38 billion and US$50 billion per year.

The costs associated with additional laboratory tests, medications, and extended hospital stays related to adverse events are staggering. They also represent *opportunity cost*, which is defined as opportunities lost as attempts to resolve and treat the effects of events divert energy and funds from other initiatives.

Although it pales in comparison to the costs associated with additional length of stay, there is a financial cost to thoroughly examining, analyzing and reporting on an adverse event. This cost is hidden because it is largely comprised of staff time. Medico-legal costs and Risk Management staff time spent investigating and managing adverse events--at a cost of as much as

US$4,000 per incident (University of Michigan, 2002a)--are additional system costs, again tied to reactive activities instead of proactive and preventative strategies.

Problems with patient safety have other costs, too. There is some evidence that the Canadian public has lost its faith in the ability of the health care system and its providers to deliver safe, quality care. In the report, *Building on Values: The Future of Health Care in Canada,* Romanow (2002) found that

> Canadians want and expect to have access to health care services when and where they need them. They expect high standards of quality to be met. They expect the treatments and services they receive to be based on the best available scientific evidence and the latest knowledge. And they expect the health care system to diagnose health problems, cure illnesses and treat injuries, and help improve not only their overall health but their quality of life as well. Too often, however, those expectations are not being met and, as a result, Canadians' faith in the health care system is undermined. (p. 137)

The demand is growing for greater accountability and increased involvement of the public in health care decision-making (Romanow, 2002; CIHI, 2004). In the United States, profit-driven health care agencies are finding that potential patients are comparing hospital quality and safety records in order to decide which one will get their business (Leapfrog Group, 2002). In Canada, our system does not generally offer this type of competitive environment, but the move towards privatization and public-private partnerships indicates that public perception is not something that can be ignored. In addition, most Canadians consider safe, quality health care a basic right.

Accountability for patient safety has increasingly become a focus of accrediting agencies in most countries. In Canada, the Canadian Council on Health Services Accreditation (CCHSA)

is the country's major accrediting body. "The role of the CCHSA…is to support health services organizations across Canada in achieving and continually improving the quality of care and services provided to their clients" (Canadian Council on Health Services Accreditation [CCHSA], 2003, p. 1). Recently, the CCHSA published a document entitled *CCHSA and Patient Safety*, describing and emphasizing the importance the CCHSA places on patient safety as a crosscutting measure associated with all accreditation standards sections. In short, the CCHSA recognizes that "health care quality begins with patient safety" (Kizer, cited in CCHSA, p. 1).

In Canada, the CCHSA provides suggestions for the integration and measurement of patient safety structures, processes, and outcomes; in the United States, the Joint Commission on Accreditation of Health care Organizations (2003) has taken the further step of imposing mandatory reporting requirements on health care agencies with regards to sentinel events, their analysis, and the implementation of recommended changes. Additionally, both federal and state legislation mandating the provision of care and the protection of the public have mushroomed in the United States, posing huge logistical and financial challenges for hospitals as they struggle to comply with the Emergency Medical Treatment and Active Labor Act, the Health Insurance Portability and Accountability Act, and other laws aimed at protecting members of the public who need health care. All of this legislation is meant to hold health care providers accountable. In Canada, we are likely to see movement in the same direction if we do not take control of the issues of patient safety and quality ourselves and seize opportunities to effect positive change from within.

Potential Causes of the Problem

Health care has become increasingly complex over the past few decades. Substantial advances in diagnosis, treatment, and technology mean that health care providers now have "the

power to confer great benefits on patients but also the ability to cause great harm" (Hatch, 2001, p. 1339). An aging population, resource limitations, health care restructuring, and shortages of qualified professionals add to the complexity, as does the fact that health care relies heavily on provider interactions with other individuals, with the system, and with technology (Turnbull, 2001). Reason (cited in Page, 2004) added "diversity and associated risks of actions undertaken in health care, the…vulnerability of health care consumers, differences in the delivery of health care services in contrast to other human services, the uncertainty of the health care knowledge base" (p. 61) and a lack of explicit and open error investigation to the list. Such a complex environment is inherently prone to risk (Institute of Medicine, 2001; Romanow, 2002), and error is inevitable (Reason, 2000). Beck (cited in Morton-Cooper, 2000) described our current state as a 'risk society', where "risks are…hidden in our institutions and are not palpable, obvious or observable, except when they are brought to our attention by those who question current practices" (p. 16).

Historically, there has been a lack of understanding about human error, particularly in professions such as medicine and nursing, which were seen as "callings". Today, patients continue to place great trust and faith in their health care providers, expecting that they will not make mistakes, and health care providers have been educated to believe in the concept of professional infallibility (Kennedy, 2004). However, Kohn et al. (2000) found that not much has changed since 1711 when Alexander Pope observed that "to err is human" (Part II, ¶ 18). Reason (2000) stressed that we must accept the fact that people, no matter how well trained or well meaning, will make mistakes, and develop our systems to prevent errors, where possible, and increase our system's tolerance of errors to minimize the resulting harm. Reason's systems approach integrates processes, standards, equipment, and staff to form a multilayered set of

defenses against adverse events. Front-line care providers are a critical part of this defense system.

The nursing shortage has further contributed to the patient safety problem. C&W, like most other hospitals, now hires more new graduates and more inexperienced staff than in the past (Allan, 1999; Van Stolk, 2003). Organizational and critical thinking skills have yet to develop in many of these junior nurses, and they have not yet had the experience necessary to inform clinical judgement, increasing the risk of error. The *authority gradient* --the perceived power imbalance between team members of different disciplines--is also more evident with these nurses than with seasoned, mature staff, who are more confident and more likely to question care decisions and advocate assertively for their patients. Workload issues and overtime are prevalent, with associated stress and fatigue and the increase in errors that accompany them (Rogers, Hwang, Scott, Aiken, & Dinges, 2004).

The health care work environment has a profound impact on health care providers' ability to give safe, quality care (Baumann et al., 2001; Page, 2004). A Statistics Canada report on job stress found that health care workers demonstrated the highest rate of stress from a combination of factors including too many demands, long hours, safety issues, and poor interpersonal relationships with leaders, colleagues, and patients (Williams, 2003). The Auditor General's review of BC health care workplaces also emphasized the link between the work environment and safe practice, stating

> If the health authorities are to fulfill government's expectations of "putting patients first", they must ensure that the work environment supports health care workers in their efforts to provide the best patient care possible. Such support includes protecting workers from undue stress and risks. (Auditor General of British Columbia, 2004, p. 2)

Potential Solutions to the Problem

Internationally, a number of agencies have been created to address patient safety issues at a high level. The Australian Council for Safety and Quality in Health Care and Britain's National Patient Safety Agency are two examples of organizations formed specifically to lead national efforts to promote systemic improvement on a large scale. In 2003, the Canadian government announced funding of $10 million annually to establish and support the Canadian Patient Safety Institute (CPSI), described as

> an independent not-for-profit corporation, at arm's length from governments, system stakeholders and regulatory bodies. Located in Edmonton, Alberta, its mandate will be to provide a leadership role with respect to patient safety issues in the context of improving health care quality. (Health Canada, 2003, ¶ 4)

The CPSI may become a valuable resource in the future, but what can be done now to help make health care safer at the local level?

One overreaching solution to the problem is to create a culture of safety. All strategies should be aligned with this overall objective and deliberately employed to achieve a tipping point (Gladwell, 2002), moving the organization from its current state to the desired safety culture. Achieving cultural change is no small feat, however. Resistance to change is a common phenomenon for individuals and organizations, and may be due to multiple reasons, such as lack of trust, belief that change is unnecessary or not feasible, or resentment of interference (Yukl, 2002). Cultural change is particularly challenging, as it requires shifting people's shared assumptions, beliefs, and attitudes in order to change behaviour. The strategies that will accomplish this goal most effectively must be identified, and will need to address both "what to

do" and "how to do it" in regards to education and learning, improvement, change, teamwork, and leadership.

The systems approach to error management advocated by Leape (1994) and Reason (2000) is critical to understanding and addressing the issues. "Adherents of the system approach strive for a comprehensive management programme aimed at several different targets: the person, the team, the task, the workplace, and the institution as a whole" (Reason, p. 769). Additionally, from the systems view, there is a strong interrelationship between resources, cost, educational activities, quality measurement and monitoring, staff retention, sick time, and leadership.

Through the privileged relationship they enjoy with their patients (Morton-Cooper, 2000), front-line care providers are a fundamental part of the system and play a key role in preventing and recognizing adverse events. Front-line care providers who work directly with patients are in a unique position to influence patient safety and quality on a daily basis. As health care has increased in complexity, the roles of the nurse and physician in preventing, identifying, reporting, and addressing adverse events have become key to the systems approach to improving quality of care and reducing risk. The challenge is to identify methods to help nurses and physicians integrate thinking about patient safety into their daily practice, and to provide them with the tools they need to reduce risk and promote quality care within the larger system.

The QS&RM internship program at C&W may be one effective strategy to help create and sustain a culture of safety.

> Healthcare needs trained leaders to advance the process of change and improvement to better health outcomes and safety. A fellowship or internship approach to such training is one way to begin to build an alliance of brave, forward-thinking, change-oriented

> individuals who will work to change the status quo. (Compton, Preston, Taylor, & Verschoor, 2004, p. 3)

The goals of the internship program are to develop a cadre of clinical leaders with the drive, experience, and skills to promote quality improvement and patient safety in their clinical programs, to promote a more integrated approach to quality, safety, and risk management functions at C&W, and to develop capacity for quality leadership throughout the organization in order to promote sustainable, systemic improvement. The internship program also aims to spread ideas and improvement through the interns to the programs.

Philosophically, the internship program is based on the belief that "leaders within the clinical Programs…are in the best position to influence and effect meaningful, sustained practice change. These leaders are familiar with their Program issues, have credibility with Program staff, and are part of Program culture"(Compton et al., 2004, p. 3). They are also in the middle of the organizational structure, and able to bridge the gap between the senior leaders and front-line staff (Oshry, 1996).

The internship program offers front-line nurse leaders protected time and expert support to learn theory, processes, and tools related to patient safety, quality improvement, risk management, leadership, and change that they can apply within their practice areas (Appendix A). It supports them in developing a new way of thinking about safety, systems, and their role, and helps them begin to the attitudinal change that is the first step in cultural change. The program also provides the interns with an opportunity to develop a strong relationship with experts in the QS&RM Department, offering a potential source of ongoing support, coaching, and mentoring and as the basis for creating a community of practice around quality and safety.

Staff in the Department of QS&RM was recognized for developing the innovative internship program in May 2004 when we received two *Excellence in Education Awards* from C&W. In addition, the internship program was identified during as a "Good Practice" by the CCHSA during C&W's recent accreditation, with surveyors suggesting the program could be emulated by other similar agencies. While these responses are encouraging, further validation of a more systematic nature is needed. This research project is an opportunity to examine the fledgling internship program from a number of perspectives to ensure it is solidly grounded in current patient safety literature and a fit with the needs and priorities of clinicians, and to determine how it can best support a patient safety culture at C&W.

The Organization

C&W is an agency of the Provincial Health Services Authority (PHSA). Comprised of BC Children's Hospital (BCCH), BC Women's Hospital and Health Centre (BCW), and Sunny Hill Health Centre for Children (SHHCC) and geographically located on two campuses in Vancouver, C&W provides specialized and tertiary health care services to children and women from across the province of British Columbia.

Operationally, C&W is divided into two portfolios: Child Health (BCCH and SHHCC), and Women's and Family Health (BCW). Each portfolio has its own President reporting to the President and Chief Executive Officer of the PHSA. C&W uses a program management structure within each portfolio, with a co-led nurse director and medical director model. Front-line nursing leadership varies within each program but typically includes a combination of nurse managers, nurse educators, and clinical nurse specialists. Medical departments and divisions are aligned with University of British Columbia. Professional practice leadership for Nursing is provided by a Chief Nursing Officer.

The Department of Quality, Safety and Risk Management (QS&RM) is part of the portfolio of the Vice-President, Medical Affairs, Quality, Safety and Risk Management for the PHSA. The Department provides leadership and support for C&W on patient safety, quality improvement, and risk management issues, offering consultation, education, and other specific services. A quality of care committee structure links programs, departments, and services and reports ultimately through the Medical Advisory Committee to the PHSA Board of Directors on quality of care issues.

The PHSA employs approximately 10,000 people. More than 4,000 of these employees work at C&W, including over 1,500 nurses and 800 physicians. Additionally, more than 2,000 students and trainees, from a wide range of health professions and provincial, national, and international academic programs, participate in learning activities at C&W annually. Nearly 100 people work in the Emergency Department at BCCH, which is the clinical area I selected to be the focus of my study.

The timing of my project is interesting for several reasons. CCHSA completed an accreditation survey of C&W in June 2004 and changes to the management, monitoring, and reporting of quality issues are underway or under consideration in response to the learning arising from the accreditation experience. Also, a major reorganization of program structure and physical space is in progress at BCCH, with an emphasis on greater accountability and efficiency. Although these changes--plus job action by one of the labour unions--meant that my project was conducted against a turbulent backdrop, this was an excellent opportunity to identify means that will help staff develop capacity to cope with and even thrive within the permanent whitewater of change (Vaill, 1996) that is our health care context.

In this first chapter, I have provided background information to show that patient safety is an issue of serious concern for health care providers and consumers alike, and a priority for my organization. The QS&RM internship program is one strategy that may be effective in helping support a culture of safety. In Chapter Two, I will review information related to my research question, including organizational documents that may inform the project and current literature pertaining to several aspects of my topic.

CHAPTER TWO – INFORMATION REVIEW

Chapter Two will examine key documents related to the research question to offer information to amplify or support the description of the patient safety problem and internship program opportunity in Chapter One. The information review will contextualize the topic within the 'whole system' within which it exists – both internal and external to C&W itself. To achieve this objective, both organizational documents and current literature will be reviewed.

Review of Organizational Documents

Oshry (1996) points out the necessity of seeing the big picture, and the danger of seeing the part without the whole and the present without the past. An understanding of the system and the complex set of events that have created the current context will help prevent misunderstanding and conflict. This understanding is facilitated by a review of key organizational documents, which also provides insights into the priorities and perspectives of C&W and the PHSA. The following documents have been reviewed:

- Vision, mission and values statements (BCCH, BCW, SHHCC, and PHSA, plus draft documents for the C&W Department of QS&RM)
- Strategic plans for next three to five years (BCCH, BCW, SHHCC, and PHSA, plus draft documents for the C&W Department of QS&RM)
- Reports to the Quality and Access Committee of the PHSA Board
- Newsletters, including C&W *Teamworks* and PHSA *Pulse,* and other PHSA bulletins
- BCCH Annual Report to the Community (2003/2004)

While all of the documents were useful in helping me gain a broad understanding of the organization, the strategic plans and the various vision, mission, and values statements were most valuable in informing my thinking about my project. The PHSA documents were

particularly relevant. Bearing in mind that leaders show what is important to them by where they spend their time and attention (Kouzes & Posner, 2002), I was excited to see that the PHSA's new strategic plan states that "improving quality and safety is central to our ultimate goal of achieving better health for the people we serve" (Provincial Health Services Authority [PHSA], 2004, p.2). Further,

> Safety is vital for better health. We must implement systems and processes that ensure safe clinical and work environments. We must also work to create a blameless culture to remove the stigma of errors and encourage reporting, thus allowing us to learn from mistakes. (PHSA, 2004, p. 2)

The PHSA Board of Directors and Executive Team place strong emphasis on quality of care and accountability as evidenced by their values and mission statements (PHSA, 2002). The Quality and Access Committee of the PHSA Board requires bimonthly reporting on quality and safety indicators and initiatives from each of its agencies.

Other documents reviewed revealed that the PHSA is actively involved in two significant provincial projects, one focusing on patient satisfaction with care and the other on incident, complaint and claims reporting, and in the recent formation of the provincial Patient Safety Task Force, which is co-chaired by the PHSA Vice-President, Medical Affairs, Quality, Safety and Risk Management. The PHSA also demonstrates a strong commitment to accountability to the public for quality of care and stewardship of resources, as demonstrated through community meetings held in various parts of the province, and an extensive consultation project to determine external stakeholder perspectives recently completed in collaboration with the Ministry of Health.

The new BCCH and BCW strategic plans were consistent with the PHSA's overall direction and commitment to quality and safety. Each of these documents also reflected the individual priorities and character of the agencies. The draft strategic plan for the C&W Department of QS&RM, too, is aligned with the strategic directions of the PHSA, BCCH, and BCW and supports an integrated approach to safety, quality improvement, and risk management functions.

Review of Supporting Literature

The literature review provides a forum for "dialogue" with others who have an interest or expertise in some aspect of my topic, and adds to the depth and breadth of the study. For the purposes of my project, I will examine the domain of patient safety, from both international and Canadian perspectives, explore the concept of safety culture, and consider the role of the nurse in patient safety. Improvement, change, learning, and systems thinking will be common threads throughout. The literature review will also provide the current context for both project and the QS&RM internship program.

Patient Safety

Over the past decade, patient safety has been the focus of a number of major reports from countries around the world and many articles and studies. The growing academic interest in patient safety was noted by CIHI (2004) in their report, *Health in Canada*, which stated that

> The number of studies on patient safety is soaring. Close to a century ago…quality of care was a relatively rare area of study….By 2003, almost 1% of publications in the National Library of Medicine's electronic database (PubMed) dealt with patient safety or medical errors – more than four times the level in 1982. (p. 29)

While the volume is daunting, examination of a sampling of the literature is necessary to obtain a solid understanding of the scope and significance of the issue.

International Context

"Most health care encounters are error-free; however, international researchers have documented preventable injuries and deaths in every setting where measurement was attempted" (National Steering Committee on Patient Safety, 2002, p. 5). There are several international studies that inform our current thinking about patient safety by describing the incidence of adverse events in hospitals. Almost every article published in the past ten years on patient safety references one of these seminal reports.

In 1991, the *New England Journal of Medicine* published two articles describing the results of the Harvard Medical Practice Study (Brennan et al., 1991; Leape et al., 1991). Using a retrospective chart review methodology, the researchers found that medical errors occurred in 3.7% of hospital admissions. While limited in its scope due to its focus on medico-legal issues and negligence, the Harvard study is important as the methods used were later modified and applied to similar studies in Australia, New Zealand, the United Kingdom, and Canada, as well as the United States.

Thomas et al. (2000) used a similar approach to conduct a second American study in Utah and Colorado, finding the incidence of hospital patients who experienced adverse events to be 2.9%. Like the Harvard study, this review also had a medico-legal focus.

Similar studies were performed in other countries, but with a focus on quality improvement. In the *Medical Journal of Australia,* Wilson et al. (1995) described "The Quality in Australian Health Care Study", which found a rate of adverse events of 16.6%, half of which were considered preventable. Vincent et al. (2001) studied the problem of adverse events in

British hospitals, reporting in the *British Medical Journal* that 10.8% of patients suffered one or more such incidents. New Zealand demonstrated a rate of 12.9% of admissions sampled in a study by Davis et al. (2002), which was published in the *New Zealand Medical Journal.*

In 2000, Kohn et al. combined the findings of the first two American studies in their report, *To Err is Human*, published by the Institute of Medicine. This publication generated both alarm and widespread interest in patient safety in the United States with its identification of health care itself as a major cause of death and injury. Specifically, the report estimated that 44,000 to 98,000 Americans die each year in hospitals from preventable medical errors. The report, which was almost 300 pages long, drew heavily from lessons learned in other high-risk industries, and made recommendations for change related to leadership and knowledge, identifying and learning from errors, setting performance standards and expectations for safety, and implementing safety systems.

Crossing the Quality Chasm (Institute of Medicine, 2001) expanded on the earlier Institute of Medicine report (Kohn et al., 2000). Called "one of the most important documents in American health care of the past few decades" by Don Berwick, Chief Executive Officer of the Institute for Healthcare Improvement (Berwick, 2004, p. 247), this report designated six important requirements of care: it should be safe, effective, patient-centred, timely, efficient, and equitable. It also emphasized the need to redesign systems of care to promote patient safety, and underscored the role patients themselves could play in preventing errors. The challenging and pivotal role of healthcare professionals was also recognized.

> The effective remedy is not to browbeat the health care workforce by asking them to try harder to give safe care. Members of the health care workforce are already trying hard to do their jobs well. In fact, the courage, hard work, and commitment of doctors, nurses,

> and others in health care are today the only real means we have of stemming the flood of errors that are latent in our health care systems. (p. 4)

Both reports (Kohn et al.; Institute of Medicine) identified the need for effective leadership and new strategies for spreading evidence-based knowledge to health care professionals in order to promote safe, collaborative practice, within a context of lifelong learning.

Although it is difficult to compare the studies due to differences in focus and methodology, it is clear that that patient safety is an international issue of serious consequence affecting sizable numbers of people.

Canadian Context

In 2002, Baker and Norton conducted a survey for Health Canada to examine the perceptions of health care providers across the country on patient safety. Their general findings were consistent with those of studies done in other countries. Of note, they found "an identified need for education among health care professionals concerning patient safety issues [and a]…need to "go up stream", focusing on systems and the prevention of error" (Baker & Norton, 2002, section 4.2, ¶ 2). The researchers recommended that methods be found to build skills of health care professionals, disseminate knowledge, and implement systems to improve safety.

Under the leadership of the Royal College of Physicians and Surgeons of Canada, the National Steering Committee on Patient Safety (2002) issued its report, *Building a Safer System: A National Integrated Strategy for Improving Patient Safety in Canadian Health care*. The report called safety "a fundamental aspect of quality health care" (p. vii) and focused on developing a culture of safety by employing evidence-based knowledge, taking a team approach to practice, and encouraging lifelong learning. The importance of partnerships between consumers and providers of care, both as individuals and organizations, was recognized, and the need to develop

and implement educational and professional development programs focusing on patient safety was emphasized.

Romanow's (2002) report, *Building on Values: The Future of Health Care in Canada*, examined health care issues with a focus on sustainability and delivery. Quality and safety were stated to be important to Canadians, and systems to promote both were recommended.

Forster et al. (2004) published one of the first detailed studies on the incidence and timing of adverse events in Canadian patients. The researchers examined admissions to the Ottawa Hospital and reported that incidents occurred in 12.7% of hospitalizations and that 38% were possibly preventable. They further determined that 61% of the problems took place before the patients were admitted to hospital.

In May 2004, the *Canadian Medical Association Journal* published "The Canadian Adverse Events Study: The incidence of adverse events among hospital patients in Canada" (Baker et al., 2004). This study was conducted as a joint project of CIHI and the Canadian Institute of Health Research was "the first Canadian study to provide a national estimate of the incidence of [adverse events] across a range of hospitals using methods comparable to those used in recent studies from other countries" (p. 1678). The researchers found that the overall incidence rate of adverse events was 7.5 %. If similar rates apply across the country, then of the almost 2.5 million annual hospital admissions in Canada, about 185,000 are associated with an adverse event and close to 70,000 (37 %) of these are potentially preventable, including 9, 000 to 24,000 deaths. Although not the focus of the study, Baker et al. made some recommendations for making the system safer, stating that "the greatest gains…will come from modifying the work environment of health care professionals, creating better defenses for averting [adverse events]

and mitigating their effects. Efforts to make patient care safer will require leadership…and improved communication and coordination among caregivers" (p. 1685).

In June 2004, CIHI released its fifth annual report on *Health Care in Canada* in order to highlight current issues of interest to Canadians while providing updated data and analyses on topics of continuing importance. The report was divided into two sections, with the first part specifically focusing on safe care in recognition of the growing concern about this aspect of health care. Two surveys cited in the report support the findings of Baker et al. (2004) from a different perspective. The first study was commissioned by CIHI in 2003 to examine the experiences of Canadians regarding health care. After surveying 1,000 people, the researchers found that 24% had experienced a preventable adverse event in their own care or that of a family member. Of those who had such an experience, 52% said that the event resulted in serious health consequences. The second study was performed by the Health Quality Council of Alberta and involved a survey of more than 4,000 Albertans. "Fourteen percent of respondents reported that they or a member of their immediate family had experienced a medical mistake in the past year that resulted in serious harm, such as death, disability, or prolonged treatment" (CIHI, 2004, p. 43).

In summary, it would seem that "to err is human…in Canada, too" (CIHI, 2004, p. 39).

Organizational Culture

How might the problems associated with patient safety be addressed? As noted above, some of the reports generated on patient safety include suggestions and recommendations; most focus on changing organizational culture to create a culture of safety as a means of truly making our health care system safer in the long term. Components of a safety culture include leadership commitment, the concept of a 'just' culture, an interdisciplinary team approach to care delivery,

and staff support through formal safety education. Before exploring each of these elements, however, it is helpful to define what a 'culture of safety' actually is.

Culture of Safety

The concept of safety culture arises from the more general definition of organizational or corporate culture. O'Toole (1996) states that "A culture is a system of beliefs and actions that characterize a particular group.…the complex, interrelated whole of standardized, institutionalized, habitual behavior that characterizes that firm and that firm only….culture is 'us'" (p. 72). Sometimes said to be the very heart of an organization, culture shapes the way members think, behave, and approach their work (University of Michigan, 2002a).

"Current interest in the term 'safety culture' can be traced directly back to the Chernobyl accident in 1986" (Weigmann, Zhang, von Thaden, Sharma, & Mitchell, 2002, p. 5). Since then, industries such as aviation, mining, manufacturing, and health care, in addition to nuclear power, have developed definitions of the concept. Drawing on the commonalities among the various definitions, Weigmann et al. formulated the following global definition:

> Safety culture is the enduring value and priority placed on worker and public safety by everyone in every group at every level of an organization. It refers to the extent to which individuals and groups will commit to personal responsibility for safety, act to preserve, enhance and communicate safety concerns, strive to actively learn, adapt and modify (both individual and organizational) behavior based on lessons learned from mistakes, and be rewarded in a manner consistent with these values. (p. 8).

The University of Michigan (2002a) described safety culture specific to health care as

> one that integrates the Hippocratic maxim of "first do no harm" into the very fiber of its identity, infuses it into the norms and operations of an entire organization, and elevates it to the level of a top priority mission. (p. 2)

"A culture and environment of safety cannot be instantly created, but will evolve over time (National Steering Committee on Patient Safety, 2002, p. 12). In attempting to identify ways to effectively move towards a safety culture, it is important to understand that safety is not an input variable. Safety is not "merely an extraneous cultural element that can be acquired and infused into an organization….Safety describes what a culture 'is' or 'becomes' as opposed to what is 'has'" (University of Michigan, 2002a, p. 8). What would such a culture actually look like? According to Page (2004), it would be one where

> all employees are fully engaged in the process of detecting high-risk situations before an error occurs. Management is so responsive to employees' detection of risk that it dedicates time, personnel, budget, and training resources to bring about changes needed to make work processes safer. Employees are also empowered to act in dangerous situations to reduce the likelihood of adverse events. These attitudes and employee engagement are so pervasive and observable in the behaviors of these organizations and their employees that an actual *culture of safety* exists. (p. 14)

Leadership and Culture

"A recurrent theme in the literature is that organizations with effective safety cultures share a constant commitment to safety as a top-level priority, which permeates the entire organization" (Pizzi, Goldfarb, & Nash, 2001, p. 448). This emphasis is largely and most importantly communicated though the words and actions of organizational leaders.

Leadership is the first key component of cultural change. Page (2004) called leadership "the essential precursor" (p. 108) to achieving safety, and noted that leadership commitment to safety is critical to the development of a safety culture. Leaders drive cultural change by demonstrating their own commitment to safety. Their vision for the organization must be clear, and their message about safety must be consistent and sustained, as it takes a long time for culture to change. In short, leaders must "walk the talk" at all times. Pronovost et al. (2004) described the following behaviours that demonstrate leaders' commitment to safety:

- Promoting the view that patient safety is everyone's responsibility
- Encouraging open communication among leaders, staff, and patients regarding safety concerns
- Empowering staff to identify and reduce threats to patient safety
- Allocating resources for safety
- Educating staff on the science related to safety. (p. 59)

Page (2004) went a step further, stressing the need for transformational leadership, which is defined by Burns (cited in Yukl, 2002) as leadership that "appeals to the moral value of followers in an attempt to raise their consciousness about ethical issues and to mobilize their energy and resources to reform institutions" (p. 119). Page held that transformational leadership is required to achieve the profound change required to shift organizational culture, stating, "In practicing transformational leadership, leaders need to engage managers and staff in an ongoing relationship based on the commonly held goal of patient safety, and communicate with and teach [them] about this higher collective purpose" (p. 111).

Key Components of a Culture of Safety

Just culture.

Ruchlin, Dubbs, and Callahan (2004) identified two paradigms that are useful to understanding patient safety and to instilling a safety culture in health care organizations: normal accident theory, with its emphasis on systems, and high-reliability organization theory, with its emphasis on flexibility and learning. From the first arises the first key component of a culture of safety: an understanding that most errors are the result of systems issues, not individual failures, and that a non-punitive approach should be taken when errors do happen. "Engineering a just culture an essential early step in creating a safe culture" (Reason, 2000, p. 769) and is intertwined with the creation of a reporting culture, another important subcomponent of a culture of safety. A major barrier to improving safety is a lack of awareness of the type or extent of adverse events that occur (or nearly occur) daily in an organization (Kohn et al., 2000). If people believe they will be punished if they report an error or safety concern, they are unlikely to report. In fact, studies have shown that less than five percent of known errors are reported, and many are unknown (Leape, 1994). The goal is to cultivate an atmosphere of trust, where staff is encouraged to report actual and potential problems, and rewarded for doing so (National Steering Committee on Patient Safety, 2002).

A just culture that facilitates a reporting culture in turn helps create a learning culture (Reason, 2000). "An environment in which the main objective of analyzing adverse events is not to punish human error but to understand systems weaknesses, serves to enhance critical learning" (University of Michigan, 2002a, p. 6). Learning culture is consistent with the concept of the learning organization, which Senge (1990) defined as "an organization that is continually expanding its capacity to create its future" (p. 14). In a learning organization, individuals are

encouraged to learn as a basis for team and organizational learning. Learning from mistakes and experiences--our own and those of others--in an atmosphere of trust and respect, in turn helps foster a just, reporting culture.

A just culture does not completely eliminate personal accountability for practice; there are limited qualifications to this concept (National Steering Committee on Patient Safety, 2002).

> A number of safety experts believe we need to strive for fair and just systems of safety that acknowledge both the individual and system contributions to successful as well as adverse events while emphasizing the systems approach to error reduction. (Reason, cited in Page, 2004, p. 31)

A balance between systems thinking and personal responsibility is necessary (McKelvey, 2003). As Beyea (2004) points out, "A just culture should not be confused with one in which there is no accountability" (p. 413). Health care providers are expected to practice according to the standards of their professions, and to comply with the policies and procedures of their organization. Serious breaches of these obligations should not be excused, and clinicians who deliberately harm patients, act recklessly, disregard rules, or repeatedly demonstrate an inability to provide safe care should be subject to appropriate management or discipline (McKelvey). A clear line must be drawn between acceptable and unacceptable behaviour (Ruchlin et al., 2004).

Teamwork.

The second theory identified by Ruchlin et al. (2004) as a foundation for building a culture of safety was that of high-reliability organizations, with its emphasis on teamwork, trust, relationships, and a resilient work environment that promotes creativity and goal achievement. Nicklin et al. (2004) acknowledged this second key component of a culture of safety, noting that patient care is an interdependent, team process and emphasizing the connection between

teamwork, communication, and safety; the University of Michigan (2002a) agreed that "collaboration that is driven by cooperation and communication is a key determinant of positive patient outcomes"(p. 5-6). Kaissi, Johnson, and Kirschbaum (2003) held that "substantial reductions in health care errors will not come until more attention is given to human solutions, such as improving teamwork and communication in health care teams" (p. 211).

An interdisciplinary team approach increases flexibility within the team (Reason, 2000) and helps reduce the authority gradient, which can affect patient care and safety, for example, if a nurse is afraid to question a physician's order.

> This form of delivering care functions as a check and balance system that encourages the professional scrutiny of the actions and decisions of each team member. It has the effect of equalizing power relations between team members by flattening the hierarchy. (University of Michigan, 2002a, p. 5)

In recent years, accrediting bodies have recognized the importance of teamwork to patient safety. JCAHO (Joint Commission on Accreditation of Healthcare Organizations [JCAHO], 2003) identified the collaborative care model as error prevention strategy; CCHSA (2004) emphasized teamwork, coordination, and communication as considerations in promoting safe patient care in Canada.

Safety education.

There seems to be no dispute in the literature about the importance of formal safety education for health care providers as a key component of a culture of safety. In his landmark article, "Error in Medicine", Leape (1994) identified the need to train physicians, nurses, and pharmacists about errors and how to prevent them. Kohn et al. (2000) expanded on this theme, recommending that specific safety training programs be developed for health care professionals.

A year later, in *Crossing the Quality Chasm,* the Institute of Medicine (2001) stated that "clinical training and education is seen as particularly important for changing the culture of health care" (p. 209). Spencer and Jordan (2001) emphasized the link between "education and training, and strategies to implement change and improve quality of care" (p. ii38). Baker and Norton (2002) held that "support should be provided to develop curricula and learning experiences in patient safety at all educational levels [including]…continuing professional education" (Section 5.2.3). Page (2004) maintained that "safety orientation and recurrent training are essential" (p. 289).

The Institute of Medicine (2001) offered suggestions regarding the delivery of safety education. Specifically, this report recommended teaching evidence-based practice and training in multidisciplinary teams and utilizing a variety of methods, including Web-based technologies and decision support tools. The need for a focus on leadership education as part of a safety curriculum was also noted. Leatt and Porter (2003) agreed, suggesting that leadership development "should be done within a framework of quality improvement" (p. 28) and that such learning should be interdisciplinary.

There are a variety of approaches that can be taken to formal safety education. In relation to the internship program, I was interested to note that Baker and Norton (2002) proposed the creation of a one-year national, interdisciplinary "safety fellowship" program. "The purpose of this fellowship would be to develop these individuals' knowledge and skills in all aspects of patient safety to enhance Canadian capacity in this area (Baker & Norton, Section 5.2.3). The Institute for Healthcare Improvement offered a similar fellowship program last year with the goal of creating a team of professionals skilled in the area of quality improvement and safety who would then apply their expertise to effect change within their own organizations.

Specific education and training on patient safety is recommended by agencies such as the Johns Hopkins Hospital (Pronovost et al., 2004) and the Institute for Healthcare Improvement, for example, through their new Patient Safety Officer Executive Training Program. The development and deliberate application of safety programs can also help instill safety as a core value within clinical settings, and requires leadership from at least one person knowledgeable about safety and quality tools, methods, and philosophy (Pronovost et al.). In fact, recent research has shown that comprehensive safety programs, which include staff education about safety, are closely correlated with positive safety climates (DeJoy, Schaffer, Wilson, Vandenberg, & Butts, 2004).

Nurses and Patient Safety

The internship program at C&W is aimed at front-line nurse leaders based on two beliefs: Nurses play a key role in patient safety, and nurses in front-line leadership positions have a major impact on nursing practice within their clinical programs. Both of these premises will be examined in this section.

Staff Nurses and Patient Safety

Nurses "are the largest component of the health care workforce and a critical element of our health care system" (Page, 2004, p. ix). As such, they have an enormous impact on patient care and outcomes and can play an important part in efforts aimed at building a safer system. As Page pointed out, "efforts to detect and remedy error-producing defects in health care systems will be severely constrained without the assistance of the eyes, ears, cognitive powers, and interventions of over half the health care workforce" (p. 32). That nurses are seen as key to patient safety--by themselves and others--was shown in a study by Cook, Hoas, Guttmannova, & Joyner (2004), which found that 96% of nurses and more than 90% of physicians, administrators

and pharmacists surveyed assigned primary responsibility for patient safety to nurses. Interestingly, only 22% of all those responding believed that nurses, physicians, pharmacists, and administrators shared this responsibility equally.

Perhaps this perception of greater accountability for safety is due to the role that nurses play in patient care, which puts them at the "sharp end" of the system in error terms (Reason, 2000; Leape, 1994), meaning that they are often at the delivery point of care when a mistake occurs. Latent conditions, such as management decisions and organizational processes at the "blunt end", or distant from patient care, combine to create active failures resulting in the error.

> For example, healthcare professionals are continually pressured to reduce costs. Requiring predetermined quotas of patients may cause incomplete history taking and abbreviated physical assessment, leading to preventable patient complications. (Kennedy, 2004, p. 117)

As the final link in the chain of latent failures, nurses are often held accountable for errors, even though they seldom participate in decision-making that may have contributed to the failure, or in the subsequent examination of the problem (Cook, Hoas, et al., 2004).

The responsibility of the nurse in patient safety is clearly articulated in the *Code of Ethics for Nurses* (Canadian Nurses Association [CNA], 2002) and professional practice standards (Registered Nurses Association of British Columbia, 2003). To emphasize and clarify the relationship between nurses and patient safety, the Canadian Nurses Association (CNA) released a position statement on the issue in late 2003, stating, "Patient safety is fundamental to nursing care and health care across all settings and sectors. It is not merely a mandate; it is a moral and ethical imperative in caring for others" (p. 1), and noting that "nursing has always given the highest priority to patient safety" (p.3). The CNA (2003) acknowledged the multifaceted nature

of the patient safety problem and the need for a comprehensive approach to solving it. The practice environment, staffing, teamwork, leadership, culture, and systems thinking were highlighted. Most important,

> nurses have a significant contribution to make in protecting and improving patient safety. As the principal health care providers with the patients, overseeing, co-ordinating and providing care 24 hours a day, seven days a week, nurses are ideally positioned to strengthen the safety net for patient care. (CNA, 2003, p .3)

A comprehensive report released by the Institute of Medicine (Page, 2004) closely examined the relationship between nurses and patient safety issue in detail. In *Keeping Patient's Safe: Transforming the Work Environment of Nurses*, Page noted that nursing is, by its nature, "inseparably linked to patient safety" (p. 23). Drawing on human factors theory and emphasizing the relationship between the context in which nurses work and patient safety, Page identified transformational leadership, knowledge transfer and dissemination, and the creation of a culture of safety as key elements. Examining the issue from a systems perspective, Page included the individual nurse within the system in her consideration of strategies to improve patient safety. Formal nursing education on safety, risk management and quality were recommended as one way to create a culture of safety and support nurses in their work.

The CNA and the University of Toronto Faculty of Nursing (2004) examined *Nurses and Patient Safety* in a discussion paper, which identified challenges to safe nursing care, including issues with the practice environment, teamwork and communication, and organizational culture. The authors noted that "no single action will keep patients safe; rather, 'bundles' of patient safeguards are needed" (p. 13), including effective nursing leadership, organizational support for ongoing learning, interdisciplinary collaboration, and creation of a culture of safety.

Front-line Nurse Leaders and Patient Safety

Nicklin et al. (2004) looked at the issue of patient safety culture and leadership from the perspective of the Academy of Canadian Executive Nurses. This paper emphasized the role of nurse leaders, "from the bedside to the boardroom" (p. 30) in creating a culture of safety. Leadership at all levels is necessary to changing organizational culture; the role of the front-line leader, however, is critical to effecting change in clinician practice.

At C&W there are several categories of front-line nursing leaders, including clinical nurse specialist/advanced practice nurses, clinical nurse educators, and clinical nurse/program coordinators (Hay, 2004). The nurse educators were selected to be the initial focus of the internship program as they have current clinical expertise, day-to-day contact with clinicians, involvement in quality improvement activities, and connections with other front-line nurse leaders, plus the teaching, coaching, and mentoring skills required of their position. The University of Michigan (2002a) supports these criteria.

> Engaging clinicians has greater success if key individuals can be identified from within the social networks to take on the role of 'champions' or 'change agents'. Ideal candidates are those who are perceived as leaders by their peers, are expert clinicians, have positive working relationships with other professionals, are passionate about the cause, and are committed to continuous quality improvement. (p. 13)

Additionally, Gantz, Sorenson, and Howard (2003) noted that the strong clinical background of nurses naturally prepares them for leadership positions in quality improvement work. The clinical nurse/program coordinators were perhaps a more obvious target for the internship program due to their front-line manager roles; however, the nurse educators were also seen to be leaders within the clinical programs. "We have many leaders among us; we need to nurture and

support them. And we must ensure that our workplaces and organizations encourage different ways of leading from diverse kinds of leaders" (Donner & Wheeler, 2004, p. 29).

Nurses see front-line leaders as critical to their ability to nurse (Donner & Wheeler, 2004). Such leaders have trust and credibility with the staff, have firsthand knowledge of issues, and offer a forum for conveying cultural precepts. They can motivate change by reshaping attitudes and by creating positive expectations and a sense of mutual ownership and accountability (University of Michigan, 2002a). They can convey the idea that "every nurse is a leader within his or her own realm of healthcare. We all have the ability and the responsibility, both individually and collectively, to identify issues and influence change" (Nicklin, 2003, p. 66).

In summary, the information review completed in this Chapter provided the context for the research project and for the QS&RM internship program. Internally, both C&W and the PHSA considered safety and quality to be of significant importance. Externally, patient safety was found to be an issue of serious concern, internationally and in Canada. The concept of a culture of safety was identified as an overreaching strategy to improve safety, requiring strong leadership, a just environment, and teamwork; safety education is also a key component. Nurses, and in particular, front-line nurse leaders, were noted to play a critical role in keeping patients safe.

The information review provided one perspective on the research question; additional data are needed to demonstrate the needs and priorities of health care providers in the clinical programs at C&W. Chapter Three will outline the research methodology planned to obtain this additional viewpoint.

CHAPTER THREE –RESEARCH METHODOLOGY

Chapter One provided a background to the study, which seeks to examine the alignment of the QS&RM internship program at C&W with the current literature on patient safety and the needs and priorities of health care providers. Data are required in order to achieve an understanding of the clinician perspective. This chapter will describe the research methodology used to collect the data, data collection tools, pilot site, conduct of the study, and challenges encountered throughout.

Research Methods

The research philosophy I chose for my project was phenomenology, which is an approach to research that seeks to understand how people perceive and interpret the world (Palys, 1997). Within this paradigm, I used action research, which Morton-Cooper (2000) described as "a collaborative intervention in a real world health care situation to define a problem and explore a possible solution" (p. 18).

While action research is most often qualitative in nature, it is not limited to this type of approach (Morton-Cooper, 2000). I believed a combination of a qualitative approach, with its ability to engage the reader, and the quantitative approach, with its appeal to logic and reason, offered the best evidence of the importance and validity of my project, so I selected a mixture of the two methods. By combining both, I hoped to more fully exploit the strengths and overcome the limitations of each (Palys, 1997). According to Dick (2000), multiple sources of information, including quantitative data if available and relevant, improve its reliability.

I wanted to engage participants in my research project as a means to effecting positive change in a specific group of health care providers, thereby improving their circumstances and those of their patients. An emphasis on improving the situations or lives of those involved is

another key characteristic of action research (Hagey, 1997), which was described by Seymour-Rolls and Hughes (1995) as having the creation of positive social change as its predominant driving force. Stringer (1999) concurred, stating that action research "processes should be applied in ways that benefit all participants directly" (p. 7) and further, "if an action research project does not make a difference, in a specific way, for practitioners and/or their clients, then it has failed to achieve its objectives" (p. 11). Most important to me, those involved in action research strengthen their awareness of their own capabilities (Hagey), increase their capacity for learning and change through their participation, and are empowered through their experience (Hagey; McTaggert, 1997; Seymour-Rolls & Hughes).

Data Gathering Tools

In order to determine whether the QS&RM internship program is consistent with the needs of health care providers at C&W, I needed to understand safety issues within the clinical arena from the clinician perspective. I chose one clinical area, the Emergency Department at BCCH, as the focus for my study for the following reasons: a) A nurse educator from the Emergency Department participated in the internship program between January and April, 2004; b) Leaders in the Emergency Department had shown an interest in safety and quality through their support for the nurse educator's participation in the internship program; and c) Emergency Departments are known to be high-risk clinical areas where safety issues often arise.

In early 2004, I approached the nurse educator and program manager from the Emergency Department, outlined my project, and invited them to participate. Involving these key stakeholders in the planning stages "is essential to clarify the purposes of the initiative and to establish commitment to the effort" (Nieva & Sorra, 2003, p. ii20). Both agreed and were excited about the study and its potential benefits for their Department. The nurse educator was willing to

connect with me periodically throughout the project to provide her perspective both within her clinical role and as a graduate of the internship program in order to inform the study.

Just as my interest in patient safety arose from my experience and my practice environment, I wanted to engage Emergency nurses and physicians in reflection on their experiences in relation to safety and quality of care. This collaborative approach is a key characteristic of action research (Dick, 2000; Hatten, Knapp & Salonga, 1997; Morton-Cooper, 2000; Seymour-Rolls & Hughes, 1995). Participation generates commitment, provides more complete information about the situation, raises awareness of the issue, and allows the "doers" to work with the "deciders" to examine their practice and effect meaningful change and practical solutions (Dick, 2002).

The data collection methods I chose to use were a survey and one-to-one interviews. When combined with the literature review, these approaches allow triangulation of the data, which "tests the quality of information gathered and may be useful in putting findings into perspective" (Bailey, 1997, p. 147). Input and feedback from the nurse educator throughout the project also provided a rich source of information.

Safety Climate Survey

To obtain an understanding of the existing culture in the Emergency Department with regards to safety, I decided to first survey staff on their views. As Palys (1997) pointed out, questionnaires provide the researcher with an opportunity to hear from the respondents directly, and to focus on specific aspects of the topic. In choosing a tool, I found there was little agreement in the literature about how culture should best be measured (Scott, Mannion, Davies, & Marshall, 2003). I also found significant debate about whether measuring safety climate, defined as the situation that people work in and its link to their thoughts, feelings, and

behaviours (Mearns & Fin, 1999), provided useful information about safety culture. However, most researchers agreed that climate and culture overlap, and that measurement of the safety climate could provide some indication of safety culture, although "much more digging behind the façade is required to determine [safety culture]" (Mearns & Fin, p. 10).

A number of safety climate surveys were readily available for use, but information about their quality, reliability, and validity was difficult to find (Nieva & Sorra, 2003). After some consideration about the purpose of the survey in regards to my project, I elected to use an instrument developed through a collaborative effort of the University of Texas Center of Excellence for Patient Safety Research and Practice and Johns Hopkins Hospital. According to the Institute for Healthcare Improvement (2004a), this Safety Climate Survey (Appendix B) has been well tested by many hospitals in several countries.

Prior to administering the survey, I modified the tool to include an introduction to my research project, to address issues of informed consent and confidentiality, and to add several open-ended questions consistent with those used by Pronovost et al. (2004) at Johns Hopkins Hospital as part of their patient safety program. I also converted the tool to electronic format so it could be made available on paper or via e-mail to all of the nearly 100 people who work regularly in the Emergency Department.

Interviews

I chose to conduct one-to-one interviews as another method of data collection. Interviews provide the opportunity for rich, in-depth exploration of the experiences of participants, and "the interaction of interviewer and respondent…offers benefits that can enhance the quality of data gathered" (Palys, 1997, p. 154). Face-to-face interviews also serve to inform the data collection

process, as the interviewer is able to be open to "new directions that may emerge in the context of the interview because of the unique perspective of the participant(s)" (p. 155).

Palys (1997) held that "understanding people's perspectives requires getting close to [them]" (p. 19). In creating connections with six participants through one-to-one interviews, I hoped they would share stories of their experiences with me as a springboard to a discussion about safety within their department.

A purposive sample of four nurses and two physicians was selected for interview. Criteria for inclusion were: a) having worked in the Emergency Department for at least one year on a regular part-time or full-time basis, and b) having been identified by at least two Emergency Department staff and one person from outside of the Emergency Department as someone who exemplified safe practice or excellence in quality of care.

I contacted the people selected for potential interviews by confidential letter (Appendix C) and invited them to participate; follow-up communication to arrange dates and times was conducted by e-mail. I contacted four physicians, and three agreed to be interviewed, although one was ultimately not available. I contacted seven nurses in the same manner, and four agreed to meet with me. Written informed consent was obtained from all participants prior to beginning the interviews (Appendix D).

The interview questions focused on the participants' experiences, their concerns with safety within the Emergency Department, ideas for improvement, identification of barriers to change and suggestions about removing the barriers, and influences in their lives or practice that had led them to develop their perspectives on patient safety and quality (Appendix E). I tape-recorded the interviews and had them transcribed. I repeatedly reviewed the transcripts using an iterative process to identify themes, and then aligned the themes with data collected from both

the literature review and the surveys. Input from the nurse educator was later compared to the themes.

Study Conduct

In May 2004, I administered the Safety Climate Survey to staff in the Emergency Department. I distributed the survey both electronically and on paper, and used the electronic tools provided by the Institute for Healthcare Improvement (2003) and by SurveyMonkey.com (2004), an electronic survey service, to tabulate and analyze the data. Distribution was limited to the approximately 100 Emergency Department staff, and was further limited to those staff who had worked in the Emergency Department for at least six weeks, and worked there at least half-time (18 hours per week) or provided care or services there at least three times per week.

In June 2004, I conducted individual interviews with four nurses and two physicians from the Emergency Department. Each interview was half an hour to one hour in length. The nurse educator who had completed the internship was also interviewed.

After the survey and interview data were collected and upon substantial completion of the literature review, I analyzed each set of results independent of the others. For the survey, I examined the responses by question, by respondent characteristics, and as aggregate data to determine the mean safety climate score. I also reviewed and themed the answers to the open-ended questions. I then compared the survey results to the interview themes, which I identified by repetitive transcript review, highlighting key words and phrases. The results of both were compared and contrasted (Palys, 1997) with the results of the literature review in order to determine alignment, commonalities, and differences. Finally, discussions with the nurse educator provided another perspective on the data and were incorporated into the findings and conclusions.

This chapter described the use of a survey as source of quantitative data and interviews as a source of qualitative information. These tools were administered to health care providers in the Emergency Department to help me assess their needs and priorities pertaining to patient safety. The findings, conclusions, and recommendations arising from the results will be presented in Chapter Four.

CHAPTER FOUR – RESEARCH STUDY RESULTS

This chapter contains a detailed description of the findings, conclusions, and recommendations arising from the study. Responses to the survey and interviews administered to staff in the Emergency Department, informed by input from the nurse educator, will provide the perspective of health care providers on patient safety. These results will be linked to the findings from the literature review to determine the alignment of the QS&RM internship program with current thinking on patient safety and the needs and priorities of the clinical team.

Study Findings

Findings from Survey

Forty-seven people in the Emergency Department responded to the survey. Four respondents did not meet the criteria for participation, and one person answered only half of the questions; these responses were discarded. Forty-two people completed the survey (Table 1).

Table 1. *Survey Respondents by Role*

Role	Number	Percentage
Nurse	29	69%
Nurse Leader	5	12%
Physician	5	12%
Resident/Fellow	1	2%
Other	2	5%
TOTAL	42	100%

Of the nearly 100 people who work in the Emergency Department at BCCH, approximately 80 were both eligible and available to complete the questionnaire during the survey period, meaning

the response rate was 59%, which is slightly lower than the 65% return rate recommended by the Institute for Healthcare Improvement (2004a).

Each of the survey questions was scored on a five-point scale. Ratings ranged from 1 (*disagree strongly*) to 5 (*agree strongly*). The small size of the "Resident/Fellow" and "Other" cells raised the possibility that those study participants could be identified. To protect confidentiality, I combined the responses from the resident/fellow with those of the physicians, and the responses from the "Other" participants, both of whom were in nursing-related roles, with those of the nurses. The complete survey response is shown in Appendix F.

The overall mean score for all questions and respondents was 3.64 out of a possible five. The mean score for seven of the questions--questions 1, 2, 8, 9, 10, 11, and 18--is a particularly important figure: If the mean for these seven questions is four or greater, the respondent has reported a positive safety climate (Institute for Healthcare Improvement, 2004a.). Fifty-five percent of the respondents viewed the safety climate of the BCCH Emergency Department as positive. Sixty seven percent of the physicians considered it positive, compared to 55% of the nurses, and only 40% of the nurse leaders. The overall safety climate score was just short of four at 3.92 out of a possible five.

The question that received the most positive response was, "I would feel safe being treated here as a patient, or having my child or family member treated here as a patient"; over 90% of the respondents agreed with this statement. In addition, 85% agreed with the statement, "The personnel in this clinical area take responsibility for patient safety."

Questions related to leadership within the Emergency Department were answered positively. For example, 72% thought the physician and nurse leaders in the area listened to them and cared about their concerns, 62% were satisfied with the availability of clinical physician

leadership, and 72% were satisfied with the availability of clinical nursing leadership. Sixty percent agreed that they received appropriate feedback on their performance. Only 42% were satisfied with the availability of clinical pharmacy leadership, however, which is not a surprising finding given that the Emergency Department does not have a designated clinical pharmacist.

As has often been the case with safety climate surveys in other organizations, the question that received the most negative response was, "The senior leaders in my hospital listen to me and care about my concerns." Only 30% agreed with this statement, while nearly 50% disagreed.

Several questions elicited responses that were either neutral or distributed fairly evenly from one end of the scale to the other. These questions (5, 6, 19, and 19) focused on the overall attention of the clinical area and organization to patient safety as a priority.

Safety briefings or huddles are one specific safety strategy recommended by the Institute for Healthcare Improvement (2004b). Nearly 90% of respondents agreed that "Briefing personnel before the start of a shift is an important part of safety", and yet less than 30% agreed that "Safety briefings are common here."

Analysis of the written responses to the open-ended questions provided additional information (Appendix G). The most frequent responses to the question, "How have you prevented a patient from being harmed?" were by checking medications, teaching and communicating with parents, and preventing accidents through the use of side rails. When asked how they thought the next patient in the Emergency Department would be harmed, respondents most frequently identified long wait times, medication errors, accidents such as falls, and inadequate monitoring due to understaffing. As to how such harm might be prevented, the most

common suggestions were through safe medication practices and improved staffing levels; better incident reporting processes and safety education were also mentioned a number of times.

In addition to providing me with an overall picture of the beliefs and attitudes in the Emergency Department with regards to safety, the results gave me a baseline against which to measure the effectiveness of deliberate application of safety strategies in the future. Although outside the scope of my project, I plan to repeat the survey with the Emergency Department team six to twelve months after the implementation of the new strategies to obtain quantitative data demonstrating their effectiveness.

Findings from Interviews

Six people (4 nurses and 2 physicians) who work in the BCCH Emergency Department were interviewed separately.

Keeping Patients Safe and Learning from Experience

At the beginning of the interviews, participants were invited to share an experience where they had acted to prevent harm to a patient, or improve quality of care. Some people told very specific stories involving a single event; others spoke of initiatives they had undertaken to effect positive change on a larger scale. All of them noted that they had learned from their individual experiences and made changes in their own practice in order to provide safer, better care. As one person explained, "I think that you know through experience what to do, what works and doesn't work, and you try to implement some systems that work better." In other words, "I've developed ways of doing things that keep me safe."

When learning from an experience, interviewees described taking one of three courses of action:

1. They kept the information to themselves and integrated it into their own practice. For example, one person said, "When I saw how it affects a family, it influenced me to be more aware. So, now I'm very aware of the environment that a family would walk into."

2. They shared their learning with a small group, usually in an informal way, but occasionally by undertaking a small-scale project--"We're doing those all the time"--and hoping for uptake from others. As one interviewee said,

> There are some nurses who have taken these initiatives on themselves. They may just do it with a few, a little group of them may talk about it, and that may be the end of it and it doesn't, kind of, go forward.

3. They told a leader about their experience. If they chose this course of action, sometimes they saw a change initiated but sometimes they perceived that the issue was not dealt with or that no change occurred, as shown by this example:

> There is nothing worse than saying, "Something needs to be done", somebody nodding their head, yes, they totally agree with you, and finding nothing is done, because ultimately, what ends up happening is people say, "It's useless, why bother?"....It's the false expectations that are the problem.

Reasons suggested by interviewees for lack of action by leaders in these situations included competing priorities, not enough time, and distance from the clinical setting resulting in a lack of appreciation for the importance or urgency of the issue. One person summed it up by saying,

> It's not a question, at times, of people not listening, it's a question of not doing anything. So it's not just a question that they can respond--they can--but it's just a question of whether they have the resources and the *will* to do anything.

Influences on Thinking about Patient Safety

Participants were asked to describe factors that had influenced their thinking about patient safety. All described a combination of internal and external influences.

Internal influences: Vision, beliefs, and values.

Both nurses and physicians articulated a strong desire to give excellent, safe care to their patients, a desire that came from within. They described their work as their "focus" and "passion" and related it to their own beliefs, values, and sense of personal accountability and responsibility. As one interviewee said, "I think, for myself, my morals of caring are about the best quality of care for the patient." Another said,

> I work from the premise that every single patient is somebody's baby. If you don't take care of it, who will? You need to take ownership of what you can and can't do. It's my integrity on the line, too. Every intervention is not micromanaged so it's up to you to make sure you do your best. It comes from my personal beliefs and values. It arises out of who you are as a person.

Some of the people interviewed commented on their choice to work in the BCCH Emergency Department due to its high standards of care, and saw the Department generally as one that would "measure up to any pediatric emergency department anywhere". They spoke about putting the patient first, stating, for example, "It's all about the patient" and "I can make a difference--we can make a difference--to that patient".

However, all participants also talked about their frustration in trying to have safety and quality concerns addressed in a way that eliminated or reduced risk and enhanced their ability to provide optimal care. As one person said,

> When I first came, I wanted to change things, I wanted to give input, but now--it's probably not the best thing, but--when I work, I just do my job, and I focus on what's important to me, and I ignore a lot of the issues, the surface issues, that are in the environment, the workplace, and just try and provide the best patient care I can. I've kind of, it's almost like a giving up thing, because you can only try so much, and it just doesn't really go anywhere.

In some cases, their frustration extended beyond the Emergency Department and was directed at the larger organization and its leaders.

> One questions about the institution and its ability to respond to critical incidents. The fact that this incident…caused such concern to the people here, and it seemed to go unheeded, tells me that there's a systemic problem in terms of dealing with that sort of issue.…They did nothing. And, you know, that is an indictment of this institution.

External influences: People and experiences.

Regarding external factors that had influenced their thinking about patient safety and quality, the answers from the nurses were quite different from those given by the physicians. The nurses readily identified people--educators, leaders, preceptors--who had acted as mentors, coaches, and role models, for example, "There are certain people in the Department that you look to as mentors, you know, some of your colleagues who are a little bit senior to you, or some of the educators." Their relationships with these people had the largest influence on their approach to patient safety. One nurse stated, "I had an instructor that was more the mentor role…she was the first person that ever taught me to look at patient safety and utilize the family and look at all the perspectives." Another said,

> The first two nurses that trained me had over 25 years of experience in pediatric emerg and had practiced in different countries, under different circumstances, doing all kinds of procedures that nurses didn't even do, don't even do here…they used their experience, and evidence, and background, and just personal experience of what they'd seen…and watching them approach physicians and ask questions...and being assertive, and really looking out for the patient, that was how I learned.

The value of the preceptor relationship and the coaching role was emphasized, as was the important influence that good front-line nurse leaders can have on staff. "I learned a lot from a leader that was very focused on teamwork, and everything was about team and communication and functioning as a team; she really valued that in keeping patients safe."

The nurses also identified "being in an environment where it's safe to ask, where you're not looked at as incompetent or stupid" as being an important part of learning, particularly in being able to question physician decisions or actions as part of protecting the patient.

The physicians interviewed pointed first to their own experience and "first-hand knowledge" as informing their thinking about safety: "So what you do is, you have experiences." Knowledge of standards of care and evidence-based practice was mentioned, as was appreciation for data and research findings. Awareness of the larger system also played a role. "I tend to look at overreaching strategies or general solutions, as well as looking at each case individually."

Safety Issues and Solutions

Every person interviewed commented at least once on the complex nature of the Emergency Department. It was described as "a busy department with crazy things happening" and "a real place for potential of everything; all of the unexpected happens there." As one

participant said, "You've got huge variation in population and lots of different presenting problems, you have no idea what's coming through the door from minute to minute." Further,

> You're seeing patients for a very brief time. There's a little time frame that you've got. They had a history before they've come in; they'll have a history after they leave your Department. What you try to do is predict what's going to happen. And sometimes, it's unpredictable; other times, the writing's on the wall.

There were several comments about the population commonly served by the Emergency Department, which tends to be non-critically ill, and the resulting sense of complacency that sometimes develops. As one interviewee noted, "It's hard to keep that sense of alertness up; we should never be surprised"; another observed the challenge of establishing systems to make sure all staff are prepared for critical events like resuscitations when the resuscitation room is not used very frequently for that purpose.

The theme of the Emergency Department as the entry point to the hospital came up several times. The Department was described as the "front door to the community" and the "public face of Children's; for lots of families, we're the only contact they have with the hospital." While not necessarily a safety issue, the quality aspects of this public relations role and its impact on patient and family satisfaction were recognized.

Interviewees easily identified safety issues within the Emergency Department, and the themes were very consistent among all those interviewed (Appendix G). They were also very willing and able to suggest many creative and practical potential solutions, some large and some small. Most of the participants became quite animated and energized during this part of the interview, offering lots of suggestions about safety, quality, efficiency, and more.

> I'm one of these "ideas" persons and I'm aware of a lot of things, but sometimes I don't say them--articulate them--out loud. But I think that things are doable--are doable! Oh, I've got hundreds [of ideas], lots of little things.

However, as one person noted,

> The easy system is to develop tools to address concrete concerns. The challenging part, within our hierarchical system, is to develop trust and ability to empower people to use their skills to work together more effectively. 'Cause I think that would help.

There was some frustration evidenced at the lack of a forum to bring issues and ideas forward to the larger team "so that people could appreciate the common threads." There was acknowledgement that communication is "a huge issue, I mean, how do you communicate changes to everyone? I think we're over 100 staff now, so getting everybody on the same page is hard." There was concern about the time it takes to participate in meetings and projects, particularly with how front-line staff can find the time to be involved. Showing appreciation for people who do contribute was also considered important.

> Recognizing that, and displaying it wherever you can--what those people are doing--so that other people are more likely to want to participate down the road, that's critical. But I feel that often the bedside nurse is not recognized for the innovative things she's doing.

Barriers to Change and Overcoming Them

The theme of change, both in terms of the number of changes the Emergency Department staff have experienced in the past, and a perceived lack of positive results, was prevalent in most of the interviews. In identifying barriers to change, some interviewees pointed out tangible obstacles, noting that: "money is always an issue." A lack of resources to support change

initiatives related to quality and safety was a common issue that was felt to be a barrier to change.

> I think there needs to be infrastructure support….It's considered to be academic to do research, but it's not considered to be academic to do quality assurance. There's an expectation that quality assurance is done, but there's no support for it, like, zero.

Another person pointed out the need for clear leadership in successfully effecting change.

> I think the buck has to stop with somebody and somebody has to be responsible for it. I think you need to identify an individual who will be responsible for listening to those issues and who will deal with them.…somebody that would be able to say, "This as a problem, this was the proposed solution, and this is the outcome."

Other participants described people's *mental models*--assumptions that influence how we see the world and take action (Senge, 1990)--around change, for example, "I think the biggest barrier there is just the attitude of, 'Been there, done that, why should I do it again?', because they're not seeing sustainability." Another person observed that "People don't like change, and if you make a change and there's a small glitch in it, they are very quick to criticize." Further,

> People went into medicine to care for sick patients and people went into nursing to care for sick patients, and they all have different skill levels around understanding a bigger picture. So, often, colleagues don't have the foresight to see where this is going, so you need to take these tiny, little steps, which is frustrating.

There was a general belief among participants that, given adequate leadership and support (e.g. expert help with improvement processes and assistance with data management), staff in the Emergency Department would be willing to engage in change initiatives around quality and safety, particularly "if you involved the people."

> I'd like to think that if we have something that makes sense for safety and it's presented in the right way by the right people that have the respect of all the staff, the staff will listen, and maybe within their own, so that these are people that they work with, that they can go to as mentors with questions, or change that's not being sort of forced down them, they would just need a lot of supports along the way to ensure that that happens.

Most participants at some point remarked upon the importance of leadership within the clinical area as a means to both overcoming barriers to change and implementing solutions. "I just think that in an Emergency Department you need good, strong leadership. You need people that listen to you and that seem to take action." The role of the leaders in giving feedback to staff was also mentioned as a way for leaders to show respect for the work people do, and to either recognize their efforts or help them to improve.

Teamwork was an area identified by some participants in relation to overcoming barriers to change and promoting safety. Two distinct themes related to teamwork in the Emergency Department emerged. First, the majority of those interviewed viewed teamwork within the Department favourably. Most people felt that "the nurses and physicians work really well together", although some people acknowledged that "teamwork can always use a tune-up." Importance was assigned to the ability of the team to "criticize and feel trust", and to demonstrating respect for colleagues. The role of families as a key part of the team was also mentioned.

The second teamwork theme arose only in the interviews with nurses. Some participants described a "hierarchical" structure in the Emergency Department, which requires bedside nurses to communicate with physicians through a charge nurse. While interviewees recognized that the

reasons for this approach were related to efficiency, some people felt that this process presented an obstacle to the development of strong interdisciplinary teamwork.

> There's quite a hierarchical, demoralizing power authority tree….I think the doctors and bedside nurses need to communicate with each other a little more, and have more of a trusting relationship. It's important to work as a team…it's the essence of team that's missing: teamwork….I would make it more of a collaborative partnership. There's a lack of autonomy, you're frustrated, you don't feel the environment is very team-oriented.…I don't think it promotes learning [or] promotes teamwork.

Findings from Nurse Educator/Intern

"Positive measures of the observable degree of effort expended by organizational members have been identified as [an]…effective approach to measuring the degree to which an organization has implemented a safety culture" (Page, 2004, p.308). Some of these measures include the percentage of staff involved in safety initiatives or learning, the number of safety projects underway, and the amount of meeting time used to focus on the safety agenda (Carnino, 1998). Using some of these measures, the nurse educator provided information about safety and quality activities she has initiated in the Emergency Department since completing the internship program.

In addition to attending a recent patient safety conference where she was able to learn from and network with others, the nurse educator had established and was co-chairing an interdisciplinary Quality and Safety Committee for the Department, which includes Departmental leaders. The Committee had identified four projects aimed at improving safety and quality and established project teams, which had begun to work on improvements. Following the first Committee meeting, the nurse educator said,

> It was great! I felt there was a lot of enthusiasm. We had a good cross-section of staff, we actually had six staff nurses, and physicians, so we just started to brainstorm, then we did a dot vote on what we thought were the priorities.…and people have been working on the projects that we identified.

Another initiative resulted in the creation of a process for sharing learning arising from reported adverse events.

> Even something as small as consolidating the incident reports and giving that information back to the staff so they know what kinds of things are happening and they'll watch when they encounter the same thing is huge.…It's early days yet, but I feel like it's huge.

The biggest challenges the nurse educator identified were finding the time to dedicate to safety and quality activities and "showing success".

> [Leaders] are supportive, but time is huge, but safety is number one. And people, they want to see results. And right now is the golden opportunity because people actually have some hope again, and they're all charged up, and if it's going to fall flat, then they'll stop trying.

Study Conclusions

Internal Motivation and System Support

The study findings confirm a theme found throughout the patient safety literature, which is that most health care providers are internally motivated to give the best care possible to their patients (Institute of Medicine, 2001). As the interviews demonstrate, this motivation is based on their personal values, often the same values that led them into their careers in the first place. Along the same lines, the survey results show that personnel in the Emergency Department take personal responsibility for patient safety. The important role played by individual staff members

in developing a culture of safety was recognized by Kohn et al. (2000), who stated, "a major force for increasing patient safety is the intrinsic motivation of health care providers, shaped by professional ethics, norms and expectations" (p. 23). From a patient safety perspective, therefore, it is not enough to remind staff to be careful in their work, as they are striving to do their best already (Institute of Medicine, 2001). Our systems must support them by promoting safe care and reducing the likelihood that they will make a mistake or inadvertently cause harm (Leape, 1994). This approach is important not just for patient safety but to protect staff from the devastating experience of harming a patient they were trying to help.

Leadership, Vision, and Values

Although most of the people interviewed felt a connection with BCCH and what it stands for, both the interviews and the survey results show that there is a sense of disconnect between the Emergency Department staff and the leadership of the organization. This is an important point, because people need to see consistency between their own values and those the organization has identified as being important, which are represented by the actions of the leaders (Callahan & Ruchlin, 2003). If patients really are first and results really do matter (PHSA, 2002), and if the staff are the heart and soul of the hospital's work (British Columbia Children's Hospital [BCCH], 2004), then staff must see the organization's leaders acting on those values in ways that are real and tangible. "Leadership must 'walk the talk' to build credibility of shared values by demonstration, not by articulation" (Callahan & Ruchlin, p. 297). Disparity between leaders' words and actions creates an atmosphere of distrust, dissatisfaction, and disillusionment, which has an overall negative impact on the work environment, affecting both staff and patients (Auditor General of British Columbia, 2004). Conversely, individuals who feel a personal connection to the vision of the organization through shared values and

beliefs, and who feel senior leaders listen to them and care about their concerns, are often inspired to contribute more of themselves to their work and realize achievements they had not previously imagined, to the benefit of all. "Leadership…is based foremost on a relationship between the leader and follower(s)" (Burns, cited in Page, 2004, p. 109). Therefore, regular opportunities for staff to make meaningful connections with senior leaders must be found.

Sharing Learning

The survey safety climate mean score indicates that the culture in the Emergency Department makes it easy for staff to learn from the mistakes of others; however, the interviews demonstrate that while staff members learn valuable lessons as individuals, they don't always have a means to share their learning. While individual learning is the first step towards change and improvement, shared learning is key to the creation of a learning organization (Senge, 1990), which in turn is an essential part of a culture of safety (Reason, 2000). Baker (2003) also pointed out the link between individual development, organizational improvement, and health-system performance. And, there is no doubt that learning from the experiences of others accelerates improvement and change. "The value of history lies in the fact that we learn by it from the mistakes of others, as opposed to learning from our own which is a slow process" (Sykes, cited in Australia Patient Safety Foundation, 2001, p.1). Ways to help staff regularly share their learning need to be integrated into the routine practice of the Emergency Department.

Solutions from the Front Line

As Berwick (1994) observed, good ideas are abundant in health care, and the Emergency Department is no exception. The interview participants had some great ideas to share; Cook, Hoas, et al. (2004) found similar results in their study, noting that, when asked, health care providers said they could envision interventions that would reduce the risk of error and make the

system safer. As noted in the literature, those who are closest to where the care is provided are usually in the best position to both identify issues and suggest solutions, and are key to the success of any quality improvement initiative (University of Michigan, 2002a; Gantz et al., 2003). Most interviewees were enthusiastic about participating in improvement initiatives. The response so far to the work initiated by the nurse educator demonstrates that staff is interested in being involved, particularly with regards to attending meetings and working on projects. In order to make the best use of people's ideas, they need a means or a forum to bring their thoughts and suggestions forward to the team, time and support to be involved in projects and initiatives, and ways to learn processes and methods related to change, improvement, and safety to be successful in their endeavours.

Safety as a Priority

According to the survey results, the staff is spilt roughly in half in their belief that their suggestions would be acted upon if they shared them with their leaders; this view is supported by the interview findings that sometimes leaders act on an issue, and sometimes they do not. Although there may be valid reasons why actions were not taken, inaction may cause some people to believe that their input has been discounted or is not valued (DePree, 1989). Communication from leaders about decision-making and prioritization would help address this issue. Staff may also interpret a lack of response to mean that safety and quality are not priorities for leaders, as shown by the responses to the survey questions regarding safety as a priority (questions 5, 15, and 19), which range from neutral to negative. People take their cue from their leaders about what is important (Kouzes & Posner, 2002), so such lack of response may have far-reaching, negative implications. However, attention from leaders to safety, quality, and learning reinforce these components of culture as vital to the organization (Weigmann et al.,

2002). Using a mechanism like safety briefings (Institute for Healthcare Improvement, 2002b), which the survey respondents identified as important but rarely occurring in the Emergency Department, could be one effective strategy to bring constantly reinforce safety as a priority.

Learning, Change, and Improvement

While change was not a focus of the survey, the interview findings show that sometimes when changes are considered or attempted in the Emergency Department to improve quality or safety, people become frustrated. According to Bataldan and Stoltz (cited in Berwick, 1996), if people are dissatisfied with the current state of affairs, they must choose between frustration and change, but in the Emergency Department they seem to be experiencing both. Staff had trouble identifying a specific person or group charged primarily with providing structure and process for initiatives, or a standardized, reliable way that outcomes were measured and analyzed.

In any change process, leadership is needed so people know whom to go to and what to expect (Senge et al., 1999). Process standardization is needed to ensure that change management and project management are appropriately attended to. These methods help the organization and its employees become more disciplined in their thinking and more attentive to details of work processes (Garvin, cited in Page, 2004). And, because results matter (PHSA, 2004), measurement is needed to support the interconnected elements of learning, change, and improvement (Spencer & Jordan, 2001; Berwick, 1996): to demonstrate that the learning that has taken place has resulted in a change, and that the change has resulted in an improvement (Langley, Nolan, Nolan, Norman, & Provost, 1996).

As noted in the interviews, people need to see results to encourage them to be involved in change and to change their mental models about change (Callahan & Ruchlin, 2003). This feedback loop also serves to reinforce the actions of staff in sharing their learning and reporting

errors, which in turn results in more change and improvement (Cook, Montori, et al., 2004). Leadership, knowledge, infrastructure, and tools are needed to support all aspects of the change process and to develop a just culture, a reporting culture, a learning culture: all components of safety culture (Reason, 2000).

Despite some of the challenges interviewees described related to change, they believed that Emergency Department staff would be supportive to change initiatives related to safety if they were "implemented at the right time, in the right place, in the right way, and by the right people" (Cook, Montori, et al, 2004, p. 1224). The University of Michigan (2002a) supported this perspective, having found that

> When presented with effective methods for improving systems that would result in safer health care delivery, there is a willingness on the part of clinicians…to alter clinical practice. This willingness to adopt change is further enhanced when initiatives are backed by leadership support and the organization has removed barriers to learning, such as seeking culpability for error. (p. 9)

Safety Awareness

There is a general awareness of the Emergency Department as a high-risk environment, which creates a sense of vigilance and preparedness on the part of staff. This awareness is one of the essential components of a high-reliability organization, is fundamental to establishing a culture of safety (Ruchlin et al., 2004), and is a great foundation to build upon in developing a safety culture in the Department.

Communication and Teamwork

The issue of hierarchical communication in the Emergency Department bears further investigation due to its potential negative impact on teamwork, communication, and learning.

The study does not measure teamwork specifically, and none of the data collection tools were designed for that purpose, so it is hard to say how significant this matter is, but a hierarchical structure that requires information to be verbally transmitted from a nurse, to a charge nurse, to a physician, and then back the other way is potentially problematic due to the errors in communication that may occur in such a many-layered process (Reason, 2000) and the time that may elapse. In addition, hierarchical structures like this tend to pose barriers to teamwork and learning and may make the authority gradient more pronounced (Reason).

Internship Program

The internship program is aligned with the findings of the literature review (Institute of Medicine, 2001; University of Michigan, 2002b) and with the perceived needs of staff in the Emergency Department as demonstrated by the survey responses, the interview themes, and the nurse educator's observations. The internship program content (Appendix A) includes information on leadership, evidence-based practice, adverse event management and analysis, teamwork, communication, and patient safety, plus tools for quality improvement and risk assessment, which are all elements of a multifaceted strategy to support a culture of safety (Page, 2004). The approach taken is consistent with principles of adult, self-directed learning described by Spencer & Jordan (2001).

The internship program target group of nurse educators is an appropriate one due to their role in front-line leadership and their ability to influence others as role models, coaches, and mentors (University of Michigan, 2002a; Page, 2004). Other front-line leaders could benefit from the internship program to standardize the approach of the front-line leadership group to safety and quality, to share the workload related to safety and quality activities, and to emphasize the connection between leadership and quality (Leatt & Porter, 2003).

The approach taken to the internship program fits with the description nurses gave during the interviews of factors that influenced their thinking about quality and safety, which largely involved people and relationships. Although the internship program follows a self-directed learning model based on adult learning principles (Spencer & Jordan, 2001), it relies on the interaction between program staff and learners and the development of mentoring and coaching relationships to achieve success (Donner & Wheeler, 2004). These relationships form the basis of ongoing collaboration and connection between the clinical programs and the Department of QS&RM, with the goal of developing a community of practice (Senge et al., 1999) at C&W centred on patient safety.

The interviews raised the possibility that physicians may respond better to different educational methods than those preferred by nurses. Offering safety education in a way that is easily accessible to physicians, directly relevant to their clinical experiences, and available where they work may be more appropriate to their learning styles and needs. Staff in other disciplines, including nursing, who work directly with patients could also potentially benefit from basic safety education delivered in small segments in a variety of accessible ways (Institute of Medicine, 2001; Baker & Norton, 2002).

Study Recommendations

The research question posed at the beginning of this project was, "Is the internship program aligned with recommended patient safety strategies and the needs and priorities of health care providers?" The answer, as demonstrated in Chapter Four, is clearly, "Yes." Given the enormity of the patient safety problem, however, and the overarching strategies required to address it, the internship program alone is not enough. With the addition of other dimensions, the internship program can play a significant role in creating and sustaining safety culture in several

key ways: a) as part of an overall organizational approach focused on developing systems to maximize health care providers' efforts to give safe, quality care, and minimize the risk of error and harm; b) in conjunction with a comprehensive patient safety program aimed at establishing safety as a core value by connecting staff and leadership, encouraging team learning, and improving safety and quality at the departmental or program level; and c) by broadening its scope and diversifying its delivery method to offer safety education to individuals and teams at all levels of C&W. Specific recommendations to achieve these goals are as follows:

1. At both an organizational and departmental level, activities need to be focused on developing systems to support staff in their efforts to give the best care possible, and to minimize the likelihood errors will occur or that patients will be harmed.

2. A comprehensive patient safety program, similar to the one developed by Johns Hopkins Hospital (2003) (Appendix H) that "embraces the learning organization approach" (Callahan & Ruchlin, 2003, p. 297), should be implemented for all clinical programs at C&W as a vehicle for creating and sustaining a culture of safety. The program should incorporate "a vision of safety as a priority, a commitment to replacing systems that don't work, interdisciplinary training that strengthens the health care team, [and] accessible resources that support critical thinking" (Cook, Hoas, et al., 2004). The program should be managed and delivered by the Department of QS&RM, and should include (but should not be limited to) the following components:

a. Clear alignment with the PHSA's commitment to quality and safety as central to patient care.
b. A strategy to bridge the gap between front-line staff and organizational leaders. A strong leadership presence is needed to demonstrate to staff that the hospital lives its

values and values its people, and to help them connect their personal vision with that of the organization. The transformational leadership approach recommended by Page (2004) is the model most likely to achieve this type of alignment. The Institute for Healthcare Improvement's (2004c) Leadership Walkrounds™, as part of the larger patient safety program, would be an excellent first step in this direction. Walkrounds™ allow senior leaders to both demonstrate their commitment to safety and learn about safety issues within a department by making weekly rounds for the sole purpose of having informal, two-way discussions with staff about patient safety.

c. Creation of unit-based or program-based safety and quality committees within the Quality of Care Committee structure in clinical areas where they do not currently exist, and alignment of the Terms of Reference and membership of all new and existing committees with the patient safety program.

d. A means and forum for staff to bring safety issues and ideas forward, and processes to involve them in ongoing quality improvement projects. The unit-based or program-based safety and quality committees, with the support of the Department of QS&RM, could possibly provide this component.

e. Education for all clinical staff about quality, safety, and risk management consistent with the core content of the internship program (i.e. non-punitive error management, adverse event reporting, team learning). This education should be planned and delivered by the Department of QS&RM, and should be offered in an interdisciplinary team format and via a website.

f. Use of the Plan-Do-Study-Act (PDSA) model for improvement (Langley et al., 1996) to implement small, frequent improvement initiatives in the clinical areas. The unit-

based or program-based safety and quality committees, with support from the Department of QS&RM, could oversee this work.

g. Implementation of Safety Briefings using the Institute for Healthcare Improvement's (2004b) approach in order to increase safety awareness among front-line staff, to encourage discussion of experiences and concerns within a non-punitive environment, to share learning, and to promote teamwork. Where possible, a representative of the Pharmacy Department should participate in order to provide expertise on medication safety.

h. Recognition of and appreciation for personnel who act to prevent errors, or who contribute ideas and solutions that result in improved safety outcomes. The "Good Catch" certificates distributed by the Department of QS&RM to people who report near misses are one example of such an activity. Organizational newsletters could be used for this purpose, and a recognition event similar to the annual Excellence in Education Awards Day could be created.

i. Documentation and sharing of results and success stories. The various organizational newsletters, including the PHSA *Pulse,* C&W *Teamworks,* and the Department of QS&RM *Quality Matters* could be used for this purpose, as could electronic media.

3. Tools, resources, and infrastructure to easily allow consistent, meaningful measurement of outcomes and to facilitate reporting on and managing improvement projects and adverse events should be put in place and supported. A web-based incident reporting system, which allows reporting, follow-up, and analysis, is one example; clinical programs and departments also need ready access to electronic tools that are easy to use for quality improvement projects, adequate training in their use, and support from experts, such as staff in

Decision Support Services or Information Management/Information Technologies, on an ongoing basis. Although these resources are required to implement the Patient Safety Program described above, they should be seen as separate and distinct and considered on their own, as they are necessary to support quality and safety improvement efforts of all types within the clinical programs.

4. Departmental and front-line leaders should be encouraged to visibly and constantly put safety first and foremost, and commended and recognized by program and organizational leaders for doing so. One way this could be accomplished is by requiring leaders to include a safety- or quality-related key results statement in their annual performance management plan.

5. The Emergency Department's existing awareness of the area's complexity and risks should be noted and efforts should be made to help staff identify and prepare for situations that are likely to occur but which happen only infrequently. Mock situations and tabletop exercises are methods that have been shown to be effective; these could be trialed in the Emergency Department and, if successful, could be spread to other high-risk areas.

6. The influence of the Emergency Department and its staff on the public perception of the hospital and patient's and families' satisfaction with care should be recognized as a significant quality indicator, measured, and improved as necessary. Consultation with Partners in Care as parent representatives might be useful here.

7. Education in quality, safety, and risk management should be provided to all personnel, beginning with orientation, as a means of supporting a culture of safety at C&W. The internship program is one valid approach to offering such education, and the Department of QS&RM should continue to offer and develop it. Specifically, the Department should:

. Revise the internship program content as necessary to reflect and be consistent with the proposed patient safety program.

a. Continue to offer the internship program to nurse educators and expand the program to include other front-line leaders.

b. Develop the core content of the internship program for online delivery and make it accessible to all C&W staff and physicians.

c. Explore the possibility of having Continuing Medical Education credits assigned to physicians who complete safety education modules.

d. Develop and offer workshops to complement and build on online learning. These sessions should be offered to interdisciplinary teams to facilitate team learning.

e. Develop educational materials consistent with the internship core content and the proposed patient safety program to be provided to all clinical staff and students in their initial hospital orientation.

8. Leaders in the Department of QS&RM should approach leaders of the educational agencies that place students at C&W to explore the possibility of working with these agencies to develop patient safety curricula and team learning activities to students. "Without such training, providers' beliefs and practices may not reflect 'best practices' as far as patient safety is concerned" (Cook, Hoas, et al., 2004, p. 42).

This chapter has detailed the study findings, conclusions, and recommendations. The study found that clinicians in the Emergency Department …Conclusions reached included…Ultimately, the study provided evidence that the QS&RM internship program is solidly grounded in the current, relevant literature and aligned with the issues, concerns, and gaps identified by the health care providers. Recommendations arising from the study focused on

expanding the provision of patient safety education through the internship program and other means as part of a comprehensive patient safety program. Chapter Five will identify the implications of the research for both C&W and potential future projects.

CHAPTER FIVE – RESEARCH IMPLICATIONS

Organizational Implementation

One of the fundamental purposes of the major project is to create the possibility of positive change in the sponsoring organization. Often the result of applied research projects, such as this one, require an organization to undertake changes as follow-up to the recommendations made. This chapter will provide a description of the implementation process and the implications of that implementation for those involved and impacted. Implementing the recommendations made in Chapter Four will have implications for a number of groups and individuals at C&W. One or more recommendations may also have implications for other groups or individuals beyond C&W or the PHSA. The implementation of these recommendations will also be discussed. Particular attention will be paid to the implications if the recommended changes are not undertaken.

Department of Quality, Safety and Risk Management

Internship Program

Expansion of the internship program will require time and attention from staff in the Department of QS&RM, primarily from the Leader, QS&RM Education, but also from the Director, the Leader, Risk Management, and the Leader, Quality and Accreditation. Collaboration with others across the organization, including Learning and Development, Nursing, the various medical departments and groups, and student programs, will be key to the success of widening the scope and accessibility of the internship program and ensuring consistency of approach and information. Time and workload will be issues for everyone, so it will be important to reinforce safety as an organizational priority at all levels and with all groups, programs, and departments at C&W.

Placing a high priority on development of the internship program may mean that other projects have to wait. From a strategic planning perspective, however, it makes sense to allocate more resources to an initiative that aims to achieve system-wide improvements by spreading knowledge using an innovative model with the goal of preventing errors, promoting quality and safety, and protecting our patients from harm. In the longer term, the internship program will help to increase our organizational capacity in the area of quality, safety, and risk management. It also offers an opportunity to create and strengthen relationships and partnerships between the Department of QS&RM and the clinical programs, and beyond--potentially with other PHSA agencies, for example. All of these objectives are an excellent fit with the PHSA and agency strategic directions (PHSA, 2004).

Space constraints have limited the expansion of the internship program to date. Although increased space has been allocated to the Department of QS&RM, the program will not be able to physically expand until additional space is actually available.

Patient Safety Program

A safety program is not something that can be simply acquired and laid over existing organizational structure and function; safety should instead be considered a value and an outcome of organizational processes and actions based on safe practices (University of Michigan, 2002a; Callahan & Ruchlin, 2003). Developing, implementing, and supporting a comprehensive patient safety program will require considerable time and attention from staff in the Department of QS&RM. However, a patient safety program that engages and educates clinical staff and physicians and helps people in leadership roles learn to lead safety and quality improvement in their areas should go a long way towards preventing and solving problems that now are handled by the Department of QS&RM, if our experience echoes that of other agencies,

such as Johns Hopkins Hospital. And, if the model developed by Johns Hopkins Hospital is used, the programs will eventually become fairly independent in running the program. The energy, time, and resources required to develop and implement the program will be a wise investment for the Department of QS&RM to make as a means to creating a sustainable safety culture. And, as Ruchlin et al. (2004) pointed out, "making the creation of a safety culture a signature issue is an excellent strategic decision" (p. 56).

It will be important to tie the patient safety program to work arising from the recent CCHSA accreditation survey of C&W, and to link reporting methods and tools closely to meet the requirements of both programs. The patient safety program may offer an effective means of connecting the work of the programs with that of the Department of QS&RM and the Quality of Care committees at all levels.

Senior Executive Leaders

Both of the C&W Presidents have indicated their support for the internship program in the past. To date, they have relied upon program directors and managers to determine when and if to send front-line nurse leaders from their areas to the internship program, and while participation has been good, ongoing reinforcement of the importance of continued participation in the program will be needed, particularly if the internship program expands to include more than one nurse leader from a program.

Senior leadership support is particularly important in the Leadership Walkrounds™ component of the patient safety program. In addition to the Presidents, the Chief Nursing Officer and the Vice President of Medical Affairs, Quality, Safety & Risk Management could also be involved in this activity. Members of the PHSA Executive or Quality and Access Committee of the Board could also be invited to participate, even on an infrequent basis, as a means of

demonstrating commitment and raising awareness. Walkrounds™ will take time--about an hour a week--but if the literature on safety culture and leadership is correct, it will be time well spent.

Program and Departmental Leaders

The programs continue to pay the nurse leaders their full salary while they attend the internship program, and have to make the decision whether or not to backfill their positions. There are financial implications for the programs if they do replace the nurse leaders, and workload implications if they do not. Program and departmental leaders may need to find creative solutions to address this issue, particularly to ensure the participation of front-line operations leaders in addition to the nurse educator group.

There will also be a need for resources to be designated within the clinical programs to support the implementation of the patient safety program (Pronovost et al., 2004). By rolling out the program to units sequentially, one or perhaps a very few every six months, the overall budgetary impact may be kept to a minimum.

Pronovost et al. (2004) identified middle managers as key to the success of a patient safety program, especially with regards to resolving identified safety issues, providing support for enacting improvement plans, and removing barriers to change. It will also be important for program and departmental leaders to model the way by participating in educational and other activities related to safety, and to look for opportunities to recognize and reward staff for their work in this area.

Safety and Quality Committees

The patient safety program will require evolution of the Quality of Care Committees to align program processes, functions, and reporting with the Committees' mandates. Again, links between Committees, the patient safety program, accreditation, and the Department of QS&RM

are critical. Unit- or program-based Safety and Quality Committees play a central role in the proposed patient safety program and will initially need support to learn processes and functions. However, integrating the Committees with the patient safety program, with support and guidance from the Department of QS&RM, should result in more effective and relevant Quality of Care Committees that are better able to monitor and report on safety and quality at C&W.

Front-line Leaders

Front-line leaders, regardless of their discipline, are essential to building and sustaining a culture of safety at C&W. Through their interactions with front-line staff, they demonstrate the organization's vision and values on a daily basis, enact the principles of a learning organization and a just culture, and constantly reinforce safety as an organizational priority. The internship program is made for and aimed at these leaders, and as many as possible should be supported in participating in it, either in its current version or through other means.

The success of the patient safety program will also depend largely on the involvement, enthusiasm, and work of the front-line leaders. They will need to be given time and support to lead and actively participate in safety and quality improvement projects; these requirements may have some resource implications.

Learning and Development

Some aspects of leadership development are included in the internship program, but a more comprehensive approach to learning about leadership is needed. Work that is taking place within the Learning and Development Department in this area should be supported and viewed as important, not just to help leaders with their management and operations skills, but from the view of patient safety. Philosophically, it will be important to make sure that there is a good fit

between leadership education offered by Learning and Development, the internship program, and Royal Roads University.

The concept of interdisciplinary team learning is also one that the Learning and Development Department should pursue further. To date, most health care education has been provided along disciplinary lines, not to interdisciplinary teams. "Yet successful health outcomes rely on the coordination and integration of efforts across disciplinary boundaries (Doran et al., 2002, p. 55). How can interdisciplinary team interactions and learning best be promoted?

Decision Support Services

As experts in the area of data management and analysis, Decision Support Services have much to offer staff in the programs and departments regarding measurement and reporting. However, resources seem to be limited. This is an area that should be explored to see what support these experts could give to the patient safety program and the resulting improvement projects.

Information Management/Information Technology

Along the same lines as Decision Support Services, Information Management/Information Technology (IMIT) personnel are experts in their field. Again, access to technology to support data collection, measurement, and reporting seems to be limited. This is another area that needs to be explored with regards to providing support to the programs for projects arising from the patient safety program.

Additionally, the Department of QS&RM has been waiting for the past year for IM/IT to implement software to allow the Department to create its own web-based programs and a new webpage to support its evolving work. This delay has had consequences in terms of the Department's ability to expand its services; this problem will become more of an issue as

expansion to the internship program begins. The patient safety program will also rely heavily on the use of web-based learning and tools. Use of tools provided by other agencies may need to be considered.

Despite the potential implications of implementing the recommendations outlined in Chapter Four, the rewards associated with creating a culture of safety at C&W will make the effort worthwhile. In envisioning the future, I was encouraged to read the following description of Sentara Norfolk General Hospital in Virginia, which received the Quest for Quality award from the American Hospital Association on July 21, 2004:

> People are the lynchpin in the Culture of Safety…Leadership is tasked with keeping the culture front-and-center. There are 'safety coaches' in every department. Staff at every level have been educated and trained in technologies and processes, assigned to oversight committees, and are regularly reminded that 'Patient Safety Starts with Me'. Staff are recognized and rewarded for practicing Behavior Based Expectations [which are: pay attention to detail, communicate clearly, have a questioning attitude, hand off effectively, and never leave your wingman] and catching potential errors before they reach the bedside. Sentara promotes a philosophy of fairness that encourages systematic improvements based on learning from errors, yet demands accountability for job performance. (Sentara Healthcare, 2004, ¶ 10)

There are implications for the organization if the recommendations outlined in Chapter Four are not implemented. For the Department of QS&RM, failure to implement the recommended proactive strategies will likely mean that most of the Department's work will remain reactive, responding to problems that have already occurred, rather than shifting to a preventative model for spreading improvement.

As the Institute of Medicine (2001) stressed in *Crossing the Quality Chasm,* "The status quo is not acceptable and cannot be tolerated any longer" (p. 3). Patient safety is a significant and costly problem that will not be solved without deliberate, dedicated effort from all levels of the organization over a long period of time. While individuals and small pockets of concerned people will continue to try to keep their patients safe and to improve the system, widespread improvement requires strategies for learning and change in order to be sustainable in the long term.

Future Research

It was not possible for me to follow all of the paths that appeared throughout this project. Much of the literature about nurses and safety, for example, focused on nurse staffing and nursing involvement in decision-making as important in relation to patient safety. For the purposes of this study, those were not areas I was able to explore. They offer possible topics for future research, however.

Teamwork and its role in patient safety culture was a common theme in the literature, and arose in an interesting way in the interview findings. Research on teamwork team learning, how to facilitate it, and how it impacts safety, quality, and staff satisfaction would be valuable. Surveys that measure teamwork and team function are available and may be useful in this regard. Of note, the Johns Hopkins Hospital (2003) Patient Safety Program now includes a revised version of the Safety Climate Survey used for this project, which incorporates questions related to teamwork.

In terms of the internship program, periodic outcome evaluation will be performed to assess the impact and effectiveness of the program. However, research on the effectiveness of self-directed learning delivered by various methods through the internship program would add

another important dimension. It would also be interesting to examine the impact of safety education that begins upon orientation on clinician practice over time.

Evaluation of the process of implementation and the outcomes of the patient safety program would be most useful for both C&W and other organizations seeking solutions to the problem of patient safety. While some evaluation will be build into the program itself, in depth exploration of the effectiveness of the program on organizational culture would provide useful information even beyond the health care environment to those seeking to make cultural change.

In this chapter, I provided a brief overview of the implications that implementing the recommendations arising from the research project might have on the organization and beyond. Changes will affect the Department of QS&RM, leaders at all levels, Safety and Quality of Care Committees, several support departments, and of course, the staff. The impact of not making the recommended changes was also considered, and possible directions for future research were suggested.

CHAPTER SIX – LESSONS LEARNED

Research Project Lessons Learned

When I first embarked upon the journey of this major project, I wasn't sure where the road would lead. It took some time for me to achieve clarity in my research question, largely because I was trying to solve many problems with one project and was having trouble honing in on a topic that was manageable yet still meaningful and interesting to me. I engaged in considerable dialogue with my colleagues at work and school and eventually, with their wise input, I was able to find my path. I went back to the same people from time to time throughout the project, and occasionally approached others for assistance along the way. Some advice I took to heart, some I mulled over and put aside, but all of it was valuable. I learned that seeking feedback can be very helpful in setting direction and in staying the course.

The proliferation of reports and articles related to my topic during the time I was undertaking my study was astounding to me. Every time I opened a journal, or did an Internet search, or even checked my e-mail, I would find something new had been written about some aspect of patient safety. Staying focused on my topic was a challenge, and sifting through all of the material to determine what was relevant and important was no small task. I had anticipated this situation to some extent, as I knew there were reports due to be published in the first half of the year, and I had decided not to complete my literature review until June. Although some of my colleagues questioned my decision, in hindsight, it was the right one to make as many of the reports and articles I used for my review, particularly those with a Canadian perspective, were released between February and June 2004. It made for a lot of work over a short period of time, but had I not included the recent works, I would have felt that my project was outdated before I completed it.

One thing I realized about my job during the conduct of my study is that I do research every day. I am very committed to evidence-based practice and learning, and in building capacity within my department and within the organization overall. This project was a good fit for me in that it ultimately may contribute to these goals.

The challenge of completing a major project while working in a demanding, more-than-fulltime job, pursuing other educational activities, and trying to maintain some semblance of a life cannot be underestimated! Obstacles along the way, such as job action and labour disruption, get in the way and cause delays, no matter how well one plans. Although I worked on the project in pieces over several months, I found that in order to really analyze and synthesize all of the material, I needed some concentrated time away from work (and pretty much everything else, too!). I am very fortunate to have an understanding and supportive leader and staff, and was able to take some time off to complete the project, but had to do so on relatively short notice. My advice to others embarking on a project like this is to plan ahead to take that time away.

The process of conducting the study reminded me of a number of things that I already knew. The interconnected nature of the healthcare system at every level; the complexity of the system, and how many people it takes to deliver health care; the influence that leaders have and the responsibility that goes with it; the importance of support and respect between colleagues; what it feels like to be part of a close, dynamic team; the power of ideas and innovation; the learning that can happen when people share and are open and excited about their work; the amazing achievements that people can realize, as individuals and teams, when they feel a connection between their own values, beliefs, and goals, and those of their organization; the life-altering impact that even one health care provider can have on a patient or their family, and the

impact that one patient or family can have on health care personnel. All things worth remembering.

As I reach the end of this journey and look forward to the next, I am mindful of the words of Don Berwick, who said, "Every system is perfectly designed to achieve the results it achieves" (1996, p. 620). I hope to be a part of redesigning our system to achieve optimal safety and quality for patients, satisfaction for patients and their families, and an enriching and inspiring experience for health care providers. In closing,

> *Although we are humbled by the enormity of the task, we are also encouraged by increasing awareness, public and professional support, and emerging research on patients' safety. We hope that when we become the patients of tomorrow, we can be cared for in safer and more effective acute care facilities than those in which we work today.* (Cook, Montori, et al., 2004, p. 1229).

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APPENDIX A

Internship Program Manual Table of Contents and Calendar

CHILDREN'S & WOMEN'S HEALTH CENTRE OF BRITISH COLUMBIA
An agency of the Provincial Health Services Authority

DEPARTMENT OF QUALITY, SAFETY & RISK MANAGEMENT
Quality, Safety & Risk Management Internship Program, Level I

LEARNING MANUAL

Table of Contents

Internship Calendar: April 2004

The Internship Program facilitator will notify participants of changes to learning activities on a weekly basis. Bookmark all websites provided to you in your readings. Be prepared to bring questions, comments, concerns from your readings to group discussion sessions.

Week	Activities
Week #1 **Dates:** April 5-9	Obtain Internship Manual from Internship facilitator (Leader, QS&RM Education). Complete Section I: Quality, Safety, Risk Management, and the Internship Program. Review Section II: Introduction to Evidence-Based Practice. Watch video: "First Do No Harm Part 2: Taking the Lead". **Group Discussion.**
Week #2 **Dates:** April 12-16 **Presenters:**	Complete Section II: Introduction to Evidence-Based Practice. Facilitator will arrange group tutorial with Eric Hamber librarian. Review incident reports from your area with Leader, Risk Management. Prepare a list of potential QI projects for your area. Review the following websites for project ideas: http://www.vipcs.org/all_resources.htm and www.qualityhealthcare.org Review Section III A,B,C: Incident Report Tracking and Follow-up, Root Cause Analysis, and Failure Mode and Effects Analysis. Submit weekly up-date report to facilitator. **Group Discussion and Round Table Discussion** (with QS&RM staff).
Week #3 **Dates:** April 19-23 **Presenters:**	Complete Section III A,B,C: Incident Report Tracking and Follow-up, Root Cause Analysis, and Failure Mode and Effects Analysis. Meet with facilitator to discuss this week's learning activities. Discuss and draft QI projects to be completed for your area during the Internship. Review Section IV: Obtaining, Arranging & Presenting Information in a Meaningful Way. Submit weekly up-date report to facilitator. **Group Discussion.**
Week #4 **Dates:** April 26-30 **Presenters:**	Complete Section IV: Obtaining, Arranging & Presenting Information in a Meaningful Way. Arrange to meet with Coordinator, QS&RM Information, for individual support with developing charts, running reports, and accessing the Incident Report Database. Meet with facilitator to discuss this week's learning activities. Finalize projects with facilitator. Seek assistance as needed.

	Review Section V: Creating Quality Partnerships. Submit weekly up-date report to facilitator. **Group Discussion and Round Table Discussion** (with QS&RM staff).
Week #5 **Dates:** May 3-7 **Presenters:**	Complete Section V: Creating Quality Partnerships. Meet with facilitator to discuss this week's learning activities. Discuss with facilitator how projects are moving along. Seek assistance as needed. Review Section VI: CQI: Creating & Maintaining a Culture of Safety. Submit weekly up-date report to facilitator. **Group discussion.**
Week #6 **Dates:** May 10-14 **Presenters:**	Complete Section VI: CQI: Creating & Maintaining a Culture of Safety. Meet with facilitator to discuss this week's learning activities. Discuss with facilitator how projects are moving along. Seek assistance as needed. Review any Sections of the Internship Module, as needed. Submit weekly up-date report to facilitator. **Group Discussion and Round Table Discussion** (with QS&RM staff).
Week #7 **Dates:** May 17-21	Meet with facilitator to discuss this week's learning activities. Discuss with facilitator how projects are moving along. Seek assistance as needed. Review any Sections of the Internship Module, as needed. Submit weekly up-date report to facilitator. **Group Discussion.**
Week #8-11 **Dates:** May 25-June 15	Meet with facilitator to discuss weekly learning activities. Discuss with facilitator how projects are moving along._ Review any Sections of the Internship Module, as needed. Submit weekly up-date report to facilitator. **Group Discussion and Round Table Discussion** (with QS&RM staff).
Week #12 **Dates:** June 21-25	Meet with facilitator for project wrap-up and Incident Report hand-over. Submit typed Internship Summary to the facilitator. Establish plan for on-going support of QI projects after Internship Program. Submit Internship Evaluation form to Facilitator **Celebrate Success!**

APPENDIX B

Safety Climate Survey Tool

Welcome

Welcome to the Safety Climate Survey! As part of the requirement for my Master of Arts degree in Leadership and Training through Royal Roads University, I am engaged in a research study about patient safety culture. As part of my study, I am conducting a safety climate survey using the attached tool developed by the University of Texas and recommended by the Institute for Healthcare Improvement in the United States. My pilot site is the BCCH Emergency Department.

If you choose to participate in the survey, please answer the questions to the best of your ability and submit the form electronically. If you would rather complete the survey on paper, please return it to room F406. All responses will be processed anonymously and only summary data will be published in my final report, which will be available to the public through Royal Roads University. Results will also be published in a future issue of the Quality Matters Newsletter. Submission of a response will be considered your consent to participate in my research project.

If you have any questions, please contact me via e-mail at: ataylor@cw.bc.ca, or by phone at (604) 875-3007. Thank you for your participation!.

Annemarie Taylor,
Director, Quality, Safety & Risk Management

*** 1. I have worked for the hospital for more than 6 weeks.**

Yes
No

*** 2. I work in the Emergency Department at least half time (18 hours per week) or attend the Department to provide services at least 3 times per week.**

Yes
No

Note: If you answered 'Yes' to both of the questions above, please complete and submit the survey. If you answered 'No' to either question, please discontinue the survey and thank you for your participation.

*** 3. Please rate following statements with respect to your specific unit or clinical area. Choose your responses using the scale to the right of each question.**

	Disagree Strongly	Disagree Slightly	Neutral	Agree Slightly	Agree Strongly	Not Applicable
1. The culture of this clinical area makes it easy to learn from the mistakes of others.						
2. Medical errors are handled appropriately in this clinical area.						
3. The senior leaders in my hospital listen to me and care about my concerns.						
4. The physician and nurse leaders in this clinical area listen to me and care about my concerns.						
5. Leadership is driving us to be a safety-centred institution.						
6. My suggestions about safety would be acted upon if I expressed them to management.						
7. Management/leadership does not knowingly compromise safety concerns for productivity.						

*** 4. Please rate following statements with respect to your specific unit or clinical area. Choose your responses using the scale to the right of each question.**

	Disagree Strongly	Disagree Slightly	Neutral	Agree Slightly	Agree Strongly	Not Applicable
8. I am encouraged by my colleagues to report any safety concerns I may have.						
9. I know the proper channels to direct questions regarding patient safety.						
10. I receive appropriate feedback about my performance.						
11. I would feel safe being treated here as a patient, or having my child or family member treated here as a patient.						
12. Briefing personnel before the start of a shift (i.e. to plan for possible contingencies) is an important part of safety.						
13. Safety briefings are common here.						

*** 5. Please rate following statements with respect to your specific unit or clinical area. Choose your responses using the scale to the right of each question.**

	Disagree Strongly	Disagree Slightly	Neutral	Agree Slightly	Agree Strongly	Not Applicable
14a. I am satisfied with the availability of clinical physician leadership.						
14b. I am satisfied with the availability of clinical nursing leadership.						
14c. I am satisfied with the availability of clinical pharmacy leadership.						
15. This hospital is doing more for patient safety now than it did one year ago.						
16. I believe that most adverse events occur as a result of multiple system failures and are not attributable to one individual's actions.						
17. The personnel in this clinical area take responsibility for patient safety.						
18. Personnel frequently disregard rules or guidelines that are established for this clinical area.						
19. Patient safety is constantly reinforced as the priority in this clinical area.						

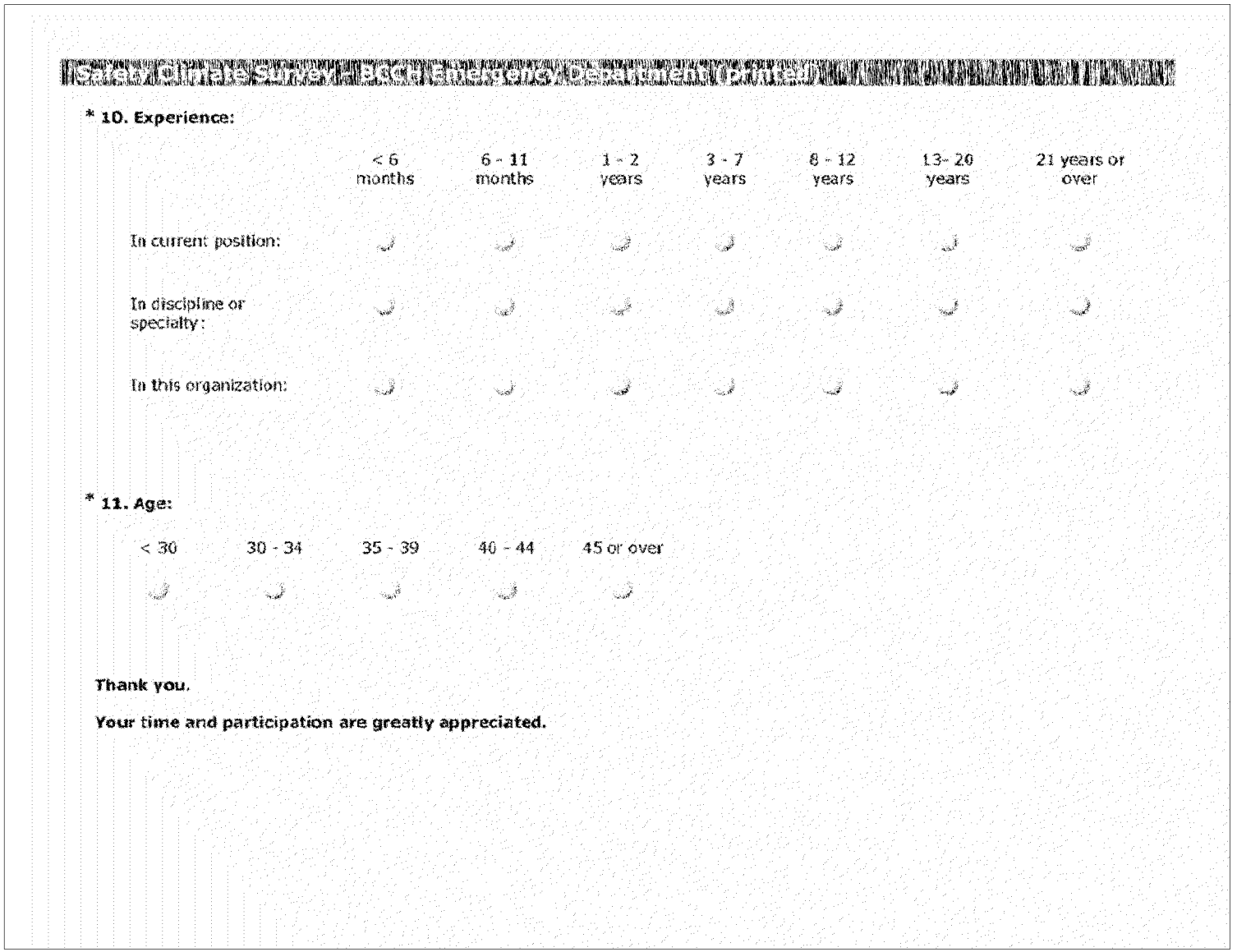
6. How have you prevented a patient from being harmed?

7. How do you think the next patient in the Emergency Department will be harmed?

8. How can we prevent the harm, make the mistake visible or reduce the harm?

*** 9. Position (choose only one):**

- Physician
- Resident/Fellow
- Pharmacist
- Technician (e.g. EEG, Lab, Radiology)
- Nurse
- Nurse Manager/Leader/Coordinator
- Nurse Educator
- Respiratory Therapist
- Physio, Occupational or Other Therapist
- Dietician
- Clerical or Support Staff
- Administrator
- Other (please specify)



*** 10. Experience:**

	< 6 months	6 - 11 months	1 - 2 years	3 - 7 years	8 - 12 years	13- 20 years	21 years or over
In current position:							
In discipline or specialty:							
In this organization:							

*** 11. Age:**

< 30	30 - 34	35 - 39	40 - 44	45 or over

Thank you.

Your time and participation are greatly appreciated.

APPENDIX C

Letter to Potential Interview Participants

Annemarie Taylor, RN, BScN
Master's Candidate, Royal Roads University
Master of Arts in Leadership and Training
Director, Quality, Safety & Risk Management
Children's & Women's Health Centre of BC

DATE, 2004

Dear NAME,

As part of my studies towards the completion of a Master of Arts degree in Leadership and Training through Royal Roads University, I am conducting a research study about patient safety at C&W.

Part of my research will include learning about the experiences, perspectives, influences, and suggestions of nurses and physicians at C&W who are known to incorporate an appreciation for patient safety into their clinical practice. I will be conducting one-on-one interviews with a sampling of these clinicians over the course of the next month and would like to invite you to participate. Participation is strictly voluntary; you are under no obligation to take part if you do not wish to do so. If you do choose to participate, you may withdraw from the study at any time, and any data collected prior to your withdrawal will be destroyed. All information collected will be kept anonymously and strictly confidential; your name will not appear on any documentation related to this project. Each interview will take approximately one hour of your time, and informed consent will be sought from you before the session begins.

XXXXXXXXXXXXXXXX from Royal Roads is my Faculty Project Supervisor, and XXXXXXXXXXXXXXXX is my PHSA Project Sponsor. Should you wish, I will provide you with contact information for either of them regarding this project.

Please reply to me by e-mail (XXXXXXXXXX), voice mail (local XXXX), or in writing (room XXXXX) indicating your interest in participating in this study. If you do decide to participate, please complete the attached consent form, which I will collect from you at the beginning of the session.

I look forward to hearing your thoughts on this topic and sincerely hope that you will consider participating in my project. Thank you very much.

Sincerely,

Annemarie Taylor

APPENDIX D

Informed Consent Form

RESEARCH CONSENT FORM

This research project is part of the requirement for a Master of Arts in Leadership and Training.

The student concerned is **Annemarie Taylor**. Ms. Taylor's credentials with Royal Roads University can be established by telephoning either XXXXXXXX, Dean of Organizational Leadership and Learning Division, Royal Roads University at (XXX) XXX-XXXX or XXXXXXXX, Coordinator, MALT, (XXX) XXX-XXXX.

This document constitutes an agreement to take part in a research project, the objective of which is to learn about patient safety at Children's & Women's Health Centre of BC (C&W).

The research will consist of one-on-one interviews, a focus group, and a safety culture survey using a tool offered by the Institute of Healthcare Improvement. Each interview and focus group meeting is expected to last approximately one hour. The foreseen questions will explore the participants' experiences with patient safety, influences that have helped them develop their perspective, and their suggestions for improving patient safety at C&W.

Interview information will be tape-recorded and transcribed, and focus group notes will be taken in hand-written format. Where appropriate, information will be included, in anonymous format, in the body of the report. At no time will any specific comments be attributed to any individual unless specific agreement has been obtained beforehand. Survey data will be analyzed and presented in summary format in the body of the final report. Anonymity of respondents will be maintained.

A copy of the final report will be housed at Royal Roads University and be publicly accessible.

Prospective research subjects are not compelled in any way to take part in this research project. If an individual does elect to take part, she or he is free to withdraw at any time with no prejudice. Similarly, if employees or other individuals elect not to take part in this research project, this information will also be maintained in confidence.

By signing this letter, the individual gives free and informed consent to participate in this project.

Name (Please Print): _____

Signed: _____

Date: _____

APPENDIX E

Interview Questions

0. Tell me about a situation when you played a key role in delivering safe care to a patient or preventing harm to a patient.

1. What are the influences that had an impact on your thinking about patient safety and quality of care?

2. What do you see as some of the main safety issues in the Emergency Department?

3. What suggestions do you have to solve some of the problems you've described or to make the Emergency a safer place?

4. What barriers to change to you think there are in the Emergency Department?

5. How would you go about overcoming those barriers?

6. Any other thoughts about safety or quality?

APPENDIX F

Survey Results

Responses to Safety Climate Survey - BCCH Emergency Department - May 2004

	Respondent Category			
Response	Nurse & Other n=31	Nurse Leader n=5	Physician & Resident/Fellow n=6	Total n=42
1. The culture of this clinical area makes it easy to learn from the mistakes of others.				
Agree Strongly	8 (26)	2 (40)	1 (17)	11 (26)
Agree Slightly	14 (45)	1 (20)	3 (50)	18 (43)
Neutral	3 (10)	0 (0)	1 (17)	4 (10)
Disagree Slightly	2 (6)	2 (40)	0 (0)	4 (10)
Disagree Strongly	4 (13)	0 (0)	1 (17)	5 (12)
Not Applicable	0 (0)	0 (0)	0 (0)	0 (0)
2. Medical errors are handled appropriately in this clinical area.				
Agree Strongly	7 (23)	1 (20)	2 (33)	10 (24)
Agree Slightly	10 (33)	1 (20)	2 (33)	13 (32)
Neutral	8 (27)	2 (40)	1 (17)	11 (27)
Disagree Slightly	3 (10)	1 (20)	1 (17)	5 (12)
Disagree Strongly	2 (7)	0 (0)	0 (0)	2 (5)
Not Applicable	1 (3)	0 (0)	0 (0)	1 (2)
3. The senior leaders in my hospital listen to me and care about my concerns.				
Agree Strongly	2 (7)	1 (20)	3 (50)	6 (15)
Agree Slightly	7 (24)	0 (0)	0 (0)	7 (18)
Neutral	7 (24)	0 (0)	0 (0)	7 (18)
Disagree Slightly	4 (14)	4 (80)	0 (0)	8 (20)
Disagree Strongly	9 (31)	0 (0)	3 (50)	12 (30)
Not Applicable	2 (7)	0 (0)	0 (0)	2 (5)
4. The physician and nurse leaders in this clinical area listen to me and care about my concerns.				
Agree Strongly	14 (47)	2 (40)	3 (50)	19 (46)
Agree Slightly	9 (30)	1 (20)	1 (17)	11 (27)
Neutral	3 (10)	0 (0)	0 (0)	3 (7)
Disagree Slightly	3 (10)	2 (40)	2 (33)	7 (17)
Disagree Strongly	1 (3)	0 (0)	0 (0)	1 (2)
Not Applicable	1 (3)	0 (0)	0 (0)	1 (2)
5. Leadership is driving us to be a safety-centred institution.				
Agree Strongly	1 (3)	2 (40)	0 (0)	3 (7)
Agree Slightly	10 (32)	0 (0)	3 (50)	13 (31)
Neutral	11 (35)	3 (60)	1 (17)	15 (36)
Disagree Slightly	6 (19)	0 (0)	1 (17)	7 (17)
Disagree Strongly	3 (10)	0 (0)	1 (17)	4 (10)
Not Applicable	0 (0)	0 (0)	0 (0)	0 (0)
6. My suggestions about safety would be acted upon if I expressed them to management.				
Agree Strongly	5 (16)	2 (40)	1 (17)	8 (19)
Agree Slightly	8 (26)	1 (20)	2 (33)	11 (26)
Neutral	3 (10)	1 (20)	1 (17)	5 (12)
Disagree Slightly	6 (19)	1 (20)	0 (0)	7 (17)
Disagree Strongly	9 (29)	0 (0)	2 (33)	11 (26)
Not Applicable	0 (0)	0 (0)	0 (0)	0 (0)
7. Management/leadership does not knowingly compromise safety concerns for productivity.				
Agree Strongly	6 (19)	4 (80)	3 (50)	13 (31)
Agree Slightly	5 (16)	1 (20)	0 (0)	6 (14)
Neutral	7 (23)	0 (0)	2 (33)	9 (21)
Disagree Slightly	8 (26)	0 (0)	0 (0)	8 (19)
Disagree Strongly	5 (16)	0 (0)	1 (17)	6 (14)
Not Applicable	0 (0)	0 (0)	0 (0)	0 (0)

Responses to Safety Climate Survey - BCCH Emergency Department - May 2004

	Respondent Category			
Response	Nurse & Other n=31	Nurse Leader n=5	Physician & Resident/Fellow n=6	Total n=42
8. I am encouraged by my colleagues to report any safety concerns I may have.				
Agree Strongly	14 (45)	2 (40)	3 (50)	19 (45)
Agree Slightly	6 (19)	1 (20)	2 (33)	9 (21)
Neutral	5 (16)	2 (40)	1 (17)	8 (19)
Disagree Slightly	4 (13)	0 (0)	0 (0)	4 (10)
Disagree Strongly	2 (6)	0 (0)	0 (0)	2 (5)
Not Applicable	0 (0)	0 (0)	0 (0)	0 (0)
9. I know the proper channels to direct questions regarding patient safety.				
Agree Strongly	15 (48)	4 (80)	4 (67)	23 (55)
Agree Slightly	12 (39)	1 (20)	2 (33)	15 (36)
Neutral	1 (3)	0 (0)	0 (0)	1 (2)
Disagree Slightly	3 (10)	0 (0)	0 (0)	3 (7)
Disagree Strongly	0 (0)	0 (0)	0 (0)	0 (0)
Not Applicable	0 (0)	0 (0)	0 (0)	0 (0)
10. I receive appropriate feedback about my performance.				
Agree Strongly	10 (32)	2 (40)	2 (40)	14 (34)
Agree Slightly	9 (29)	1 (20)	1 (20)	11 (27)
Neutral	5 (16)	0 (0)	0 (0)	5 (12)
Disagree Slightly	3 (10)	0 (0)	2 (40)	5 (12)
Disagree Strongly	4 (13)	2 (40)	0 (0)	6 (15)
Not Applicable	0 (0)	0 (0)	1 (20)	1 (2)
11. I would feel safe being treated here as a patient or having my child or family member treated here as a patient.				
Agree Strongly	21 (68)	4 (80)	5 (83)	30 (71)
Agree Slightly	6 (19)	1 (20)	1 (17)	8 (19)
Neutral	3 (10)	0 (0)	0 (0)	3 (7)
Disagree Slightly	1 (3)	0 (0)	0 (0)	1 (2)
Disagree Strongly	0 (0)	0 (0)	0 (0)	0 (0)
Not Applicable	0 (0)	0 (0)	0 (0)	0 (0)
12. Briefing personnel before the start of a shift (i.e. to plan for possible contingencies) is an important part of safety.				
Agree Strongly	23 (74)	3 (60)	3 (50)	29 (69)
Agree Slightly	5 (16)	1 (20)	2 (33)	8 (19)
Neutral	2 (6)	1 (20)	1 (17)	4 (10)
Disagree Slightly	0 (0)	0 (0)	0 (0)	0 (0)
Disagree Strongly	1 (3)	0 (0)	0 (0)	1 (2)
Not Applicable	0 (0)	0 (0)	0 (0)	0 (0)
13. Safety briefings are common here.				
Agree Strongly	3 (10)	1 (20)	1 (20)	5 (12)
Agree Slightly	6 (19)	0 (0)	1 (20)	7 (17)
Neutral	7 (23)	1 (20)	2 (40)	10 (24)
Disagree Slightly	7 (23)	1 (20)	1 (20)	9 (22)
Disagree Strongly	8 (26)	2 (40)	0 (0)	10 (24)
Not Applicable	0 (0)	0 (0)	1 (20)	1 (2)
14a. I am satisfied with the availability of clinical physician leadership.				
Agree Strongly	11 (35)	0 (0)	4 (67)	15 (36)
Agree Slightly	8 (26)	3 (60)	1 (17)	12 (29)
Neutral	3 (10)	1 (20)	1 (17)	5 (12)
Disagree Slightly	7 (23)	0 (0)	0 (0)	7 (17)
Disagree Strongly	2 (6)	1 (20)	0 (0)	3 (7)
Not Applicable	0 (0)	0 (0)	0 (0)	0 (0)

Responses to Safety Climate Survey - BCCH Emergency Department - May 2004

	Respondent Category			
Response	Nurse & Other n=31	Nurse Leader n=5	Physician & Resident/Fellow n=6	Total n=42
14b. I am satisfied with the availability of clinical nursing leadership.				
Agree Strongly	12 (39)	2 (40)	4 (67)	18 (43)
Agree Slightly	11 (35)	2 (40)	0 (0)	13 (31)
Neutral	3 (10)	0 (0)	0 (0)	3 (7)
Disagree Slightly	4 (13)	1 (20)	1 (17)	6 (14)
Disagree Strongly	1 (3)	0 (0)	1 (17)	2 (5)
Not Applicable	0 (0)	0 (0)	0 (0)	0 (0)
14c. I am satisfied with the availability of clinical pharmacy leadership.				
Agree Strongly	3 (10)	1 (25)	1 (17)	5 (13)
Agree Slightly	10 (33)	0 (0)	3 (50)	13 (33)
Neutral	10 (33)	0 (0)	0 (0)	10 (25)
Disagree Slightly	2 (7)	2 (50)	0 (0)	4 (10)
Disagree Strongly	5 (17)	1 (25)	2 (33)	8 (20)
Not Applicable	1 (3)	1 (25)	0 (0)	2 (5)
15. This hospital is doing more for patient safety now than it did one year ago.				
Agree Strongly	2 (7)	1 (20)	0 (0)	3 (8)
Agree Slightly	4 (14)	2 (40)	2 (33)	8 (20)
Neutral	14 (48)	2 (40)	3 (50)	19 (48)
Disagree Slightly	4 (14)	0 (0)	1 (17)	5 (13)
Disagree Strongly	5 (17)	0 (0)	0 (0)	5 (13)
Not Applicable	2 (7)	0 (0)	0 (0)	2 (5)
16. I believe that most adverse events occur as a result of multiple system failures and are not attributable to one individual's actions.				
Agree Strongly	16 (52)	2 (40)	2 (33)	20 (48)
Agree Slightly	9 (29)	2 (40)	3 (50)	14 (33)
Neutral	3 (10)	1 (20)	1 (17)	5 (12)
Disagree Slightly	1 (3)	0 (0)	0 (0)	1 (2)
Disagree Strongly	2 (6)	0 (0)	0 (0)	2 (5)
Not Applicable	0 (0)	0 (0)	0 (0)	0 (0)
17. The personnel in this clinical area take responsibility for patient safety.				
Agree Strongly	11 (35)	1 (20)	4 (67)	16 (38)
Agree Slightly	16 (52)	3 (60)	2 (33)	21 (50)
Neutral	3 (10)	1 (20)	0 (0)	4 (10)
Disagree Slightly	1 (3)	0 (0)	0 (0)	1 (2)
Disagree Strongly	0 (0)	0 (0)	0 (0)	0 (0)
Not Applicable	0 (0)	0 (0)	0 (0)	0 (0)
18. Personnel frequently disregard rules or guidelines that are established for this clinical area.				
Agree Strongly	0 (0)	0 (0)	0 (0)	0 (0)
Agree Slightly	7 (23)	1 (20)	1 (17)	9 (21)
Neutral	6 (19)	2 (40)	0 (0)	8 (19)
Disagree Slightly	6 (19)	1 (20)	1 (17)	8 (19)
Disagree Strongly	12 (39)	1 (20)	4 (67)	17 (40)
Not Applicable	0 (0)	0 (0)	0 (0)	0 (0)
19. Patient safety is constantly reinforced as the priority in this clinical area.				
Agree Strongly	9 (29)	3 (60)	2 (33)	14 (33)
Agree Slightly	6 (19)	1 (20)	1 (17)	8 (19)
Neutral	5 (16)	1 (20)	2 (33)	8 (19)
Disagree Slightly	9 (29)	0 (0)	1 (17)	10 (24)
Disagree Strongly	2 (6)	0 (0)	0 (0)	2 (5)
Not Applicable	0 (0)	0 (0)	0 (0)	0 (0)

APPENDIX G

Survey and Interview Themes

Survey Themes

How have you prevented a patient from being harmed?

- Checking, double-checking, or questioning medication (18/31)
- Teaching, showing, instructing, informing, or communicating with parents (12/31)
- Using side rails (10/31)
- Communicating concerns to other team members or leaders (9/31)
- Calling Security (4/31)
- Checking or modifying equipment (e.g. setting alarms) (4/31)
- Monitoring (4/31)
- Addressing staffing issues (3/31)

How do you think the next patient in the Emergency Department will be harmed?

- Deteriorating while waiting to be seen (12/33)
- Medication error (9/33)
- Falling off a stretcher or waiting room chair (9/33)
- Inadequate monitoring or care due to understaffing, staff fatigue (6/33)
- Triage error or missed diagnosis (6/33)
- Overcrowding (3/33)
- Communication problem (
- Misidentification of patient (2/33)

How can we prevent harm, make the mistake visible, or reduce the harm?

- Safer medication practices (10/30)
- Increased staffing levels (8/30)
- Better incident report systems (e.g. anonymous reporting, more feedback) (4/30)
- Safety education for staff (3/30)
- Greater Security presence (2/30)

Interview Themes

Triage

- Processes
- Roles and responsibilities
- Distractions
- Staff safety
- Wait times
- Delayed or missed diagnoses
- Stress of dealing with public

Mental health patients

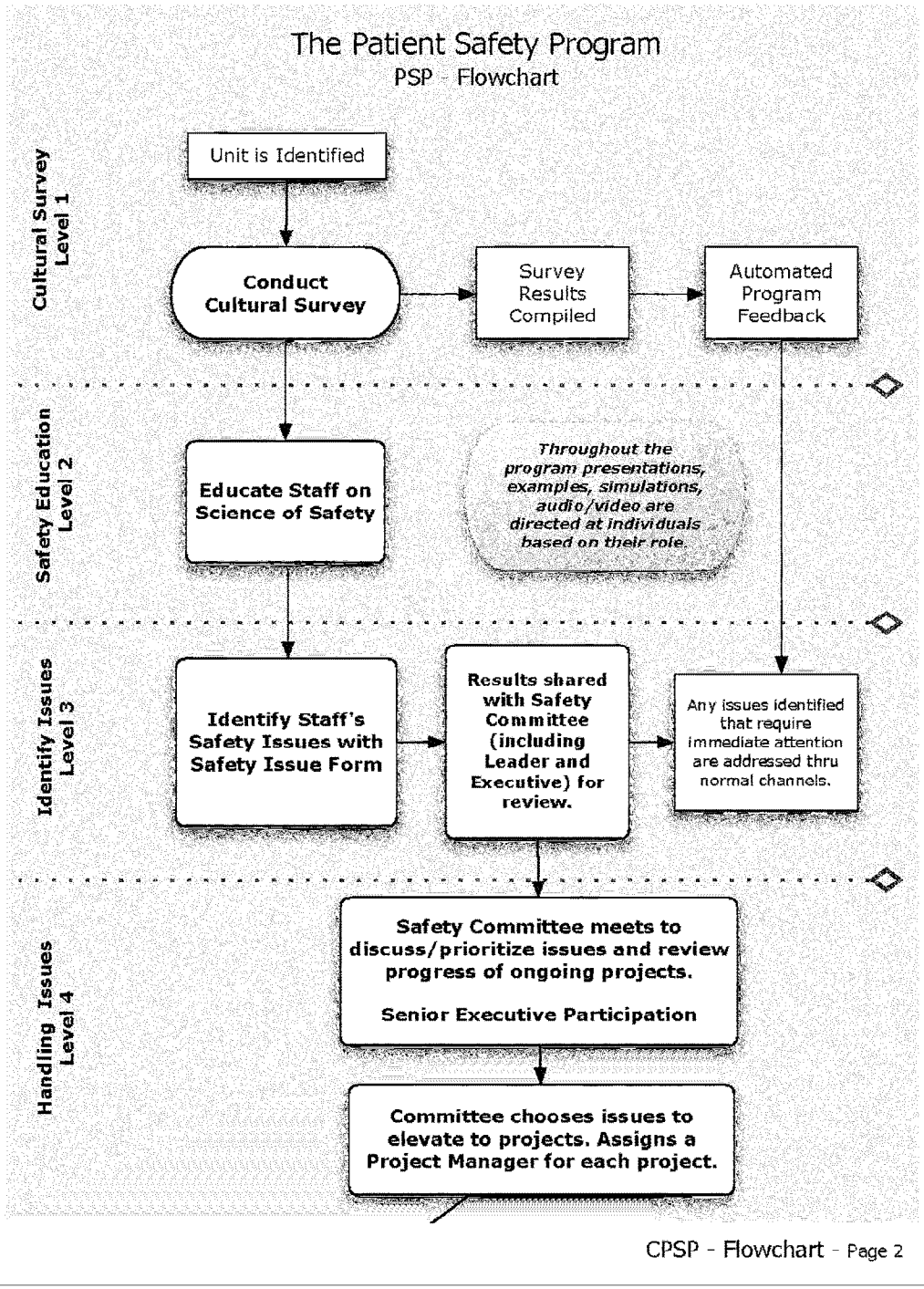
- "Street kids"
- Ingestions
- Suicidal patients
- Elopements
- Ministry for Children and Family Development issues
- Staff and patient safety

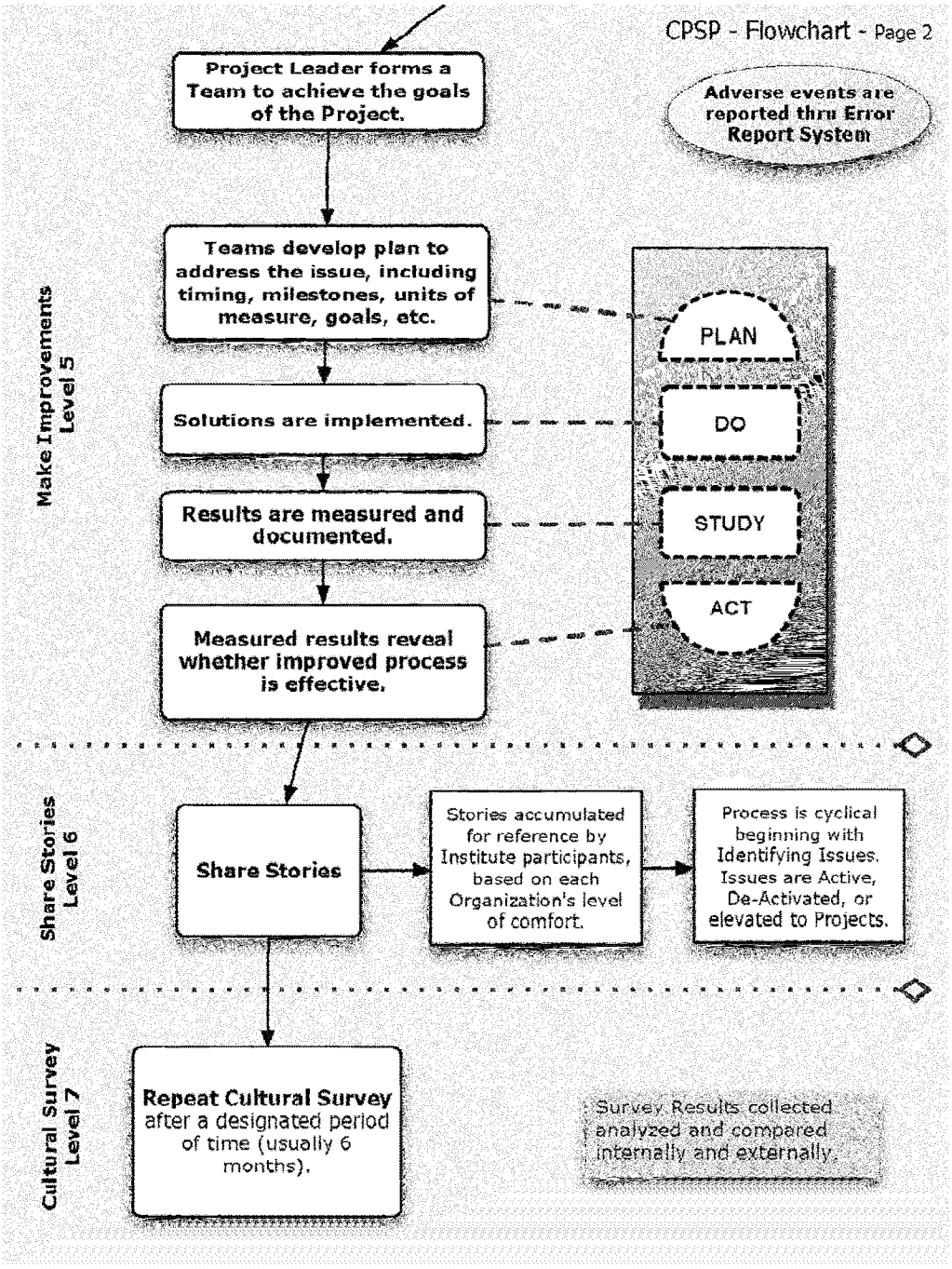
Teaching parents

- Time for teaching
- Tools for teaching
- Language barriers

APPENDIX H

Patient Safety Program Flowchart





Note. From "The Patient Safety Program", by The Patient Safety Group, 2003, retrieved from https://patientsafetygroup.org/program/media/flowchart.pdf. Copyright 2003 by The Patient Safety Group and Johns Hopkins University. Reprinted with permission.

APPENDIX I

Glossary of Terms

Active failure: an event/action/process that is undertaken, or takes place, during the provision of direct patient care and fails to achieve its expected aims. While active failures may contribute to patient injury, not all do.

Adverse event: one of the following:
(1) An unexpected and undesired incident directly associated with the care or services provided to the patient; (2) An incident that occurs during the process of providing health care and results in patient injury or death; or (3) An adverse outcome for a patient, including an injury or complication.

Complication: a disease or injury that arises subsequent to another disease and/or health-care intervention.

Contributing factors: the reason(s), situational factor(s), or latent condition(s) that played a role in the genesis of an adverse outcome.

Critical incident: an incident resulting in serious harm (loss of life, limb, or vital organ) to the patient, or the significant risk thereof.

Incident: events, processes, practices, or outcomes that are noteworthy by virtue of the hazards they create for, or the harms they cause, patients.

Latent condition: the structural flaws in the system, or 'resident pathogens', that predispose to adverse outcomes.

Medical error: the failure to complete a planned action as it was intended or when an incorrect plan is used in an attempt to achieve a given aim (NOTE: Synonymous with error and human error).

Patient safety : the reduction and mitigation of unsafe acts within the health-care system, as well as through the use of best practices shown to lead to optimal patient outcomes.

Risk: the probability of danger, loss or injury within the health-care system.

Risk management in health care: organizational activities designed to prevent patient injury or moderate the actual financial losses following an adverse outcome.

System: a set of interdependent components interacting to achieve a common aim.

Adapted from the *Canadian Patient Safety Dictionary* (National Steering Committee on Patient Safety, 2003).