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IN THE PROVINCIAL COURT OF MANITOBA

IN THE MATTER OF: ***THE FATALITY INQUIRIES ACT***

AND IN THE MATTER OF: **ETTIE JUNE MORRIS, Deceased**

APPEARANCES:

Inquest Counsel: Mr. Kerry Pearlman

Inquest Coordinator: Ms Betty Owen

For the St. Boniface General Hospital and the Winnipeg Regional Health Authority: Messrs. William Olson and Sarantos Mattheos, assisted by Mr. Robert Olson.

For Doctors Carla Chrusch, Herman Lam, Eytan Weinberg, Dean Bell: Mr. Tyler J. Kochanski.

For Nurse Danny Chin: Mr. Hymie Weinstein, Q.C.

For Nurse Jackie Kulczycki: Mr. Richard J. Wolson, Q.C.

For Nurse Rose Neufeld: Mr. Tim Killeen and Ms Gerry Wiebe.

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HOLDING OF INQUEST

[1] On January 4th, 2002, while a patient on the Surgical Intensive Care Unit of the St. Boniface General Hospital, 83 year old Ettie June Morris died of an excessive, non-prescribed infusion of a solution containing potassium. The day before her death, police had found her immobile at the foot of the stairs in her home. She was admitted to the hospital at that time for treatment of a fractured left femur. While awaiting hip surgery, she died suddenly of cardiac arrest.

[2] On February 10th, 2003, the Chief Medical Examiner of the Province of Manitoba called for an inquest to be held, pursuant to section 19(2) of *The Fatality Inquiries Act*, for the following reasons:

1. to determine the circumstances under which June Morris received an excessive dose of potassium;

2. to determine what, if anything, can be done to prevent similar deaths from occurring in the future.

[3] As the Provincial Court Judge hearing this Inquest, I heard evidence from 37 witnesses over the course of 25 hearing days between September 20th, 2004 and March 9th, 2005. *The Fatality Inquiries Act* mandates that I prepare and provide a written report of this hearing to the Minister.

[4] *The Fatality Inquiries Act* affords me the discretion to recommend changes in programs, policies or practices of the Government and relevant public agencies or institutions and in the laws of the province that, in my opinion, would help to reduce the likelihood of deaths occurring in similar circumstances. I am not allowed to express any opinion or determine culpability in a manner that identifies anyone as a culpable party. It is not the function of an inquest to assess blame: its function is to recommend change that might help prevent future harm.

[5] I want to acknowledge at the outset the invaluable help I received from Betty Owen, the Inquest Coordinator, before and during the hearing. Her logical and efficient organization and tabulation of voluminous documents and medical evidence was of great assistance to me and to everyone else involved in the hearing. I also wish to thank Mr. Pearlman for his assistance and his very competent presentation of the evidence.

INTRODUCTION

[6] A Surgical Intensive Care Unit of a hospital provides, as its name implies, intensive medical care for patients who are often in critical condition. Thousands of lives are saved in these units each year. Staff in these units are specialists, trained to offer competent, consistent care to their patients. This Inquest shone a spotlight on one day in the life of one patient in one of these units. A tragedy occurred. June Morris, an elderly woman in very poor health, died because of an excess of medication administered by someone on the Surgical Intensive Care Unit at the St. Boniface General Hospital. The recommendations I make as a result of hearing from the experts – the doctors, the critical care nurses, the pharmacists, the hospital administrators – arise from a better understanding of the difficult and demanding work performed in an intensive care unit. Hopefully this report will provide the general public with an appreciation of the unique challenges of a surgical intensive care environment.

THE EVENTS OF JANUARY 3RD, 2002

[7] While on general patrol on the morning of January 3rd, 2002, Constable Timothy Diack of the Winnipeg Police Service and his partner were dispatched to attend to the home of June Morris. The call to the police had originated from Shirley Wheeler, a good friend of June Morris, because Ms Wheeler had not heard from Ms Morris for a few days. At approximately 9:30 a.m., the officers arrived at June Morris' house to check on her well-being. They forced entry through the rear of the house and found June Morris. She was at the bottom of the stairs, lying on her back, and appeared to Officer Diack to be deceased.

[8] Officer Diack described her house as completely cluttered, full of furniture, garbage bags and newspapers; unfit for habitation. He told the Court that June Morris herself was unkempt and immobile.

[9] Public Health Inspector Michel LeBlanc provided a backdrop to the state of the house and how June Morris may have ended up at the bottom of the stairs. He described a condition known in the field of public health as "Senior Squalor Syndrome". This condition can occur when seniors stop taking care of themselves and their surroundings. A senior's home becomes cluttered and there is a consequent, real risk to the senior owner-occupant of falling. Health effects also can include dehydration, malnutrition and hypothermia. June Morris fit the profile.

[10] Despite the state of the house and the obvious ill health of the woman lying at the foot of the stairs, when June Morris asked Constable Diack what he was doing in her house, he was quite shocked at how lucid she was. He knew that paramedics had been summoned. He noted a swollen leg, but no other marks of violence or injury. He did not want to excite her and was only with her for about a minute and a half to two minutes.

[11] Terence Drysdale of the Winnipeg Fire and Paramedic Services was dispatched to Ms Morris' house and also saw her at the foot of the stairs, after being let in through the front door by the police. He too confirmed that June Morris was very thin and pale and dirty and the house was a mess. He talked to her; she responded. Her left leg was swollen. She was not complaining of pain but she could not move. Her vital signs were normal. She told him that she had fallen down the stairs. She was transported to the St. Boniface General Hospital (SBGH).

[12] Stefanie Mandzie and friend Shirley Wheeler visited with June Morris at about 1500 hours at the Emergency Department at SBGH. Ms Morris was on a stretcher in Emergency. Ms Mandzie said June Morris' spirits were fine and she was alert. They talked about the planned retiree meeting in May, 2002 and the fact that they would travel again together.

[13] At that time, June Morris was 83 years old. She lived alone. Her longtime friend and workmate Stephanie Mandzie told the Court some pertinent personal background about June Morris. They both worked at Trans-Canada Airways, as Air Canada was once known. Ms Mandzie started working there in 1957. She has known June Morris since then. June Morris was a secretary in the personnel department and she was a customer service agent. They both retired in 1985. Air Canada has a retired employee association/club. Ms Mandzie saw June Morris once a month during winters. Once a year, the two of them traveled together to various Canadian cities for the large, system-wide meetings of retired Air Canada employees. They always roomed together in a hotel for the week. The last time they did this was in Calgary in May of 2001.

[14] Ms Mandzie described June Morris as very outgoing when she was out with other people. Her private life was another matter. June Morris was an extremely private person. She was also a strong-willed person. In all the years she had known June Morris, Ms Mandzie had never been invited into her home. None of June Morris' friends had ever been in her house. In latter years, June Morris even purchased her groceries from a company that would leave the groceries on her front porch.

[15] November of 2001 was the last time Ms Mandzie saw June Morris socially. She had lost a lot of weight and was "a bit more unkempt", but in Ms Mandzie's opinion, she was still alert and still had opinions.

WHAT HAPPENED?

JUNE MORRIS' DEATH

[16] After undergoing tests and assessment in the Emergency ward of the St. Boniface General Hospital (SBGH) in Winnipeg, June Morris was admitted to an orthopedic ward in preparation for surgery for a broken hip. Unfortunately, due to her deteriorating health over the next 20 hours, the orthopedic resident physician called for consultation about transferring June Morris to the Surgical Intensive Care Unit (SICU). The SICU resident was consulted by the orthopedic resident, because there was a concern about June Morris' low blood pressure, low oxygenation, pneumonia and high myoglobin level in her urine due to rhabdomyolysis. Rhabdomyolysis is the disintegration or dissolution of actual muscle. This condition was brought on, in June Morris' case, because she had been lying at the foot of her stairs without food or water, injured and immobile, for a couple of days. The usual outcome of this kind of event is kidney failure.

[17] Around noon on January 4th, 2002, there was a call to SICU from the orthopedic ward. The Resident physician, Dr. Norbert Viallet, attended the orthopedic ward, joined by the Intensive Care Fellow, Dr. Etyan Weinberg, ten to fifteen minutes later. They both examined June Morris. The Attending Physician, Dr. Carla Chrusch, recalled receiving a phone call from either the Resident or the Fellow regarding June Morris and she agreed to allow her transfer and admission to SICU. The Attending Physician had the power to not admit her. So a team decision was made to admit June Morris to SICU. Dr. Viallet stayed with June Morris to assist in the transfer. By everyone's account, June Morris was and remained the sickest patient on the SICU ward that day.

[18] Dr. Weinberg confirmed that by 1600 hours, June Morris needed intensive life support measures. She had a low potassium level in her blood, she had acidosis (an abnormal condition resulting from an increase in acids or from a decrease of alkali in the blood and body tissues) and elevated chloride. Her kidneys were not functioning properly. Her breathing was not good. Her blood pressure was still low.

[19] Dr. Viallet, the SICU resident on the day June Morris passed away, confirmed this assessment. Dr. Viallet's expectation of June Morris' recovery was

low, because of her overwhelming infection (sepsis). His best guess was that other interventions would not have made a difference.

[20] June Morris died of cardiac arrest at 2055 hours on January 4th, 2002 in the SICU at the SBGH.

[21] Pathologist Dr. Kelly MacDonald performed the autopsy upon June Morris. He told the Court that he found an elderly woman; unclean, unkempt, losing weight, with chronic (longstanding) illness and acute (new) illness. She was severely ill because she had sustained a broken hip and had lain on the floor for a long time. She was suffering from pneumonia as a result. She was chronically malnourished. There was fluid in her chest and abdomen. There was kidney impairment. In his opinion, she would very likely have died as a result of her condition.

[22] Notwithstanding these opinions, June Morris' cardiac arrest was unexpected. When it was discovered that at the time of her death June Morris had an inexplicably high concentration of potassium in her blood, the staff at the SBGH seized some of the medical equipment used in her care. The SBGH administration carried out an internal investigation and eventually contacted the Office of the Chief Medical Examiner and later, the Winnipeg Police Service.

HOW DID IT HAPPEN?

SURGICAL INTENSIVE CARE UNIT

[23] The critical care unit that June Morris was transferred to is the Surgical Intensive Care Unit (SICU). The SICU at the SBGH is a very busy environment. Dr. Dean Bell, Director of SICU, testified that the SICU is the busiest intensive care unit, with 950 patients a year and an average of three to five percent mortality rate. For example, during the year 2002, there were 60 deaths. Critical Care Nurse Marta Anne Tataryn testified that the bedsides can often be cramped with monitoring and ventilating equipment, intravenous (IV) lines, poles and pumps. There were, in January of 2002, up to nine beds for use on the unit.

[24] At SBGH, the SICU is a separate, self-contained unit, distinct from the Post-Anesthesia Recovery Room, but both wards share the "dirty utility" room and the staff from Post-Anesthesia uses the door of the SICU.

[25] On the SICU ward are registered Critical Care Nurses, a Ward Clerk, Aides/Orderlies (Ward Assistants), Respiratory Therapists, X-Ray Technicians, Electrocardiogram Technicians, Doctors and Specialists. As well as the regular staff on the SICU floor, there are often other physician Specialists from other various services of the hospital and also visitors from time to time. Visitors have to call and are given permission to visit. Every employee wears an employee badge.

[26] There is limited access to the SICU. The SICU is not a locked institution. The unit is posted as a restricted area, that is, not open to the general public and people are supposed to phone in, but visitors can walk in unannounced. However, they are almost always stopped and questioned.

[27] Critical Care Nurse Rose Neufeld told the Court the nurses on SICU cover for each other:

1. On breaks;
2. When someone is busy;
3. To help each other catch up;

4. Assisting with bedside care;

5. Mixing or diluting medications.

SICU PHYSICIANS

[28] With any SICU patient, the SICU physicians work as a team. Patients are often critically ill. There is an ongoing consultative process. It can vary depending on the experience of the physicians and/or the magnitude of a problem or medical decision. The emphasis is on team care on the SICU. On January 4th, 2002, the team treating all SICU patients, including June Morris, consisted of:

1. the "Attending" or supervising physician, Dr. Carla Chrusch;

2. the "Resident" physician, Dr. Norbert Viallet;

3. the "Fellow" physician, Dr. Eytan Natan Weinberg.

[29] The Attending physician is the team leader and is available for consultation on a 24-hour basis, even when away from the hospital. Attending physician Dr. Chrusch confirmed that she was not physically present at the hospital following the afternoon rounds, but she was available by pager or available to come back to the hospital, day or night. Her function was to supervise more junior physicians in the context of SICU and other medical services within the teaching hospitals. In fact, on the evening of January 4th, 2002, attending physician Dr. Chrusch was paged three times by the resident Dr. Viallet regarding the care of June Morris.

[30] Consulting or Attending physicians and Fellows at ICU have already attained specialized positions. The Resident physician is a fully-qualified doctor in the midst of training in a specialized area of medicine or surgery. The Fellow physician is a doctor, involved in a two-year fellowship, which includes rotations in ICUs for four week periods. The Fellow supervises two residents and acts as the bridge between the Resident and the Attending physician. During a shift, the Fellow is always available to come to SICU and is involved in each decision to admit a patient to SICU.

SICU PHYSICIANS' ROUNDS

[31] There are three sets of doctors' rounds:

1. **Morning rounds**, at 0900 hours daily, with the attending physician, the fellow, the resident, the senior nurse (usually the nurse in charge or "Charge Nurse"), bedside nurse, dietician, pharmacist and respiratory therapist.

   They collectively review patients' histories, treatment and response and make a care plan for the day. The morning rounds by the SICU doctors are from 0900 hours to 1130 hours and they are quite thorough.

2. **Sign-out rounds**, commencing at 1600 hours. The medical team reviews events, test results and makes a care plan for the patient, in consultation with the on-call attending physician. The resident is responsible for the writing out of the physician's orders. The resident is left in charge of the unit.

3. **Telephone rounds**, occur at 2100 hours to 2200 hours and are analogous to sign-out rounds except they are conducted between the resident and the on-call attending physician on the phone after the resident and the charge nurse have made rounds together, prior to the phone call.

[32] A cart containing each patient's chart is taken by the team on each round. A clipboard chart remains at each patient's bedside, consisting of fluid flow sheets and the record of medications.

[33] Consultations also occur regularly because of changes in a patient's condition or modifications in care. That is the nature of the ICU. Telephone rounds occur later in the evening but the resident can seek assistance 24/7 from the on-call attending physician. There is a doctor present day and night in the SICU and it is often the resident. The resident is the delegate of the attending physician.

[34] Dr. Viallet confirms that as a resident, most of his day would be spent on the ward or in the boardroom for teaching sessions. Dr. Viallet is the only doctor on the ward during the evening and the night. He works a 24-hour shift.

[35] Dr. Chrusch started afternoon rounds at June Morris' bed because she was the sickest patient. Dr. Chrusch reviewed her blood test results and her entire clinical situation. June Morris had low potassium and heart rhythm abnormalities, so she was given a potassium supplement and a magnesium supplement (for the heart). In addition, her kidneys were not working well due to high myoglobin levels and a diuretic which had been previously prescribed would also lower her potassium level.

SICU NURSES

[36] A number of SICU nurses had direct contact with and cared for June Morris that day. The SICU nurse is a specialist in surgical intensive care.

[37] Judith Nixon, the instructor of the IC nursing program at SBGH, told the Court how and why. The IC course itself is seven months in duration. There is a mix of classes and clinical experience, including theory, clinical practice and lab experience. To enter the IC program, nurses need at least 1,125 clinical hours of experience. They also need a letter of support. Mostly, they have at least three years' experience. An interview process occurs and the hiring standards are pretty exacting.

[38] The ideal candidate, according to Ms Nixon:

1. Has a knowledge base;
2. Can prioritize well;
3. Can think critically;
4. Has clinical skills;
5. Is good with technology;
6. Is good with communications;
7. Has good interpersonal skills;
8. Maintains a safe environment.

[39] The ICU environment has a faster pace and requires a quicker response than most other hospital wards. Patients are much sicker there.

[40] Rhonda Findlater is, among her other managerial responsibilities, the Program Team Manager of the Intensive Care Units. She has 24-hour responsibility for the running of the units and looks after monitoring, budgets, purchasing, hiring and performance appraisals.

[41] In terms of continuing education, Ms Findlater advised that there is an educator in the SICU and there is money available for nurses to attend for conferences or continuing education and it is encouraged. Continuing education is very valued in the SICU unit because of the constant changes in practices. For example, at the time of the inquest, ten IC staff were attending a critical care conference in Banff, Alberta.

[42] It is clear that the Critical Care Nurse has a specialized set of skills and is required to think at a high level and act quickly to solve difficult medical issues arising on a daily basis.

HIRING OF OUT-OF-PROVINCE CRITICAL CARE NURSES

[43] The Winnipeg Regional Health Authority (WRHA) recruits critical care nurses from outside of the province. For example, Ms Findlater herself has hired five nurses from out-of-province or out-of-country. The hirees average two to four years of clinical ICU experience. When hiring, Ms Findlater looked at the prospective employees' ICU experience, résumé, references (her checks can go back seven years) and a copy of an interview of each applicant.

[44] These nurses did not have to take the SBGH intensive care course because of their prior clinical experience: they all had adequate skill sets. IC management encourages education and provides, for each of those nurses, individual orientations of nine to 16 days' duration. As part of their ongoing orientation, nursing policies are reviewed. These new nurses are "buddied" with a more senior ICU staff nurse.

NURSES AT SICU ON JANUARY 4TH, 2002

[45] Nursing supervision on any given shift is provided by the clinical resource nurse (CRN). The CRN assigns to each patient a particular critical care nurse. Part of the CRN's job is ensuring quality care. Project Team Manager Rhonda Findlater confirmed in her evidence that it is the CRN (charge nurse) who assigns

an individual IC nurse to a patient. Ideally, the level of care required is commensurate with the level of experience of the assigned nurse.

[46] At any given time on the SICU, there will be a nurse appointed to be in charge and basically carry on the functions of the clinical resource nurse and that person is the appointed "charge nurse". Dolores Friesen is a clinical resource nurse (CRN) and was the "charge nurse" or supervising nurse for most of her shift on the SICU on January 4th, 2002. She worked an eight-hour shift on January 4th, 2002 from 1530 hours to 2345 hours. At the time she testified, she brought with her a list of helpful recommendations for the Court in the areas of nursing practice, education, pharmacy and management.

[47] Her job as the CRN, in general, is to help maintain the quality of the environment of the SICU, by training and managing SICU nurses and other staff, coordinating educational components when appropriate, attending physicians' rounds, assigning nurses to patients, and being familiar with all SICU patient profiles.

[48] For the first half hour of her shift, the CRN receives a report from the previous charge nurse and reviews the bed situation and the staff assignments for the next couple of shifts. Usually this occurs in the conference room. Each patient's history, condition, systems, activities and plan is assessed.

[49] According to Charge Nurse Friesen, January 4th, 2002 was not any busier than usual. 1530 hours to 1930 hours is always the busiest time on the SICU. When June Morris was admitted to the SICU, Charge Nurse Friesen assigned Critical Care Nurse Danny Chin to care for her. Nurse Chin told the Court that on January 4th, 2002, he was working the twelve-hour day shift from 7:30 a.m. to 7:30 p.m. on the critical care unit. June Morris was the sickest patient on the SICU that day. Nurse Chin was told she had a respiratory problem and she was to be his patient. Her bed, number seven, was right across from the medications ("med") room.

[50] Although Nurse Chin was hired from out-of-province and was relatively new to the SICU at SBGH, he was well regarded by his superiors and his nurse colleagues. Nurse Chin was hired in 2001 with two years of ICU experience, was a graduate of Grace Hospital, was on the Honour Roll, had a top grade-point average at the University of South Dakota, had been a mentor for staff and students while working in the USA, was self-directed, had a skill set, and the IC team

manager was very satisfied with his credentials. He had a 13-day orientation before commencing full-time duties at SICU at SBGH.

[51] The IC project team manager, Rhonda Findlater, confirmed that Nurse Chin was often assigned unstable patients, because he was good at it. His colleague Critical Care Nurse Jason Courchaine also confirmed (contrary to what Charge Nurse Friesen stated was still the case in January 2002) that he was no longer formally mentoring Nurse Chin by January 4th, 2002. The fact that he was at the bed next to Nurse Chin for the latter portion of his shift was by accident, not design; it had nothing to do with the "buddy" system. Nurse Courchaine confirmed that the mentoring of Danny Chin ended some months before January, 2002. Nurse Chin was never hesitant to ask questions of him. Nurse Chin was a quick learner. He was very caring of his patients. Nurse Courchaine says they pretty much had the same schedule, so he was definitely in a position to observe his abilities.

[52] Charge Nurse Friesen testified that she felt Nurse Chin scrambled to keep up. His charting was often late charting. She suggested that because of her concerns with Nurse Chin's ability, she often asked another senior nurse to assist him. This is because most SICU nurses have completed an adult ICU course. She felt that she wanted to maintain a supportive attitude for him, so he was often working side by side with Jason Courchaine. She still considered Nurse Chin to be at the beginner level and that June Morris was a challenging patient for him. Notwithstanding this, Nurse Friesen had signed a performance appraisal of Nurse Chin in October of 2001 confirming he was an excellent nurse. Moreover, she confirmed to this Court that she in fact had no concerns about his looking after June Morris, the sickest patient on SICU that day.

JUNE MORRIS AT SICU

[53] When Nurse Chin first assessed June Morris in bed seven in SICU, he observed she was awake, responsive, but could not move. Her blood pressure was low. Her heart rate was fast. Nurse Chin's overall assessment was that her condition was critical. In fact, Critical Care Nurse Rose Neufeld confirmed that there was lots of activity at June Morris' bed because she was the most critical patient. Since her patient was stable, she was able to assist Nurse Chin at times.

[54] Nurse Chin explained that the doctor wanted a femoral arterial (groin) line inserted, to allow them to monitor June Morris' arterial blood pressure and allow

them to take blood samples. Among other tasks, Nurse Chin administered intravenous (IV) fluid to attempt to bring her blood pressure up. She also needed intense oxygenation.

[55] The times an ICU nurse is able to take a break can vary. Another assigned nurse always takes care of the patient of a nurse on break. The charge nurse assigns specific nurses to cover each other's patients while on a break. When Nurse Chin was on his break, Nurse Shelley Munro, he thinks, took over. In fact, Critical Care Nurse Shelley Munro tells us she did relieve Nurse Chin on his lunch break at bed seven. She was given a report about the patient. Nurse Chin's lunch break was approximately 1400 hours to 1500 hours.

[56] Nurse Munro administered medication to June Morris, because of respiratory problems. She gave her an oxygen mask, because her oxygen saturation was lower than required. She added nasal prongs and sent a blood gas test to the lab and gave her a prescribed diuretic, Lasix.

[57] Also, June Morris was intubated at that time. Intubation is the insertion of a tube into a patient's trachea, or windpipe, through either the mouth or nose. The tube maintains an airway through which a patient can be ventilated. June Morris was put on mechanical breathing by Dr. Norbert Viallet, the resident. In fact, Dr. Viallet made the decision to intubate and actually talked to June Morris about it before it happened, around 1450 hours. During an intubation, the bedside nurse and the respiratory therapist (RT) assist the doctor at the bedside. Michael Bachynsky, RT, was part of the team who intubated June Morris at that time. When an RT is summoned, the first step is to consult with the doctor or the bedside nurse, check the chart and look at the oxygen saturation and arterial blood gases. An RT is responsible for airway patency for each and every patient in the hospital. 90% of an RT's work is centered on critical care patients.

[58] Late afternoon is a busy time in SICU. The doctors are on the unit for afternoon rounds and the post-surgical patients have returned from the operating room to the unit. From about 1600 hours to 1700 hours, the doctors did their sign-off rounds. By that time, June Morris was critically ill, sedated and intubated. Her bedside was particularly crowded because it is smaller than some other bed units in the SICU. Nurse Chin confirmed that when he returned to June Morris after his lunch break, she was in fact intubated with a tube down her throat to help her breathe and to help her get more oxygen.

[59] Just as Nurse Chin reported June Morris' status to Nurse Munro before he went on his lunch break, Nurse Munro reported to Nurse Chin upon his return. She advised him, among other things, that she had administered a diuretic, Lasix, to June Morris. She was tachycardial, which means that her heart rate was very fast. The common medical term is "tachy".

MEDICATION ORDERS FOR JUNE MORRIS ON JANUARY 4TH, 2002 AT 1600 HOURS

[60] The afternoon round was conducted, commencing at approximately 1600 hours to 1630 hours. During the 1600 hours sign-out rounds, witnesses recall June Morris was likely the first patient seen, because of her ill health. Present at the bedside were physicians Viallet, Chrusch and Weinberg, the Charge Nurse Friesen and bedside Nurse Chin.

[61] The Fellow, Dr. Weinberg, confirmed that by 1600 hours, June Morris needed intensive life support measures. She had a low potassium level in her blood, she had acidosis (an abnormal condition resulting from an increase in acids or from a decrease of alkali in the blood and body tissues) and elevated chloride. Her kidneys were not functioning properly. Her breathing was not good. Her blood pressure was still low.

[62] The team of physicians ordered a number of medications for June Morris. These are the medication orders:

1. Cefuroxime.

   This is an antibiotic and was prescribed because her primary health problem was pneumonia; she was in septic shock.

2. Sodium Bicarbonate.

   The bicarbonate was prescribed to help counteract both the potential for renal (kidney) failure and the increase in acids (metabolic acidosis) in June Morris' body due in part to her skeletal muscle breakdown (rhabdomyolysis).

3. Enoxeparin.

   This medication is a blood thinner, an anticoagulant, prescribed to try to prevent blood clots from forming, due to her broken hip.

4. Thyroxin.

   This iodine-containing compound was prescribed to combat her underactive thyroid gland.

5. Ranitidine.

   This antacid was to provide relief from her hyperacidity and to try to remove acid from her stomach.

6. Magnesium sulfate.

   She needed magnesium. This compound is a metallic element, essential in nutrition. Magnesium is lost in urine and low magnesium can affect heart rhythms.

7. Thiamine.

   Thiamine is a vitamin supplement and was prescribed because she was thin and wasted and generally malnourished (cachexic).

8. Potassium acetate.

   Dr. Robert Ariano, the Critical Care Pharmacist at the IC Units at SBGH, was called as an expert in the area of clinical pharmacology. He told the Court about potassium. Potassium is one of the electrolytes that are present in all our body fluids. It is an essential mineral found in most foods. Along with sodium and calcium, potassium helps regulate major body functions including normal heart rhythms, normal blood pressure, nerve impulses and muscle contractions. The body cannot manufacture potassium on its own. It is normally obtained through food.

   Again, June Morris was malnourished.

Potassium is prescribed to replace electrolytes, which control heart activity. June Morris was hypokalemic, meaning her potassium level was low. The potassium in June Morris' blood was trending down from a rate of 3.7 to 3.3 millimoles per litre. The normal range reading is from 3.5 to 5 millimoles per litre. Her urine output was at that point high and she was experiencing heart abnormalities. There was a general concern that more potassium might be excreted in her urine. Therefore, the team prescribed a potassium acetate supplement. Potassium acetate, according to Dr. Ariano, is the acetate salt of potassium. It breaks down in the bloodstream to release both potassium and bicarbonate. The bicarbonate makes the blood alkaline. June Morris was hyperacidic.

The potassium supplement ordinarily prescribed in these circumstances is potassium chloride. However, June Morris at that point also had an elevated level of chloride in her body. The team concluded that potassium chloride would, if administered, further elevate the chloride level in her body. Therefore, potassium acetate, not potassium chloride, was prescribed.

THE DELIVERY OF MEDICATIONS TO SICU

[63] At SBGH SICU, medications are available in three locations:

1. Ward or floor stock, readily available and not secured in any fashion;

2. The "PYXSIS" machine, or biomedric medicine machine, located in the med room on the SICU ward, is a device which dispenses medication upon programmed request and subsequent verification by a pharmacist. It also dispenses certain other medications requested by an ICU nurse without a pharmacist's authorization;

3. The hospital pharmacy, which is located in the basement, two floors below the SICU, delivers medications via a pneumatic tube system. A pharmacist was working in person from 0700 hours to 1100 hours and always on-call.

[64] There are three kinds of medication orders:

1. "Standard" or non-emergency, regular orders, which usually take more than an hour to be processed and delivered;

2. "ASAP" orders, which are commonly understood to be processed and delivered usually within the hour;

3. "STAT" orders, which are expected, on an urgent basis, to be delivered within 15 minutes of the physician's order. Some physicians use the phrase "GIVE NOW" to mean the same thing as STAT.

[65] The medications ordered for June Morris at around 1600 hours were not emergency prescriptions. The physicians' orders were not sent as "STAT", or even "ASAP".

[66] The process by which medication is received is not simple. A written physician's order is taken from the patient's medical chart and transported to the nurses' desk. The chart itself has a flag that indicates that the physician's order has been pulled out of the chart. At the nurses' desk, the ward clerk then faxes the physician's order to the pharmacy and checks off a box on the order that says "FAX SENT". The ward clerk then transcribes each order onto a Medical Administration Record (MAR). The MAR is given to the charge nurse to double-check. The faxed order, meanwhile, is then flagged for the charge nurse to check. Often there is a stack of faxes for the nurse to check.

[67] On June Morris' physician's order sheet, both the ward clerk Ms Sabrina Boreski and Charge Nurse Friesen have in fact signed the MAR to verify that the fax sent to the pharmacy was in fact sent. There are two kinds of faxes arriving in the basement pharmacy: STAT and non-STAT faxes. STAT orders are on blue paper, non-STAT orders are on white paper. Faxes were not kept at that time.

[68] If any medication is needed urgently, nurses or the ward clerk call the pharmacy directly to stress the urgency.

[69] Upon receipt of the prescription at the pharmacy, the pharmacist checks the profile of the patient to ensure the medication is appropriate. The pharmacist checks the age, weight, blood work and drugs being given. If a drug is not appropriate, the pharmacist contacts the doctor.

[70] Each medication order is entered into the computer system and each medication has a code. Some medications, such as the potassium acetate, would be dispensed only from the pharmacy itself; some would be sent through the PYXSIS system. Some would be floor stock, located on the SICU.

[71] An "Order Entry" is completed for each prescription. Once the order entry is completed, a label will print out for each medication. The label is picked up by a technician. The medication is then located by a technician in the dispensary and placed in a plastic bag. The label is affixed to the bag. In this case, the on-site pharmacist, Carol Davis, confirmed the computerized order entry of potassium acetate at 1703 hours. This entry confirms that the pharmacist has viewed the fax, checked the patient's history and approved the prescription at 1703 hours.

[72] Once the prescriptions and medications have been checked, a technician then places them in the pneumatic tube line and prioritizes them for placement. Generally, the pharmacy sends up a ward's entire medication order at one time in the same pneumatic tube.

[73] Pharmacist Davis agreed that the potassium acetate medication could not have arrived through the pneumatic tube system to the SICU until between 1730 hours and 1740 hours at the earliest. It could well have been later. It could not have been earlier.

THE ADMINISTERING OF POTASSIUM TO JUNE MORRIS

[74] As has been stated, the most common medication to alleviate low potassium levels in a patient is potassium chloride, but June Morris' chloride level was already elevated.

[75] Charge Nurse Friesen has a specific recall about the potassium acetate. When interviewed by the Winnipeg Police Service (WPS) on March 12th, 2002, she told the police that she had advised Nurse Chin that the pharmacy would send up a bag with instructions on how to administer the potassium acetate, so she was not concerned about the fact that he had not administered potassium acetate before.

[76] At the Inquest, she acknowledged that potassium acetate is not commonly administered. She herself had only administered it twice before. She testified that she specifically asked Nurse Chin if he had ever administered potassium acetate before and he said that he had not. She said "I can help you with that. I went to the manual kept in the med room and there was no information about potassium acetate in the manual." Then she was called away for some other purpose and she thought the pharmacy would send proper instructions about dilution with the label when the medication was delivered to the SICU. She recalled that Nurse Chin did not have any questions of her.

[77] Only when a medication is received and administered, is the administering nurse then expected to initial that the medication has in fact been given and at what time. This in turn is initialed by a second registered nurse, to verify the prescription has been administered. This also appears as part of the Medication Administration Record (MAR).

[78] Nurse Chin has initialed on the MAR that potassium acetate (written on the MAR as "K+ acetate 5Meq x4") was administered by him at 1700 hours and this is initialed also by Charge Nurse Friesen.

[79] Nurse Chin claimed that a nurse does not necessarily write "late entry" on the MAR. In this instance, he chose not to write "late entry". He seems to have simply charted a guess as to a start time for the potassium acetate. In fact, the time the drug charted by Nurse Chin and initialed by Charge Nurse Friesen, as being administered at 1700 hours, is not accurate at all.

[80] We know this for two reasons: firstly, the order was not approved by the pharmacist until 1703 hours and the pharmacy did not forward the drug to SICU until 1730 hours at the earliest; secondly, Nurse Chin admitted that although he entered the time the potassium was given as 1700 hours, he did not chart any of this until 1830 hours, when he had time to write his nurse's notes. His entry time was simply an estimate.

[81] Nurse Chin recalled that sometime after June Morris was assessed during the afternoon rounds, he was told by the resident that the resident was going to insert a special catheter into June Morris; a Swan-Ganz catheter. A Swan-Ganz is a pulmonary artery catheter inserted to measure fluid balances and arterial blood pressure. The purpose of installing a Swan-Ganz catheter was to determine the fluid balance and the cardiac output of the patient and to give the potential of two lines to administer fluids.

[82] Nurse Chin obtained the catheter from the storage room. Dr. Lam, the resident from the Medical Intensive care Unit (MICU), helped Dr. Viallet attempt to properly insert a Swan-Ganz catheter. They had trouble getting it correctly lodged. It usually takes ten to fifteen minutes to insert correctly, but it took a lot longer. The nurse's role is to help get the correct tracings on the monitor.

[83] Charge Nurse Friesen confirmed that from 1815 hours to 1830 hours, while Nurse Chin was occupied with the insertion of the catheter, she administered

medications to June Morris. She initialed that she administered Levophed. She surmised in her interview with the WPS that it was she who did this at June Morris' bedside, because Nurse Courchaine, who would have otherwise assisted Nurse Chin, was on a break. She stayed at June Morris' bedside while they were trying to insert the Swan-Ganz catheter and was told that her condition was gradually deteriorating.

[84] Dr. Lam confirmed that in his opinion June Morris was critically ill at that point and she was probably not going to survive.

[85] The insertion of the Swan-Ganz catheter is charted at 1815 hours. Nurse Chin recalled that the potassium acetate infusion began about one-half hour after the Swan-Ganz catheter installation. Yet, he also maintained that the potassium acetate would have been infusing no later than 1800 hours. Both cannot be correct. Therefore, it is very difficult to pinpoint the precise time he began to infuse the potassium acetate.

[86] Charge Nurse Friesen recalled asking Nurse Neufeld to assist Nurse Chin sometime after 1830 hours. Nurse Neufeld told the Court that when Charge Nurse Friesen was reporting to her prior to her break, the Resident, Dr. Viallet, reminded them both about the magnesium sulfate order for June Morris. Not so, says Dr. Viallet. He does not usually check on whether any order has been given. He did not hear of any difficulties with the potassium acetate that he had ordered. These medications were not considered urgent.

[87] Charge Nurse Friesen recalled asking Nurse Neufeld to check that Nurse Chin had administered all prescribed medications to June Morris. The records confirm that Nurse Neufeld withdrew the magnesium sulfate from the Pyxsis at 1814 hours. She administered it and Nurse Chin charted it. She had no problem with that. He watched her do it. Then she said "Do you mind if I label a line below the buretrol?" Then she discarded the needle. She recalled seeing at least two buretrols delivering medication to June Morris, but does not remember which lines entered June Morris' body where.

[88] Nurse Neufeld confirmed that potassium chloride needs to be further diluted if it is administered in a peripheral IV line, rather than a central IV line. Nurse Neufeld recalled that she checked that the pump rate infusing medication into June Morris was at the rate of 25 cubic centimeters (CC) an hour and she observed approximately 60 CCs of fluid left in the buretrol. She knew that magnesium and

potassium were compatible so she was not concerned and she labeled it. She affixed a label on the IV line below the buretrol.

[89] Around the time Nurse Chin was entering his estimates to the medical chart, at 1830 hours, he thinks Nurse Rose Neufeld administered magnesium sulfate to June Morris. Nurse Chin acknowledges that as far as the magnesium sulfate order was concerned, he had forgotten to give it and Nurse Neufeld injected it into the buretrol. He observed her do it and he charted that he had administered the magnesium sulphate at 1840 hours.

[90] Dr. Ariano, a Clinical Specialist at SBGH, told the Court that in his opinion, the potassium acetate was administered **after** the magnesium sulfate was administered. This is because the magnesium readings in the buretrol were diluted in half by the excess potassium that was present in the buretrol. Therefore, the potassium was administered into the buretrol **after** the magnesium sulfate.

[91] The magnesium sulfate is charted by Nurse Chin, as being administered by him, Nurse Chin, at 1840 hours. In fact, he himself did not inject the magnesium sulfate, but he charted that he had administered it. He says that he entered that in the chart, because he knew it was given and he saw it being given. He saw Nurse Neufeld administer the magnesium sulfate. Even though they both knew this was a breach of nursing policy, they were working as a team at that point.

[92] Nurse Chin notes that on January 4th, 2002, potassium chloride was available on the ward at SICU, but potassium acetate had to come from the pharmacy. He had administered potassium acetate three or four times before in the USA, where he previously worked as an IC nurse.

[93] He confirmed that the potassium acetate that he had administered in the past had been pre-mixed. In other words, it was not a concentrate and did not need to be diluted. He had not administered potassium acetate since he started work at SBGH SICU. At SBGH, the potassium acetate was not pre-mixed. Similarly for potassium chloride; it was not pre-mixed.

[94] Nurse Chin verifies that the order was to administer a total of 20 millimoles of potassium acetate over a four-hour period. The order did not tell him to dilute the potassium. Nurse Chin says he found the potassium acetate in the med room in a plastic bag with the patient's label on it.

[95] Potassium acetate arrived from the pharmacy in concentrated form in a 50 millilitre vial, similar in look, size and feel to a vial of sodium bicarbonate. It was a "single-use" medication, since it contained no preservative and since it was usually mixed in its entirety into a nutritional mix for administration to a number of patients who needed a full nutritional supplement. It also had the words "FOR PHARMACY USE ONLY" in bold letters on the label. It was sent to the unit from the pharmacy.

[96] Nurse Chin recalls drawing 5 millilitres of potassium acetate from the 50 millilitre vial with a 10 millilitre size syringe. He did this in the med room. He recalled that it took mere seconds to withdraw the potassium. He then told the Court that he injected the 5 millilitres of potassium acetate into June Morris' buretrol and topped up the buretrol to 100 millilitres of fluid from the IV bag above it. He says this process took less than a minute. He did not check with anyone. There was no need to check, because of his prior experience.

[97] Nurse Courchaine recalled that he became aware that June Morris was going to receive a dose of potassium acetate. In fact, he was in the med room when Nurse Chin was drawing up potassium acetate into a syringe. He confirmed that potassium acetate is not a common medication, since normally potassium chloride is used. He saw Nurse Chin drawing potassium acetate from a vial with a syringe and thinks he recalls Danny Chin saying "chloride is high". He recalls that it was a smaller syringe and definitely not a 60 CC syringe.

THE "SHARPS" CONTAINER

[98] At each patient's bedside is a "Sharps" container, used for the safe discarding of used syringes, medications, etc. There is also a Sharps container in the medication room. In the dirty utility room, there is an extra-large Sharps container to accommodate those items that are too large to discard in the smaller containers at bedside.

[99] Nurse Chin says that after he drew up the potassium acetate, his "best guess" is that he threw the vial and its unused potassium into a Sharps container in the med room, as was his habit.

THE BURETROL

[100] A buretrol is a device inserted below an intravenous (IV) bag and connected to IV tubing that allows for the controlled dispensing of medications. It can hold

up to a maximum of 150 millilitres of fluid at any one time. It is connected to a pump which controls the rate of infusion of any given medication.

[101] It is clear that upon her arrival at the SICU, due to prior physicians' orders, June Morris already had peripheral intravenous lines connected to her and was receiving fluid by way of a previously-connected buretrol.

[102] June Morris' buretrol was situated between an IV bag of fluid and an infusion pump capable of pumping three separate lines of IV fluid into June Morris. Each line or channel on the pump is independent and must be programmed manually and independently.

[103] Nurse Chin says he programmed the pump to deliver 25 millilitres of the fluid containing potassium acetate per hour for four hours as the doctor had ordered and at no time did he change the pump speed. He says around 1900 hours he checked the pump speed and it was set at 25 for the potassium infusion.

[104] He remembered during his evidence that one is able to pause the buretrol with a button to stop the pump. He cannot remember how it works precisely, because he stated that it had been two years since the incident and the pumps he uses as a nurse in the United States are set up differently. He recalled that the buretrol has demarcated measurements on it and the total top-up of the IV fluid was 100 CCs.

THE CARE OF JUNE MORRIS FROM 1800 HOURS TO 2100 HOURS ON JANUARY 4TH, 2002

[105] Nurse Courchaine recalled clearly that he was assisting in the care of June Morris, because she was a critically ill patient. The medical chart shows that he set up or "hung" two intravenous bags, the first a sodium chloride bolus (rapid infusion) at approximately 1800 hours, because of June Morris' unstable blood pressure. He also ran a bag of "trauma cocktail" which is composed of a pre-mixture of dextrose, water, normal saline with sodium bicarbonate added. This ran through the infusion pump approximately 1900 hours at the rate of 200 to 250 CCs an hour.

[106] At 1905 hours, Nurse Chin had asked for help for someone to call for the RT. He did not want to leave the bedside. Also at 1905 hours, when he called for the RT, he manually ventilated June Morris. This was a life support measure. If

he had not done that, June Morris might very well have developed a life-threatening lack of oxygen. He pushed the bag containing oxygen as hard as he could, to squeeze air into June Morris' lungs.

[107] Michael Bachynsky is a respiratory therapist (RT) who has worked at SBGH since 1985. He was the on-site RT on the evening shift. His assessment of June Morris at 1920 hours was that her condition was fragile and her respiratory status was deteriorating.

[108] Nurse Chin confirmed that at 1930 hours, his report to his replacement, Nurse Jackie Kulczycki, the night shift nurse, took about 15 to 20 minutes, which is the norm for a critically ill patient. It was done at patient bedside. He cannot recall if anyone else was at bedside.

[109] Nurse Kulczycki confirmed that on January 4th, 2002, she was working 1930 to 0730 hours on January 5th, 2002. She was assigned bed seven, patient June Morris, taking over from Nurse Chin. She received a report from Nurse Chin at the foot of the patient's bed as soon as she got there. The patient was very sick. She says it took longer than normal to report; about 15 minutes. She told the Court that Nurse Chin told her about June Morris' medications, what the doctors' orders were and in what lines she was receiving medication. There was no visual inspection of the lines. While she was getting her report from Nurse Chin, she confirms that the doctor and the RT were back and forth at June Morris' bed.

[110] Nurse Kulczycki does not recall specifically what Nurse Chin said about the potassium. She confirmed that both the flow sheet and the MAR are referred to during the report from Nurse Chin to her. Therefore, Nurse Kulczycki would have immediately acquired information about the time of administering and rate of infusion of the potassium acetate. She confirmed that she checked the MAR to see when the potassium was started. Indeed, according to the MAR, the potassium acetate was started at 1700 hours. She, therefore, presumed that the infusion would finish at 2100 hours, given the rate of infusion.

[111] She assessed that June Morris' oxygenation was very poor, so she immediately called for the RT. June Morris' blood pressure was low, too, and that was a concern. Because June Morris was waking up at the time the RT was summoned, Nurse Kulczycki administered the medications Versed and Fentanyl to June Morris and entered this in writing on the MAR. The Versed was in a syringe that she believed was previously drawn up by Nurse Chin. She administered this

medication to June Morris through an intravenous line with a push injection or a bolus.

[112] RT Lesia Chorney confirmed that when she came on evening shift, her colleague and RT Mike Bachynsky gave her a report on her patients in SICU and June Morris was one of them. She was given June Morris' history. Her rounds are at 2000 hours. She attended SICU at that time and checked all ventilators bed-by-bed. She was called over to June Morris because they wanted her to change the settings. She wasn't doing very well. The RT would normally thoroughly check each ventilated patient every two hours or as required. She adjusted June Morris' ventilator because she was "bucking" the ventilator and she switched to constant mandatory ventilation. Ms Chorney concluded that June Morris did not look good. She thought that June Morris was "going downhill".

[113] Nurse Kulczycki was with the patient from 1945 hours to 2038 hours, approximately 53 minutes, at which point June Morris' heart arrested. Nurse Kulczycki recalled that sometime between 1945 hours and 2000 hours, she looked at the infusion pump and saw that it was actually infusing at 50 CCs an hour, which was twice the rate charted for the potassium acetate infusion. She noticed approximately 75 CCs remaining in the buretrol, which she says did not alarm her. Given what she saw, she concluded that the buretrol would still run out of fluid when it ought to and she did not necessarily assume that more fluid had been added.

[114] At 2020 hours, Nurse Kulczycki drew blood from June Morris to try to discover what was causing her problems, because June Morris' condition was not improving, even though she had good renal function.

[115] Charge Nurse Friesen recalled that sometime after 2000 hours, she made a decision to go to a store, to buy a cake for a fellow nurse whose last shift commenced that evening at 1930 hours. Charge Nurse Friesen felt she could leave the ward and it was safe to do so, because Nurse Neufeld was in charge in her stead, while she was away. Nurse Rose Neufeld indeed confirmed that around 2033 hours to 2035 hours, she relieved Charge Nurse Friesen because Nurse Friesen was leaving the unit to buy a cake. Nurse Neufeld received updates on each patient from Charge Nurse Friesen before she left to buy the cake.

[116] Meanwhile, Nurse Kulczycki had called for a doctor to attend June Morris' bedside, because of the change in the June Morris' heart rhythm. A "code blue", a resuscitation code, was called.

[117] Seconds later, there was full cardiac arrest.

THE RESUSCITATION CODE

[118] The resuscitation code was called. Because Charge Nurse Friesen was busy buying a cake, Nurse Neufeld's role as the acting Charge Nurse was to ascertain the nurses who were to be at patient bedside, charting, updating the supervisor and phoning various parties.

[119] When this code is called, the Medical Intensive Care Unit (MICU) is responsible to run the code. Dr. Herman Lam from MICU therefore took over. Generally, MICU nurses also attend. Nurse Kulczycki recalled that her role in the code was to administer the medications. Another nurse was drawing up the medications. Dr. Lam confirmed that when a resuscitation code is called, it is the job of the MICU resident to attend, except if it is called on the emergency ward. His 24-hour shift that day was 0800 a.m. to 0800 a.m. At 2038 hours, a resuscitation code was called; he attended and took charge of the code.

[120] During a code, most of the drugs are obtained from the code cart. Calcium, which is one of the treatments for high potassium, was not given, because Dr. Lam did not know June Morris' level of potassium was high.

[121] Dr. Lam had not seen June Morris' earlier EKG strips, which measure heart activity. He examined her current EKG strips and saw what he termed asystole and ventricular escape beats. In other words, her heart had no electrical system and there were no signals for the heart muscle to contract. Resuscitation efforts from 2037 hours to 2055 hours were unsuccessful. Death was pronounced at 2055 hours. Dr. Lam called the "code blue" or called the "code" at 2055 hours.

[122] Nurse Neufeld confirmed that once a death is pronounced, the deceased patient's ventilator is shut off and the IV lines and the pump are turned off and clamps are shut, all within approximately two minutes. Nurse Kulczycki confirmed that in fact, once June Morris' death was pronounced, the ventilator was turned off and the lines were turned off immediately, as were the pumps. She

disconnected June Morris' intravenous lines. The buretrol was discarded in the garbage, along with the rest of the IV set.

[123] Nurse Kulczycki told the Court that she at no time noticed a bottle of potassium acetate.

[124] When Charge Nurse Friesen returned to SICU from her errand to purchase the cake for her colleague's last shift, she sat down at the nurses' desk and looked at the Code Blue record, which was signed by the doctor and the charting nurse, outlining who was present and what was done. In the meantime, the Biochemistry lab called up to the unit and told her "Critical result for June Morris." She said "It's okay, she passed away." Then she thought about it and called back. The lab staff told her that June Morris had an elevated potassium level and that they had verified the reading.

[125] The blood tests that Nurse Kulczycki had taken came back from the lab after June Morris' death. Nurse Kulczycki told the Court that she had definitely not expected the potassium to be high. She expected it to be low or normal because of the patient's good renal output. This was not the case, however. The electrolyte results from the last blood sample drawn by Nurse Kulczycki showed the concentration of potassium in June Morris' blood to be much higher than anticipated, given the prescribed amount of potassium.

[126] When Charge Nurse Friesen received the lab results, she took the reading to Dr. Viallet, the SICU resident, and Dr. Lam, the MICU resident, and showed them the lab results. She was concerned about a possible medical error. They looked in the Sharps containers at the bedside and in the med room and could not find the vial of potassium acetate. Nurse Kulczycki retrieved the buretrol from the garbage at the bedside. Dr. Viallet called Dr. Chrusch. Nurse Kulczycki and Dr. Viallet sent the IV set-up and buretrol to the Biochemistry lab between 2115 hours and 2200 hours.

[127] There was talk about a medical error, but Nurse Kulczycki felt she had no time to discuss it. She was asked to look for the potassium acetate vial. She was asked to retrieve the buretrol and send it down to the lab. Dr. Viallet had assisted throughout the resuscitation and discussed different possibilities with the staff regarding the cause of the arrest. They were puzzled.

[128] A potassium overdose was discussed, but it was deemed highly unlikely because of the low dosage that was ordered to be administered.

[129] Following the code, Dr. Viallet got caught up on his charting. The team later received results of the blood work and the extremely elevated potassium level. Dr. Viallet showed this to Dr. Lam and phoned Dr. Chrusch. The team of physicians decided the potassium level was inconsistent with the amount of potassium ordered. It was more than twice as high as it ought to have been. After she was apprised of the high level of potassium in June Morris' blood sample, Dr. Chrusch ordered that the chart and the equipment attached to June Morris be retrieved.

[130] At approximately 2215 hours, Charge Nurse Friesen called Nurse Chin to ask him about his administering of the potassium to June Morris. Charge Nurse Friesen told the Winnipeg Police Service in her interview with them on March 12th, 2002:

> ….I don't like calling people after 10:00, but it was about quarter after, and to ask him if he could recall what he had given, how much he had gone up for that dose. At the time that I called him – he's a single parent. His daughter was crying and he said – I said, "I'm sorry, it's not a good time right now to call you." and he said "No. My daughter isn't feeling well." And I asked like, "Can you just tell me do you remember how much potassium you gave?" And he said, "I can't remember right now." So I just didn't try to go any further with that.

[131] At the Inquest, Charge Nurse Friesen testified that she called Danny Chin after 10:00 p.m. at his home, apologized for phoning so late and asked if "he could tell me how much potassium he had given and he said 'All the way.'". She wasn't sure what that meant so she asked "A whole dose? Did you fill the buretrol?" He didn't answer right away. "Did you give it like potassium chloride because it would have to be halved?" His daughter was crying and he said it wasn't a good time to talk.

[132] During their phone conversation, Charge Nurse Friesen neither told Nurse Chin June Morris had died, nor did she press him for more details about the potassium at that time.

[133] Nurse Chin's recollection of his evening after he left work from a 12-hour shift was that he was tired. He picked up his daughter from his mother's house. Around 10:30 p.m. that evening, he was awakened by a call from Charge Nurse

Friesen, who was asking whether he remembered how much potassium he gave June Morris. She also asked him where the rest of the potassium was. He told Charge Nurse Friesen that he gave the potassium according to doctor's orders and threw the remainder of the potassium in the Sharps box. When Nurse Chin returned to work the following day, he anticipated having June Morris as his patient. It was only when he arrived for his next shift that he found out she was dead.

[134] Dr. Chrusch confirmed the testimony of Dr. Viallet. In January of 2002, Dr. Chrusch was the attending physician at SBGH SICU, 24/7, Monday through Monday. On January 4th, 2002, she left the hospital after rounds in the afternoon. However, she was still available by pager. She received a page around 1845 hours. She recalled receiving a call from Dr. Viallet during the resuscitation attempt between 2038 hours and 2055 hours. She, in fact, according to the chart, was called at 2050 hours. She believed the medications were appropriate for resuscitation. In terms of June Morris' critical illness, she was on the higher end of the spectrum of being ill. Dr. Chrusch called the code and ended the resuscitation attempt at 2055 hours.

[135] The last call was after 2055 hours. Dr. Viallet told her about the unexpectedly high potassium level in the blood test results. She was aware that June Morris' potassium reading was 3.3 at 1545 hours. Her new reading was 7.6 at 2030 hours. Therefore, Dr. Chrusch concluded that a medical error was a possibility, so she immediately advised the resident to retrieve the entire intravenous set. She also ordered a post-mortem.

[136] She received no contact that evening from the nursing supervisor or the charge nurse. She thinks she first spoke officially about the incident to Dr. Dean Bell on Monday, which was January 7th, 2002.

HOSPITAL INCIDENT REPORT

[137] It is arguable who actually was "the first hospital or medical staff person" to become aware of the "incident" pertaining to the death of June Morris. Staff in attendance that evening on the SICU offer different explanations and perspectives as to why no incident report was filed that night or shortly thereafter.

[138] Nurse Kulczycki related that she was not spoken to by her superiors that evening, notwithstanding that she was the nurse caring for June Morris when she

died. She does not recall if her nursing superior was around. She was not asked to write down anything on any form. Therefore, she did not file an incident report.

[139] Dr. Lam concluded that it was not he who had any responsibility to make an incident report. He confirmed that the Resident, Dr. Viallet, told him that he was going to look into the incident, and so Dr. Lam left the SICU and returned to his unit, the MICU.

[140] Dr. Chrusch confirmed that as the attending physician, she was not asked to generate a written report. She had a series of meetings with hospital administration and the CME. She has no notes of those meetings. She did not write a critical incident report. In her opinion, these events went beyond reporting, so she spoke directly to the CME to order a post-mortem.

[141] Dr. Weinberg confirmed that he was not questioned until weeks later by the CME's office. He was not part of the investigative team looking into the incident in the days immediately following June Morris' death.

[142] Rhonda Findlater is the SICU Program Team Manager. At that time, she was charged with the responsibility of the running of the SICU and supervised monitoring, budgets, purchasing, hiring and performance appraisals. On Thursday, January 10th, 2002, she informed the Clinical Risk Manager Yvonne Morier, that Ms Morier was to keep her informed about the incident, because she was concerned about repercussions.

[143] Kaaren Neufeld, Chief Nursing Officer testified that she became aware of the incident concerning June Morris on Wednesday, January 9th, 2002. She was contacted by Dr. Michel Tetreault, the Chief Medical Officer of SBGH, and had talked to the doctors at the hospital regarding the unexplained death. Ms Findlater had by that time also alerted Ms Neufeld to the situation. They were investigating a possible medical error because of the abnormally high potassium reading. Ms Findlater was speaking with staff to try to get to the bottom of it.

[144] By Friday, January 11th, Kaaren Neufeld was concerned enough about the seriousness of the situation that she alerted the CEO of SBGH that there were "no conclusive findings". Ms Neufeld testified that she first became aware of the buretrol readings on January 14th, 2002. She recalled meeting with Dr. Bell and Ms Findlater. Dr. Bell thought it might have been a criminal act. She told the Court that this was a turning point for her.

[145] Dr. Bell couriered a letter to the Chief Medical Examiner on Monday, January 14th, 2002 expressing his concerns about the possibility of foul play or criminality on someone's part. Dr. Bell met with Ms Findlater and Ms Neufeld and showed them the letter. Kaaren Neufeld called Ms Morier, Ms Findlater and the Director of Pharmacy to set up a meeting. She also spoke to Dr. Kassam, the Acting Chief Medical Officer, to say that they needed to meet with the CME to include a wider group of people at the meeting on Monday afternoon.

[146] They did have a meeting on January 14th, Monday afternoon, pressing the CME to get involved. Present at the meeting were key hospital staff, the CME and members of his staff. The meeting was mostly taken up with discussion of June Morris' potassium blood level.

[147] Ms Neufeld told the Court that Winnipeg Police Services had in fact been contacted by the CME by that point and had been notified of the January 14th meeting. The police, she said, asked to be kept in the loop.

[148] No staff member from the hospital was admitting any error. The administration at the hospital felt they needed to involve the police. However, they were still weighing scenarios of either medical error or intentional act.

[149] Dr. Tetreault confirms:

> Well, we felt and, and the Chief Medical – "we" being St. Boniface and the…Chief Medical Examiner's office felt that we had done as thorough an investigation as we could, we had not come up with an explanation, there was a, a suspicion of foul play that had been brought forward. We felt that we could not bring this to resolution, so we had to ask the police in this matter to take over the investigation at that point.

[150] A meeting eventually took place between representatives of the St. Boniface General Hospital, representatives from the Chief Medical Examiner's office, and representatives of the Winnipeg Police Service but not until January 22nd, 2002, almost three weeks after June Morris' death.

[151] At the January 22nd meeting, the Winnipeg Police Service assigned a team to investigate the incident. The police coordinated their investigation through the office of the Chief Nursing Officer, in order to gain access to staff and records. Ms Neufeld stated that the Winnipeg Police Service at that point took over the investigation.

WHY DID IT HAPPEN?

SYSTEM SAFETY

[152] Nurse Chin, echoing all other nursing staff on the SICU that evening, is adamant that he did not administer any excess potassium to June Morris, nor did he see anyone else administer it. He confirmed that he did not administer any potassium chloride to June Morris, nor did he see anyone else administer it. Who administered the excess potassium remains a mystery.

[153] The Crown called an expert witness to assist the Court in analyzing why this incident happened.

[154] The Court heard expert evidence from Dr. Jan Davies. Dr. Davies gave expert testimony to this Court in the areas of system safety, quality assurance and human error. Her testimony was invaluable. Dr. Davies' medical specialty is anesthesia. It was in the realm of anesthesia safety issues that her research interests and academic application of her expertise began. The author of numerous publications in her field of expertise, she has advised the Chief Medical Examiner's Office in Alberta and Saskatchewan and the Coroner's Office in British Columbia. She has testified as an expert in several inquests including the Pediatric Cardiac Surgery Inquest held in Manitoba.

[155] System safety, in the health context, is the process of viewing every single component of the health care system commencing with the **patient**, through the **personnel** looking after the patient, the **equipment** used, the **environment** in which the patient is placed, the **organization** of the medical institution and the **regulatory agencies** controlling the actions.

[156] Quality assurance is a systematic way of looking at health systems in particular and systems in general. It begins with the **structure** (a grouping of interrelated components), continues with the **process** (the components acting together in an environment), and ends with the **outcome** (the result of structure and process).

[157] Human error is a very broad term which can apply to individuals singly or collectively, recognizing that it is actually humans who make errors.

[158] Dr. Davies elucidated a number of basic system principles:

1. One error does not necessarily cause a catastrophe or an adverse outcome. Catastrophes or adverse outcomes evolve.

2. Individuals contribute through action, inaction, error, violation or sabotage.

3. Actions and inactions can be triggered or compounded by working conditions.

4. The working conditions can be influenced by system flaws which are also known as “latent conditions” or “resident pathogens”.

5. System flaws originate from actions or inactions of individuals, such as designers, manufacturers or managers.

[159] She defined an error as “a failure of planned actions to achieve desired ends arising from some unforeseen event”.

[160] She defined three types of errors:

1. A slip, such as Nurse Kulczycki’s charting 25 millilitres an hour instead of 50 millilitres an hour.

2. A lapse, defined as a short-term memory failure: for example, Nurse Chin’s forgetting to completely write a label on the line infusing potassium into June Morris.

3. A mistake, defined as an error of judgment at a higher level of thinking, such as an incorrect calculation of medication.

[161] A violation is a deviation from a safe operating procedure or standard or rule. A rule is broken, but the action may be performed with good intentions.

[162] She defined three kinds of violation:

1. A necessary violation. This type of violation is a structure-driven violation: for instance, where there may be a structural flaw or an organizational failing. For example, inadequate staffing, unsafe design of an environment, bad equipment or budget constraints.

2. A routine violation. These violations are aberrant processes which are process-driven violations. An example of this would be cutting a corner, taking the path of least effort, poorly-learned tasks, group flaws. For example, inadequate charting.

3. An optimizing violation. This type of violation relates to an adverse outcome or an outcome-driven violation. There is no intention to harm but the act usually goes to the benefit of the practitioner rather than the patient's outcome. An example would be leaving the hospital to buy a cake.

[163] She defined sabotage as rule-breaking with a bad intent and she cautioned that sabotage is very, very rare.

[164] Dr. Davies outlined three kinds of investigations:

- Safety investigations;
- Administrative investigations;
- Regulatory investigations.

1. Safety investigations do not look at particular individuals. They are triggered by adverse outcomes and their aim is to identify and minimize the contributory system factors. They require development and implementation of safety recommendations.

2. Administrative investigations are triggered by reported behaviours and aim to minimize hazards at the personal level. The performance of an individual worker is examined.

3. A regulatory investigation is triggered by details of behaviour and its aim is to determine if any individuals require sanction or discipline. It also examines compliance with rules and regulations and fulfillments of legal requirements.

[165] Dr. Davies' overview of system safety and human error greatly assisted the Court to examine the patient, personnel, equipment, organization and regulatory agencies to try to understand why this incident happened.

STAFFING OF NURSES AT SBGH SICU

[166] I heard evidence that on the SICU, a patient-to-nurse ratio of one-to-one is preferred. A two patients-to-one nurse ratio would occur only when two SICU patients are not acutely ill. Ms Rhonda Findlater, the Project Team Manager at SICU, confirmed that she sometimes requests more nurses for the SICU if all the patients are acute. Should this occur, she can request extra staff be moved into an IC unit. Staffing decisions are her ultimate responsibility, as is any related overtime decision.

[167] As to "pressures" from the hiring authority, the WRHA, Ms Findlater explained that there was, in 2002, pressure within the critical care region, because of a severe critical care nurse shortage. 60 to 65 beds had been closed because of staff shortages. However, she stressed that there was no specific pressure to go to a two patients-to-one nurse ratio in the IC units. There was pressure on the system generally.

[168] Charge Nurse Friesen also testified about these concerns, confirming that Charge Nurses received a lot of pressure to increase the workload on the nursing staff. She felt that there was more pressure to double up patient load, as opposed to a one-on-one patient to nurse ratio. The SICU closed beds if they did not have the staff. They transferred patients to other institutions to accommodate these staffing issues. In January of 2002, the average number of beds in use in SBGH SICU was seven. A one-on-one ratio was preferable and usual.

[169] It is clear from the evidence that there is a shortage of IC nurses in the region.

I therefore recommend:

1. That a review of staffing ratios for Critical Care Nurses on ICUs in the region be undertaken by the Winnipeg Regional Health Authority (WRHA).

FATIGUE AND SAFETY

[170] Nurse Chin told the Court that January 4th, 2002, he was working the 12-hour day shift from 7:30 a.m. to 7:30 p.m. on the critical care unit. He was tired by the time he got home. Charge Nurse Friesen confirms that Nurse Chin

was sleeping when she phoned him at home around 10:00 p.m. and he was generally not expansive in his responses.

[171] Having said that, not one nurse, including Nurse Chin, expressed any dissatisfaction with 12-hour shifts. Each critical care nurse that testified told the Court that they could cope with such a long shift. Be that as it may, expert witness Dr. Jan Davies confirmed that there is a correlation between fatigue and the incidence of medication errors. From a system safety perspective she noted:

> We know that the more tired you are, the less able you are to perform calculations, the less accurate you become and the less aware of your own miscalculations you become.

I agree.

I therefore recommend:

2. That the St. Boniface General Hospital (SBGH) and the WRHA review the policies with respect to nurses' work shifts.

3. That the SBGH and the WRHA consider adopting a Fatigue Management System, such as the one developed by Professor Drew Dawson, University of Adelaide, Australia (http://www.humantra.com/index.php).

NURSES MIXING MEDICATIONS

[172] Court heard evidence that the Critical Care nurses were mixing and preparing medications at or near June Morris' bed. It was a common occurrence in ICUs. Again, this activity takes place in a cramped and busy environment with many interruptions.

[173] Pharmacist Davis confirms that the order for potassium acetate that she received did not tell her anything about its rate of dilution. She was not aware of dilution rates. She confirmed that dilution is done on the ward. She simply wrote it out as it was ordered.

[174] Dr. Davies recommended, and I endorse the idea, that a "Failure Modes Effect Analysis" (FMEA) be carried out, to examine the possible hazards and harm related to having nurses on a ward preparing or mixing medications. This would include an analysis of the effect of taking the nurse away from the bedside to

prepare medications and the problems with interruption during the course of such preparation. The FMEA process involves the following steps:

1. assembling a team;

2. flow-charting the process;

3. identifying all the possible failure modes to address first;

4. prioritizing which failure modes to address first;

5. designing changes in the process to reduce the risk of the high-priority failure modes from occurring;

6. selecting outcome measures that will help you determine whether the planned changes have been successfully implemented;

7. implementing the changes and re-measuring.

[175] Dr. Robert Robson, the Director of Patient Safety and Quality Improvement for the WRHA, described for the Court the use in the WRHA of Failure Mode Effects Analysis. He also confirmed that SBGH has completed one FMEA project, relating to the provision of medications in the Neonatal Intensive Care Unit.

[176] The Chief Medical Officer of SBGH, Dr. Michel Tetreault, confirmed also that he believed it would be an excellent idea to do an FMEA of the drug preparation for IV mixtures in critical care. Dr. Tetreault confirmed that this type of FMEA would be a complicated undertaking and take some time: at least a year, if the correct personnel can be freed up. Needed would be representation from pharmacy, critical care, clinical risk, and expertise in FMEA implementation.

[177] The Court has concluded that the FMEA is a proactive method of analysis that can be applied to try to prevent critical clinical occurrences, injuries and unnecessary deaths. The fact that nurses are expected to mix medications, including high-hazard medications such as potassium chloride or potassium acetate, is cause for concern from a safety perspective.

I therefore recommend:

4. That the staff of the Pharmacy and the staff of the SBGH and the WRHA continue to review the purchase from pharmaceutical companies of standard

medications and infusions, versus having a central intravenous admixture (CIVA) programme, versus having nurses prepare medications and infusions.

5. That the staff of the Pharmacy and the staff of the SBGH and the WRHA review the current situations where nurses are required to prepare medications and infusions, especially high-hazard medications and infusions, rather than have them administer unit doses prepared elsewhere.

6. That should preparation of medications and infusions be required, then consideration should be given to conducting a Failure Modes Effect Analysis to review possible hazards and harm related to preparation, for example, in taking nurses away from the bedside and also in the potential for interruptions when the preparation of medications and infusions is being carried out.

NURSES' SHIFT REPORTS

[178] Court heard evidence that each nurse who arrives to commence caring for any patient is reported to verbally by the nurse currently caring for that patient. Dr. Davies recommended that a checklist be devised, reasoning that for lifesaving enterprises, checklists are "really imperative".

[179] Nurse Chin was adamant in his evidence to the Court that he definitely would have told the nurse to whom he was reporting about June Morris' status, about which line the medications were infusing in and about the rates of infusion. However, he also tells the Court that he did not look at the pump speed after his report to the oncoming nurse. He confirms that June Morris' status was critical when he left the hospital.

[180] Nurse Kulczycki, to whom Nurse Chin reported about June Morris, also confirmed that during the report to her by Nurse Chin, neither of them visually inspected the IV lines connected to June Morris or the pump rates.

[181] Nurse Kulczycki testified that she was not able to complete a head-to-toe examination of June Morris, because of June Morris' deterioration. Nurse Kulczycki should have been able to monitor June Morris' heart functions. However, at the time, the catheter inserted into June Morris was not working properly. Doctors were present at bedside adjusting the catheter. Nurse Kulczycki waited for the doctors to leave before she did her own inspection.

I therefore recommend:

7. That the SBGH and the WRHA review their recently-implemented process of hand-over between incoming and outgoing nurses whereby the incoming nurse visually inspects and verifies the infusion pump settings and the lines to and from the patient. This verification is accomplished while the outgoing nurse is still present, so as to ensure continuity of care, as well as to provide an opportunity for the incoming nurse to discuss any problems with the outgoing nurse should a discrepancy be noted. Both nurses at the time of the "report to nurse" should sign on and off after the report, confirming the inspection and verification of IV lines and rates of infusion of medications.

CHARTING

[182] Ideally, all medical events must be charted by medical staff in a hospital to create a complete and accurate record of any patient's care. The competing interests at play here are accurate, simultaneous charting on the one hand and patient care on the other. Each critical care nurse who testified has years of experience in the IC world. Collectively, they spoke with one voice. All of them echoed the maxim that "patient care trumps charting". These competing interests can result in a system safety issue.

[183] As an example, Nurse Kulczycki testified that during the evening of January 4th, 2002, she did not have time to chart simultaneously or in a neat fashion. This was because she was fully occupied with looking after June Morris. She told the Court that she had no spare time; things happened very quickly. She maintained that if a nurse is charting in such circumstances, a nurse can make a charting mistake and that nurse will have to correct it at some point. In fact, it is clear that on the fluid intake and output sheet, Nurse Kulczycki's entries are not accurate as to time. They are estimates.

[184] Nurse Rose Neufeld also confirmed that charting sometimes is not even close to contemporaneous. There is a real difficulty in charting simultaneously in any IC unit, if the care of a very ill patient such as June Morris is demanding the nurse's full attention. Doctors experience the same problem. It is a fact of life on the SICU.

[185] Nurse Chin articulated the desire of all the nurses who testified when he stated that nurses should try to chart times more precisely.

[186] Kaaren Neufeld, Chief Nursing Officer at SBGH, heralded the advent of electronic charting. She explained that as a result of electronic charting, patients would wear a bracelet with a bar code and the prescriptions for that patient would match the bar code from the pharmacy. This will hopefully prevent the wrong dose and the wrong drug.

[187] Kevin Hall, the Director of Pharmacy Services for the WRHA, confirmed that a review is underway with respect to ensuring that the electronic systems do not use "problematic abbreviations" in prescriptions. Some of the existing electronic systems, for example, use the abbreviation, "U", and U can be confused and printed on a label as a zero and cause what Mr. Hall called "a tenfold error".

[188] The Institute for Safe Medication Practices Canada (ISMP Canada) is an independent Canadian non-profit agency that collects and analyses medication error reports. It also develops recommendations for the improvement of patient safety in regards to administering medications. ISMP Canada has worked with hospitals across Ontario and other provinces to identify and implement strategies to promote the safe use of hazardous drugs such as potassium chloride.

I therefore recommend:

8. That the SBGH and the WRHA consider a review of current charting practices and policy and consider adopting the recommendations for charting according to the medications safety principles from ISMP Canada.

9. That the SBGH and the WRHA continue to review the feasibility of the implementation of electronic charting.

MEDICATION LABELING

[189] Charge Nurse Friesen confirmed that it is standard operating procedure to ensure that lines are labeled so no medications can be confused. For instance, the buretrol itself should be labeled. Charge Nurse Friesen noted that there were no initials and no signature and no amount written on the potassium or magnesium sulfate labels on June Morris' IV line.

[190] Rhonda Findlater, Project Team Manager, confirmed to the Court that when a medication is administered into a line connected to a patient, that line should be labeled by the person administering the medication, with the following information:

1. Medication

2. Time

3. Dose.

I therefore recommend:

10. That at the time of administering medication to a patient, the following information must be noted on the intravenous line label: 1) the medication; 2) the time; 3) the dose; 4) the signature of the person administering the medication; and 5) the date.

11. That at the time of initiation of a medication or IV bag change, the change ought to be checked and verified by two nurses.

[191] Nurse Kulczycki testified that she administered the medications Versed and Fentanyl to June Morris and entered this in writing on the medical chart. The medication she assumed to be Versed was in fact contained in a syringe that was previously drawn up by Nurse Chin. This medication, believed by Nurse Kulczycki to be a sedative, was administered by her to June Morris through an intravenous line with a push injection or bolus.

I therefore recommend:

12. That no nurse ever administer medications prepared by another nurse.

[192] In a similar vein, Nurse Chin advised the Court that the buretrol has demarcated measurements on it and the total top-up of the fluid for the buretrol was 100 millilitres. He admitted that he neglected to label the buretrol. Nursing policy mandates labeling when a drug is added to a line. He did not do this. Nurse Neufeld did it for him after she administered the magnesium sulfate.

I therefore recommend:

13. That no nurse sign that they have administered for medications not in fact administered by them.

14. That the SBGH and the WRHA review their policies regarding the administration, labeling and charting of medications.

FLUID INTAKE AND OUTPUT CHART

[193] The entries on June Morris' fluid intake and output sheet are very confusing. The entries do not clarify what medications were entered into which IV line. The sheet does not allow any room for adjustments. The hourly entries do not accurately reflect "real time" entry.

[194] Charge Nurse Friesen confirmed that it is almost impossible to read June Morris' fluid intake part of the chart. Even she cannot tell from the sheet which IV line is which and what drug is in what line.

[195] Nurse Kulczycki again illustrates that many of the entries are not accurate: the form itself creates an hourly option only. As an example, June Morris' chart shows that the neosynephrine medication was discontinued at 1905 hours, but it was not entered as such until 2000 hours.

[196] Even though the Court was assured by Kaaren Neufeld, Chief Nursing Officer, that the times and lines are not really crucial on this particular chart, since it is simply a measurement of fluid in and out of the patient's system, the Court concludes that these are problems created by the cramped nature of the sheet itself. This may be remedied by recrafting the document or instituting electronic charting.

[197] Expert witness Dr. Davies agreed. She told the Court she found the 24-hour fluid balance sheet particularly problematic. She had a hard time trying to determine what fluid was given, in what volume and at what time. She found the form hard to follow, as did some of the nurses on the unit at the time of June Morris' stay. She found it difficult to go from the right hand side of the form where fluids are listed vertically, to the left hand side where fluid is charted horizontally. Some of the boxes are very small and it is difficult to fit pertinent information in the boxes.

[198] Given that the form itself drives the charting of the fluid balances, the difficulty with filling out an accurate record makes this form itself a structure-driven violation. It is an obvious concern to the Court that the professionals using the form cannot make sense of it.

I therefore recommend:

15. That the SBGH and the WRHA review the "24 Hour Fluid Balance Record Intensive Care Unit Flow Sheet" used to chart the infusion of intravenous fluids and consider revising the form according to Human Factors principles, such as layout, spacing, fonts, shading and flow of information.

16. That the SBGH and the WRHA review the "24 Hour Fluid Balance Record Intensive Care Unit Flow Sheet" used to chart the infusion of intravenous fluids and consider revising the form to ensure the ability of nurses to chart the hospital/serial numbers of any infusion pumps (or similar equipment) used to assist with the infusion of fluids and medications.

17. That the SBGH and the WRHA review the Intensive Care Unit Flow Sheet to determine if this sheet functions as a systematic checklist for hand-over or requires revision.

THE INFUSION PUMP

[199] Peter Graham Lawes is the supervisor of the Clinical Engineering Department at SBGH. He has an engineering technology background. He gave the Court a demonstration of how a pump works.

[200] Each channel on the three-line pump is independent of the other. Mr. Lawes stressed that the pump **cannot** change its own rate. It has to be changed manually by a human being. The pump never delivers more than what it is programmed to deliver.

[201] Mr. Lawes told the Court that SBGH is now using the latest model pump.

[202] Yet, in order to illustrate that safety is a continuum and nothing is necessarily completely safe, Dr. Davies pointed out that one of the latest-model pump-functions, the function that alerts the user as to whether the patient is to be classified as a "new" patient or an "old" (current) patient, ought to be modified so that it runs longer, to allow time for the information to be properly entered prior to the pump automatically and sometimes incorrectly registering the patient as "new". She confirmed that each discovery of any potential design flaw results in a safer product. In fact, she told the Court that the corporation manufacturing these pumps is making that very adjustment.

[203] About the pump in general, Dr. Davies had this to say:

> Well, I personally think that the serial number of every pump used, and whether that's the hospital's serial number or the manufacturer's serial number, should be included. Or, whether or not you have your own SICU pump number one sticker on there, as long as everybody knows which pump is actually "pump number one". But, I think that that should be indicated on the fluid balance, because, perhaps there's a problem with pump number one and it has a problem with free flows, so that fluid is running into the patient in an uncontrolled manner.
>
> Now, I don't believe that that happened in this case, but we do not know, because we don't know which pump was used and whatever pump was used, was not returned to service and not checked.
>
> The pump in this case has a retrievable memory. No one recorded the pump number on the chart. Had it been recorded, the immediate need to seize the pump, which also was not done, would have been alleviated. One would simply download the memory from it; recording the serial number would suffice.

This makes eminently good sense.

I therefore recommend:

18. That the pump serial number be recorded on the patient's medical chart to allow retrieval of a patient's medication infusion history.

INFUSION PUMP SPEED

[204] The pump speed on the channel of the pump labeled as delivering potassium acetate to June Morris was increased by someone at some point from 25 millilitres of fluid per hour to 50 millilitres of fluid per hour. How this occurred and who is responsible remains a mystery.

[205] Nurse Chin was adamant that he did not change the pump speed to the buretrol at any time after first infusing the potassium as ordered. He asserted that he did not have to change the pump speed, because it was set to infuse the potassium acetate at 25 millilitres per hour. It is not clear from the fluid intake/output sheet which IV lines were connected to the pump. Nurse Chin recalls that there were three IV lines delivering medication and fluids to June Morris through the pump at 1800 hours. He further confirms that no one ever ordered him to increase the pump speed.

[206] Nurse Kulczycki confirmed that a nurse needs a doctor's order to deliver any medication faster than was originally prescribed. However, a nurse does not have to obtain a doctor's order to change the rate of infusion of medication to a pump, as long as the proper dosage of medication is still being delivered.

[207] Nurse Kulczycki confirmed that it is her writing on the fluid intake/output sheet when the entry for the pump rate is "50", as in 50 millilitres per hour. She is not sure when she wrote it.

[208] She says she assumed the pump was running at 25 millilitres per hour, but she later observed that the pump was actually running at 50 millilitres per hour. She then "corrected" her entry by writing directly over her own first entry. She maintained that she would not necessarily have been suspicious of a 50 millilitre per hour pump speed, as long as there was more solution that had been added to the buretrol.

[209] For the hourly fluid reading at 2000 hours, she re-charted "50" and for the hourly fluid reading at 2100 hours, she charted "50". She was unable to explain her actions with respect to these entries. She agreed that it is not a good practice to write over on a form, but maintained that there is no room to do much else, so the form ought to be changed.

[210] Nurse Kulczycki concluded that the input she charted is accurate; it is the times that are inaccurate. For example, she recorded a fluid input reading at 2100 hours. June Morris was already pronounced dead by 2100 hours. Nurse Kulczycki recalled that these levels were actually taken before 2038 hours when the resuscitation code was actually called. She recalled both readings being taken around 2000 hours, which means that Nurse Kulczycki took two readings which were supposed to be taken on the hour within minutes of each other.

[211] Be that as it may, Nurse Kulczycki testified that she at no time changed the pump speed. She maintained that the pump speed was changed before she came on shift. She also confirmed that she would never let another nurse deal in any material way with her patient without her knowledge or consent.

[212] She recalled, in fact, being at June Morris' bedside continuously except for about a minute, in order to walk to the nurses' desk to speak to the resident after 2000 hours. She stressed that it was not possible for anyone to give medication to

June Morris while she was away. She says the additional potassium had to have been administered prior to her arrival.

[213] Again, the Court is left with an unexplained critical occurrence.

I therefore recommend:

19. That the actual time of observation of a reading be recorded on a patient's medical chart.

SBGH PHARMACY

[214] Generally, says Carol Davis, one of the SBGH Pharmacists, 1700 hours is one of their busiest times because of the afternoon rounds and resulting doctors' orders. Ms Davis advised the Court that potassium acetate is stored in a sterile room in the pharmacy itself and it would have to be retrieved. There is no record kept of when the potassium acetate prescription was ready.

[215] Generally, a technician will prepare a group of medications together. After that, both a pharmacist and the technician initial the bag as having been checked.

[216] Pharmacist Davis confirmed that an order entry is completed and then a label will print out for each medication. The label is picked up by a technician. The medication is then located by a technician in the dispensary and placed in a plastic bag. The label is affixed to the bag. Pharmacist Carol Davis told the Court that potassium acetate order struck her as "urgent". She would have prioritized it as such, as well as the antibiotics that were ordered. She confirmed that ICU prescriptions are highest priority.

[217] Again, there is no record of the time the pharmacists check their own prescriptions. Pharmacist Davis said with certainty that she would not have checked the prescription for potassium until 1724 hours. She did, however, remember checking the prescription of potassium acetate. She confirmed that the potassium would definitely have been approved by her before she left at 1730 hours.

[218] Once prescriptions and medications are checked, a technician then places them in the pneumatic tube line. Generally, the pharmacy sends up the unit's entire medication order at one time in the same pneumatic tube. On the SICU, the

pneumatic tube system is located on the outside wall of the dirty utility room. When medication arrives via the pneumatic tube, the mechanism chimes. If medication is mistakenly picked up by the staff at the Post-Anaesthesia Recovery Room, it is dropped off at the nurses' desk, given to the patient's nurse or left in the med room at SICU. Ward Clerk Sabrina Boreski confirmed that if SICU picks up medications for the adjoining unit, she would personally take the medication to the adjoining unit's charge nurse or their nurses' desk.

[219] Charge Nurse Friesen testified that rarely would medication be put in the medication (med) room, because staff would not be aware it had arrived. Ward Clerk Boreski was asked specifically what she did when medication arrived on the SICU and she verified that she picked up the medication from the pneumatic tube system and placed it in the med room. Only if she had been advised by a nurse that someone was waiting for a specific medication would she ever take the medication directly to that nurse.

I therefore recommend:

20. That medications delivered to the SBGH SICU be deposited either at the bedside of the patient after alerting the bedside nurse, or to a designated area at the nurses' front desk.

[220] Pharmacist Davis agreed that the potassium acetate medication could not have arrived through the pneumatic tube system to the SICU until between 1730 hours and 1740 hours at the earliest. It could well have been later. It could not have been earlier.

[221] Winnipeg Police Service Detective Sergeant John Burchill pointed out that, in fact, even the pneumatic tube system has a memory. It could have been downloaded to find out when the potassium acetate was shipped up.

I therefore recommend:

21. That the SBGH conduct a review to examine the feasibility of the SICU having its own exclusive pneumatic tube for delivery of medications.

SATELLITE PHARMACIES

[222] The attending physician on the day in question, Dr. Chrusch, emphasized to the Court the need for a pharmacy attached to the SICU, a "satellite" pharmacy, where medications needed can be ordered and received more quickly and efficiently. For instance, at the Health Sciences Centre, for the past 15 years, there has been a satellite pharmacy in proximity to their ICU. SBGH Director of Pharmacy, Donald Mestdagh, also wholeheartedly endorsed the concept of a satellite pharmacy for the SICU.

[223] Kevin Hall, Director of Pharmacy Services at the WRHA, highlighted the pharmacy staffing resource issue at SBGH. He pointed out that SBGH is well below its peers in terms of overall pharmacy staffing. From the hospital's perspective, SBGH Chief Medical Officer, Dr. Michel Tetreault, affirmed that their ideal would be a satellite pharmacy in the Critical Care area. Expert witness Dr. Davies explained that the idea of a satellite pharmacy includes the safety aspect of including the pharmacist in the model of care. Dr. Davies highlighted the disconnectedness of the basement pharmacy at SBGH from the SICU and the lack of communication between the pharmacist filling the prescription and the SICU staff.

I therefore recommend:

22. That the SBGH and the WRHA consider establishing a satellite Pharmacy for the Critical Care Units at SBGH, similar to the one at the Health Sciences Centre, so as to provide "just in time" medications and so as to decrease any potential errors and delays in the delivery of medications and other dispensed items.

PHARMACY STAFFING

[224] Pharmacy Director Donald Mestdagh endorsed a recommendation that the SBGH and the WRHA review the staffing patterns for their pharmacies. He confirmed that there was a recent review by Deloitte, Touche through the auspices of the WRHA that identified the pharmacies in the WRHA as understaffed by approximately 45 full-time equivalents, and the pharmacy at the SBGH as understaffed by 35 full-time equivalents, as opposed to comparable hospitals throughout Canada.

[225] Dr. Davies commented on the pharmacy staffing issue:

> Part of a safety review is to look at things that could potentially affect the safety of other patients. And, therefore, if I see that someone from that specific area says: "At five o'clock in the afternoon, we are busier than at any other time." And, if someone, who I gather might be in charge of the pharmacy says: "But our staffing is lower." Then, from a commonsense matching of workload to number of personnel available, is to suggest that a review should be carried out of the staffing.

[226] Pharmacist Davis agreed that a second pharmacist should be checking her work, so there is in fact a double-checking system, to ensure that the label and the medication match and that the prescription is therefore correct. She, however, believed that at present it is not possible for every prescription to be double-checked, because of staff shortages.

I therefore recommend:

23. That the Pharmacies in the SBGH and the WRHA review the staffing patterns for their Pharmacies.

[227] Pharmacy Director Donald Mestdagh confirmed that a "shared model of care" between physicians, nurses and pharmacists, meaning the pharmacist is available or present for consultation during rounds and present on the ward to provide advice, is already in existence at SBGH SICU, but for only part of the day. Staffing limitations in the pharmacy limit the pharmacist's participation in the shared model of care.

I therefore recommend:

24. That the Pharmacy staff and the SICU staff at the SBGH and the WRHA continue to expand a shared model of care, such that there could be greater interaction among pharmacists, doctors and nurses in the SICU.

25. That the Pharmacy staff and the SICU staff at the SBGH and the WRHA consider that this expanded shared model of care be applied also in all the other Intensive Care Units.

MEDICATION SAFETY ISSUES

[228] Dr. Jan Davies questioned why the potassium acetate medication marked "for pharmacy use only" would be sent to any area that was not a pharmacy. As an expert in the area of human error, she mused, when examining the vial of potassium acetate that was sent up from the pharmacy to SICU for June Morris:

> I recall my difficulty when looking at the order. I thought that the dose was 20 mls out of that bottle, rather than the 5 mls out of the bottle. So, sending me a bottle of 50 mls, I might have thought well, there's two and a half doses, rather than, there's actually 10 doses there.
>
> I personally, am confused by that and would tend to want to give 20 mls. And I think that the same recommendations that apply to ordering, should apply (to) labeling. That things are written out, essentially, in plain English, as much as possible, that they're fully written out so that there's no opportunity for confusion.

[229] She was asked if she had a recommendation with respect to that safety concern:

> Well, I think in general, in healthcare, we're moving towards single dosing, or unit dosing. So that you provide the dose for that patient for that one time and they get all of that amount. Because it then removes the, the problem of doing the calculation, or taking the bag down after you've given half of it. It's another safety precaution. The dose sent is the dose needed.

[230] Dr. Davies also endorsed posting the details of this incident on the ISMP website to allow people around the world to learn a safety lesson. I agree.

I therefore recommend:

26. That the Pharmacy of the SBGH and the WRHA review the use of multi-dose versus single dose medications.

27. That the Pharmacy of the SBGH and the WRHA review the policies and procedures for the dispensing of stock labeled "For Pharmacy Use Only".

28. That the Pharmacy of the SBGH and the WRHA complete and submit a "case report" to the Institute for Safe Medication Practices Canada (www.ismp-Canada.org).

29. That the Pharmacy of the SBGH and the WRHA review the policies and procedures for including instructions as to preparation (including dilution) and administration with any medication dispensed.

[231] Dr. Davies also noted that some physicians are unaware of the times when their prescribed medications are administered. Director of Pharmacy Donald Mestdagh explicated that while the pharmacy possesses the information, it is not the pharmacy that would be responsible for providing that information to the physicians. It would be the responsibility of the Department of Medicine, the SBGH and the WRHA to provide that information. The pharmacy as such has no control over physicians, residents, or interns.

I therefore recommend:

30. That the Departments governing physicians, the Pharmacy of the SBGH and the WRHA provide information to interns, residents and attending physicians as to the standard times when regularly scheduled medications are administered (unless otherwise ordered).

31. That the Departments governing physicians, the Pharmacy of the SBGH and the WRHA provide information to interns and residents working in the Intensive Care Units about how to order certain ICU-specific medications, especially if the medication is not commonly ordered.

JUNE MORRIS' POTASSIUM ACETATE PRESCRIPTION

[232] I heard evidence that the potassium supplement ordinarily prescribed in these circumstances is potassium chloride. However, June Morris had an elevated level of chloride in her body. The medical team concluded that potassium chloride would, if administered, further elevate the chloride level in her body. Therefore, potassium acetate, not potassium chloride was prescribed.

[233] Physicians' orders are a team effort and a group consultation, even though written by one physician. Resident Dr. Viallet wrote the order at approximately 1600 hours. The team discussed the order and it was considered to be a standard dose.

[234] The Court heard expert testimony from Dr. Robert Ariano, an expert witness in the area of clinical pharmacology. Dr. Ariano was of the opinion that "a high chloride level should not have an impact on the type of potassium given". He felt

it very unusual to prescribe potassium acetate. Be that as it may, the dose of potassium should have put her level within normal range by the time the dose was completed or infused. It would have been completed, if necessary, after four hours.

[235] The potassium acetate prescription for June Morris, as written, was confusing. The order itself was written as follows: "5 meq times 4 IV = 20 meq."

[236] Expert witness Dr. Davies stated quite succinctly:

> Abbreviations should not be used. Things should be written legibly, in full where possible. If you're using a number, sometimes you will repeat the number in writing underneath.

[237] The doctor's written order was a standard shorthand for four milliequivalents per hour for four hours intravenously. The drug was ordered in a way that was standard and commonly understood, according to all medical staff who testified. That understanding, at the time of the writing of the order, was that the potassium acetate was to be administered at the rate of 5 millimoles per hour for four hours. Furthermore, the 20 millimoles of the potassium acetate concentrate was to be diluted into sterile water to the combined total amount of 100 millimetres, for infusion over four hours.

[238] The first issue of note is that the prescription as written on January 4th, 2002 did not specify ANY rate of dilution.

[239] Dr. Bell, the Director at SBGH SICU, agrees that the potassium acetate prescription is not written in absolutely correct form. Times four or "x 4" should have been "x 4 hours" and "5 meq" should have been "5 meq per hour".

[240] This was, unfortunately, common usage at that time.

[241] Dr. Davies told the Court that the prescription for potassium acetate was confusing to her, who was "an outsider" to SICU. She stressed that if not everyone understands the order, then the order has the potential to cause harm. She believes that there should be some form of national standard, such that there is a national understanding to not use confusing abbreviations. She stated succinctly:

> Essentially, we should just be writing things out in plain English. That's what it comes down to.

[242] Dr. Ariano, an expert in clinical pharmacology, opined that the prescription ought to have specifically been written as millimoles, not milliequivalents. However, he concedes that in critical care literature, the standard prescription is recommended to be written in milliequivalents, not millimoles.

[243] Kevin Hall confirmed that the WRHA Pharmacy and Therapeutics Committee approved a document for medication order writing standards. And although it does not go to the extent of saying everything must be in plain English, it bans specific abbreviations that have been associated with errors. If errors persist, the offending party could lose hospital privileges. Mr. Hall thought that any recommendation from the Court regarding prescription writing uniformity ought to include the Manitoba Medical Association and the College of Physicians and Surgeons and their Standards Committee.

I therefore recommend:

32. That the WRHA and the SBGH review the use of the terms "millimoles" and "milliequivalents" in the ordering, labeling and description of medications and, in particular, consider whether it is appropriate to reference both terms in the ordering, labeling and description of medications.

33. That the WRHA and the SBGH continue to review and adopt a more standard format for orders for electrolytes, medications and fluids.

34. That the standard format for orders for electrolytes, medications and fluids used in the SBGH be aligned with those used in the WRHA.

35. That recommendations from the Institute of Safe Medication Practices (www.ismp-Canada.org) be considered with respect to the format of orders for electrolytes, medications and fluids.

CONTENTS OF THE BURETROL

[244] It is clear that upon her arrival at SICU, due to prior physicians' orders, June Morris already had peripheral intravenous lines connected to her and was receiving fluid by way of a previously-connected buretrol.

[245] This is important to note because a trace of a chemical compound, diphenhydramine, was present in the contents of the buretrol infusing into June Morris at the time of her death.

[246] This compound, diphenhydramine, can derive from two sources:

1. Benadryl, a common cough remedy, readily available on the ward at SICU;

2. dimenhydrinate, commonly known as Gravol, an anti-nausea remedy, which when dissolved, breaks down. One of the resulting constituent elements is diphenhydramine. Gravol is available as floor stock on the SICU and on the ward. It was in fact prescribed earlier for June Morris.

[247] There is no record in June Morris' chart of her ever having been given either Gravol or Benadryl. Yet, unfortunately, it is clear from the clinicians' evidence and is a fact of life on SICU that sometimes drugs such as these are administered without being charted. Even Dr. Ariano, the expert biochemist, agrees that the buretrol may have already contained the trace amount of this compound PRIOR to June Morris' arrival on SICU. He agreed with the suggestion that Gravol may have earlier been administered to June Morris and simply not charted.

I therefore recommend:

36. That all medication administered to a patient be entered on the patient's chart.

SHARPS CONTAINER

[248] After June Morris' death and the discovery of the high level of potassium in her blood, a search of the Sharps container at June Morris' bedside and in the med room failed to locate the vial of potassium acetate. The Court concludes that Nurse Chin is mistaken when he claimed he discarded the 50 millilitre vial of potassium acetate in the Sharps container in the med room.

[249] Nurse Courchaine told the Court that he has often seen glass vials discarded in the garbage rather than in the Sharps containers at SICU. He told the Court that he still continued to observe them being discarded in the garbage. Similarly, Nurse Rose Neufeld confirmed that she has in fact polled nurses she works with and some of them still discard glass vials in the garbage.

I therefore recommend:

37. That no glass medication vials ever be deposited in the garbage at a hospital ward or unit.

[250] Again, Dr. Davies noted:

> But, whenever there's a problem with a design that people end up breaking the rules, and when the rule is don't put glass in the garbage, but that's because the design is such that you can't throw the glass in the, the designated glass bucket, so, again, it's an example of a structure-driven violation.

I therefore recommend:

38. That the SBGH and the WRHA consider reviewing the size and design of the small Sharps container kept at the bedside.

39. That the SBGH and the WRHA consider reviewing the size and design of the large Sharps container in Medication Rooms and in Dirty Utility Rooms.

UNUSED MEDICATIONS

[251] The Ward Assistant, Beruk Asgedom, described that there is in fact a drawer near each patient's bed. Sometimes, medication is placed there. The drawer is not locked. The drawer also commonly contains medical supplies, dressings, bandages and normal saline.

[252] Charge Nurse Friesen confirmed that at present, all unused medications, including those placed for "safekeeping" in a patient's bedside drawer, ought to ultimately be placed in a receptacle, located on top of the Pyxsis medication dispenser.

[253] I heard evidence that unused medications are sometimes discarded in the sink at the unit. I agree with Dr. Davies that such a practice be discouraged.

I therefore recommend:

40. That all unused medications in vials or glass be discarded in a safe Sharps container.

[254] Kevin Hall, Director of Pharmacy Services of the WRHA, confirmed the need to avoid the possibility of inadvertently selecting the incorrect medication. Regarding the storage of potassium, he states:

> It deals with the fact that, again, we need to make sure that inadvertently the drugs aren't selected. In the past, for example, you would keep all of your electrolytes together, so you had sodium chloride beside potassium chloride in virtually the same types of ampoules or vials. That made it much easier for a mistake to be made that when someone thought they were grabbing sodium chloride they grabbed potassium chloride. What we did to try to prevent those kinds of things is make sure that the storage areas for these particular salts is different than your general less harmful electrolytes that you, you would have within the pharmacy.

I therefore recommend:

41. That high-hazard drugs in concentrated form be packaged in such a fashion so as to distinguish them from other vials and ampoules of medication.

42. That there ought to be a clearly visible warning on such medications such as "DILUTE BEFORE USE" or "FATAL IF INJECTED UNDILUTED".

POTASSIUM AND OTHER CONCENTRATES

[255] The Court heard evidence that potassium chloride was available as ward stock on the SICU at the time June Morris was in the care of the staff at SICU. Witnesses from the SBGH administration have acknowledged the inherent risk of having a high-hazard medication such as potassium chloride available on the ward. They also acknowledge that reducing the availability and decreasing the variability of the potassium salts, or other high-hazard medications will make the system safer.

[256] Mr. Hall of the WRHA explained the process by which high-hazard medications are assessed and sequestered. Pharmacy and Therapeutics Committees (PTC) constitute a committee structure that is found in virtually every hospital in North America. Each PTC structure is responsible for all aspects related to the selection, acquisition and use of drugs within an institution. A PTC has a multi-disciplinary membership: physicians, nurses, pharmacists, quality assurance personnel and nutritionists.

[257] Following the creation of the WRHA, there was also the creation of a single PTC reporting to the WRHA.

[258] There are essentially four layers to the committee structure. The top layer is the Medical Advisory Committee. The Medical Advisory Committee is made up of the leaders in the medical system within the region, and is responsible for advising, from a medical perspective, the Boards and other senior management personnel within the hospitals. The second layer is the Coordinating PTC. It is an oversight committee consisting of the Chairs of all these committees below it. It is responsible for coordinating all of the activities of the other committees. The third layer has a number of practice areas, such as child health or adult oncology. The fourth layer consists of the active, working committees. So, for example, the Formulary Committee is largely made up of pharmacists, and is involved in coordinating the evaluation of new drugs that come on the market. The Formulary Committee gathers information and eventually makes a recommendation to the PTC. For example, whether a new drug should be used, or whether there ought to be any restrictions on its use.

[259] Once a decision is made within the committee structure, that decision is forwarded to the individual hospitals, which then make their own policies consistent with the WRHA policy.

[260] Donald Mestdagh, SBGH Director of Pharmacy, told the Court that a potassium chloride (KCL) working group was constituted at the SBGH in the early summer of 2001. The membership came from a variety of sectors throughout the hospital in the early fall. The first meeting was scheduled for January 3rd, 2002, coincidentally the same day June Morris was admitted to SBGH. The working group was multi-disciplinary: nurses, pharmacists, physicians, operations people, stores attendants, pharmacy technicians. The focus of the working group was KCL, as opposed to other concentrated forms of potassium, because KCL was readily accessible and heavily prescribed. Potassium chloride was readily available on the wards. The volume of KCL prescriptions used in the hospital is in the thousands annually, as compared to the other potassiums. In 2000/2001, the pharmacy had issued approximately 13,000 ampoules of concentrated potassium chloride throughout the institution.

[261] Following the death of June Morris, potassium chloride was no longer distributed to the units in a concentrated format. On the SICU, potassium chloride ampoules were secured into the Pyxsis stations, which are controlled cabinets. The

nurse would then have to access them through a patient's medication profile. There would therefore be a record of removal.

[262] At a meeting of the Formulary Subcommittee in early 2001, there was a recommendation made to replace ward stock of potassium chloride polyamps with premixed potassium chloride solutions, at all WRHA sites. Essentially by June of 2002, potassium chloride had been removed from patient care areas at the hospitals within the WRHA.

[263] Regarding the use of potassium, a decision was made to use the commercially available pre-diluted solutions, which are much safer. These premixed solutions came in two concentrations: one litre sizes came in 20 millimoles and 40 millimoles per litre concentrations.

[264] The matter then was referred down to the Medication Administration Policy Subcommittee to make changes in the nursing IV manual.

[265] All of the hospitals in the WRHA were instructed to form what was called "KCL working groups" to deal with the issue.

[266] Therefore, a parallel Medication System Safety Subcommittee existed at each of the hospitals for the purpose of acting on recommendations coming out of the same subcommittee at the WRHA level. Another of the objectives was for each hospital to complete the ISMP Medication Safety Self-Assessment Survey.

[267] In fact, a potassium chloride policy was implemented by the SBGH on June 18th, 2002. The potassium policy was updated several times over the course of the next several months. Ultimately, there was a final policy circulated within the hospital in November of 2003. The policy is consistent with the guidelines that were put in place by the WRHA in April of 2003.

[268] Donald Mestdagh outlined the successful implementation of the policy regarding the availability of potassium. Audits both at the pharmacy side and in-patient care areas were completed every six months. The result of the last audit in 2004 was complete compliance.

[269] The end result is that by June of 2002, six months after this incident, potassium chloride had essentially been removed from patient care areas. There is now in place a double-check policy for the pharmacist filling a potassium chloride

prescription for intravenous use. Potassium ampoules now have a fluorescent label that very clearly says “concentrated potassium solution, fatal if injected undiluted, dilute before use”, clearly indicating that it is a hazardous product. Potassium chloride “mini bags” (100 millilitres) are labeled “central line only”, and “infuse over at least one hour” to draw to the attention of the practitioner that this product requires special care.

[270] A regular audit is conducted every six months to ensure compliance with the policy and guidelines. The audit is the administrative method of ensuring compliance. The SBGH is the first to share developed audit sheets with other WRHA sites.

[271] Dr. Davies confirmed that the removal of potassium from the system and the development of policy in the handling of potassium are examples of a successful “forcing function” or constraint. But just as Dr. Davies cautioned that no system is ever completely safe, she recognized a need for further clarity in the potassium chloride guideline:

> The only one thing that came to mind was that the guideline appeared to be written in millimoles and as I have said previously, many doctors and nurses tend to think in milliequivalents and so my only suggestion would be for the translation, how many millimoles equals how many milliequivalents to be contained in a guideline. It’s simple for potassium chloride, one millimole equals one milliequivalent, but if you were then to apply that guideline for potassium chloride to other high hazard medications, which I would presume that the Winnipeg Regional Health Authority would be doing, then I would hope that the translation of the millimole into milliequivalent would be found on the document, itself, in a way that it was easy for people to see, particularly at 3:00 in the morning when one is busy and not at one’s best.

[272] Dr. Ariano, an expert in clinical pharmacology, is also employed as a critical care pharmacist at the SBGH. In terms of Dr. Ariano’s recommendations, he says that the hospital has done what it needs to do which is:

1. Only use a single product potassium chloride and a single strength.

2. Ensure a double-check by two nurses.

3. Put in place education as to how to write out orders properly.

[273] Dr. Davies confirmed, in answer to a question by the Court, that potassium acetate is a high-hazard substance, yet is not included in the high-hazard substance

alert. Dr. Davies felt one of the benefits of sending a case report to ISMP would be to have them revise their list. She confirmed:

> Well, potassium is considered to be a high hazard medication. The ISMP calls it a high alert medication, I believe that's the title used in that document. I prefer the term high hazard, because I think hazard describes what the substance is. It's a hazard to people. It's not an alert to people. We need to be alert about it, we need to issue alerts, but the drug itself is a high hazard.

OTHER HIGH-HAZARD MEDICATIONS

[274] SBGH Director of Pharmacy Donald Mestdagh confirmed that SBGH is approaching each high-hazard drug, one at a time. They have, at the time of preparing this report, turned their attention to insulin. In Mr. Mestdagh's opinion, it is far more productive for a committee that has limited time and availability to "tackle one (high-hazard) drug at a time". He stated:

> Your question before related to why we deal with one drug at a time. It simply boils down to a resource issue. In any safety initiative there's a process review, there's a policy development, there's an implementation, an education phase, an audit, an audit phase and a follow-up. All of these in a large institution such as St. Boniface or any hospital in town are, are very labour intensive activities, and, and I think that, that area is, is severely under resourced in our site and likely at all sites throughout the region. Certainly a lot of good work has been done and, you know, to commend people like Yvonne [Clinical Risk Manager], and the people that sit on these committees, what -- the, the steps we've taken, but you sometimes see the speed at which steps are taken and you question how, how come it took so long, and, and those simply boil down to a resource issue, and again I think in reality if one thing of anything that comes out of this would have to be a strong commitment toward med safety, and resource and initiatives surrounding that safety appropriately.

[275] Kevin Hall, Director of Pharmacy Services at the WRHA, also outlined the complexity of implementing multiple changes and multiple different procedures around all high-hazard medications. He contended that there is a potential for again causing safety concerns as a result of people being confused about the procedures for each high-hazard medication. There is also a resource issue. He confirmed:

> ...we would probably move ahead more quickly with some of these issues around med safety if we had dedicated resources for that. Many health systems have implemented positions that are focused exclusively on medication safety. That would certainly be an advantage to us within the region. … many of these things involve pharmacy resources…. pharmacy and a number of facilities is (sic)

> below, well below the average for staffing in other Canadian hospitals, and those are areas we'd like to see addressed, as well.

[276] Bearing in mind these legitimate concerns, I endorse Dr. Davies' recommendations regarding high-hazard medications.

I therefore recommend:

43. That the SBGH and the WRHA periodically review the guidelines currently in place with respect to the handling of concentrated potassium to ensure they are consistent with the ISMP Canada recommendations.

44. That the WRHA and the SBGH continue to carry out audits of all nursing units and pharmacy departments to ensure that there is compliance with the concentrated potassium guidelines.

45. That the WRHA and SBGH implement guidelines regarding the handling and administration of all drugs identified as high-hazard medications by ISMP Canada.

RE: THE INCLUSION OF POTASSIUM ACETATE IN THE PARENTERAL MANUAL

[277] Dr. Davies mused about revisiting the decision to include potassium acetate in the parenteral drug manual.

> ALSO, maybe millimoles is the correct indication, but then the translation into milliequivalents needs to be laid out very clearly so the middle of the night, at 2:00 in the morning, when the alarm bell's going off, that it's easy to tell what's, what's what in the drug manual.

I agree.

I therefore recommend:

46. That the Pharmacy of the SBGH and the WRHA consider revisiting the decision to include potassium acetate in the Parenteral Drug Manual.

ELECTROCARDIOGRAM ANALYSIS

[278] Dr. Ariano helped the Court understand what an electrocardiogram (EKG) does. It measures a heart's electrical activities.

[279] Dr. Lam was the resuscitating physician at the time the code was called on June Morris. He confirmed in his evidence that the analysis of electrocardiogram (EKG) activity is the responsibility of the resuscitating physician. With the benefit of hindsight, Dr. Lam concluded that June Morris' EKG strips indicated the presence of a high concentration of potassium. In his interview with the Winnipeg Police Service on March 14th, 2002, Dr. Lam viewed an EKG strip from as early as 2009 hours, which he stated, with hindsight, started to show the possibility of hyperkalemia.

[280] Nurse Kulczycki testified that she did not have time to analyze the EKG strips. She further stated that no one was noting a high potassium level during this time.

[281] Dr. Chrusch clarified for the Court her statement to the CME. Her review of the EKG strips was after the incident, not during. At the time, she neither knew nor suspected hyperkalemia. Dr. Chrusch stated that she would have treated for June Morris' hyperkalemia, if she had known, by supplementing calcium, insulin, glucose, bicarbonate and increasing June Morris' breathing manually, with the aid of the ventilator. The EKG strips have a pattern consistent with high potassium. She only saw this retrospectively. It is also consistent, said Dr. Chrusch, with a "dying heart" which is a pre-terminal heart.

[282] It can be said that the course of June Morris' treatment may have been different, had the EKG readings been interpreted differently at the time of her attempted resuscitation.

CRITICAL BLOOD RESULT

[283] At 2020 hours, Nurse Kulczycki made what turned out to be a momentous and crucial medical intervention. She drew blood from June Morris to try to discover what was causing her problems, because her condition was not improving, even though she had good renal function.

[284] Nurse Kulczycki drew the blood without a doctor's order. She wanted to draw blood to examine June Morris' blood gases. Normally, one would wait for the potassium to infuse completely. This is agreed by all supervisory staff as advanced critical thinking on the part of Nurse Kulczycki.

[285] Dr. John Krahn, the Director of the SBGH Biochemistry lab, was declared by me to the Court to be an expert in biochemistry. He explained to the Court the inner workings of the SBGH Biochemistry lab. Among other compounds, the lab measures blood serum. The lab analyzes approximately 500 to 600 blood samples daily. There was a prioritization system in January of 2002. SICU was considered a "STAT" unit and was given a high priority – the target was to get samples analyzed and back to the unit within an hour.

[286] There are a number of steps to analyzing blood:

1. The blood sample is registered into a computer system and labeled;

2. The blood is placed in a centrifuge to spin the serum to the bottom, for analysis purposes;

3. The serum is analyzed, which takes approximately 10 minutes. The results are checked internally on their computer, then transmitted to the main hospital-wide computer system;

4. Each blood sample creates a printout both internally in the computer and a hard copy, both of which are accessible by SICU;

5. The readings are analyzed by a technologist and the ward is notified if necessary, as in this case.

[287] The blood sample drawn by Nurse Kulczycki at 2020 hours arrived at the lab at 2031 hours. It was analyzed at 2107 hours, 36 minutes later. At 2113 hours, a mere six minutes later, the Senior Technologist called SICU to advise of the high potassium reading from June Morris' blood sample. Dr. Krahn referred to this brief timeline as quite exceptional and a sterling performance.

[288] Dr. Lam confirmed that as the doctor in charge of the resuscitation effort, he is required to make notes in the chart. He entered his notes at 2107 hours. However, he wrote an addendum about half an hour later, because he was still in SICU and someone had handed him the blood work which showed the potassium at an excessively high concentration. This was very unusual because the potassium

prescription replacement would not have caused that dramatic a rise in the potassium level. Therefore, he questioned "a drug error". That was one of the explanations he wondered about.

[289] Dr. Viallet was not aware that the nurse had taken a blood sample. If he had been aware of the high potassium levels, there was a different way to treat June Morris in an effort to resuscitate her.

[290] The system in place at SBGH for testing blood ought to be system-wide, according to Dr. Krahn. This Court agrees.

I therefore recommend:

47. That the process for alerting staff to critical blood results be reviewed by the WRHA.

SECURING THE SITE

[291] After the team discovered the high concentration of potassium in June Morris' blood, the initial supposition by some of the SICU staff was that there had been a medication error. To that end, the buretrol and the IV set were located from the garbage and sent for analysis.

[292] However, the vial of potassium acetate was never located. The pump used to infuse the potassium into June Morris' body was not seized or otherwise categorized.

I therefore recommend:

48. That the SBGH and the WRHA review their protocol(s) currently in place throughout the region for investigating unexpected deaths and other adverse outcomes.

49. That the protocol(s) ought to deal with the following:

- *a. how and when patients and personnel are to be safeguarded should there be an adverse event and/or outcome that affects or could affect them;*
- *b. what equipment ought to be secured and how;*

c. if equipment is secured, how and when that equipment should be tested before it is returned to service;

d. if equipment with memory is secured, how and when the memory should be downloaded, before the equipment is returned to service;

e. under what circumstances should syringes, vials and other items be saved and if saved, how and when they should be tested;

f. how and when to secure the environment in which the adverse event or outcome occurred, until the safety of other patients or personnel in the same environment can be secured.

THE SEARCH FOR THE POTASSIUM VIAL

[293] After she was apprised of the high level of potassium in June Morris' blood sample, Dr. Chrusch ordered that the chart and the equipment attached to June Morris be retrieved. In court, Dr. Viallet says Dr. Chrusch specified that the pump also should be included in the retrieval and he says he relayed Dr. Chrusch's instructions to the charge nurse. He did not have that specific recall in his WPS interview and no one else has that recall. This seems highly unlikely in that the hospital or the staff were not aware at that time that the pump actually kept records of its rates, so it was very unlikely that the pump was ordered to be seized. No one else says this.

[294] Nurse Kulczycki and Dr. Viallet sent the IV set-up and buretrol to the biochemistry lab between 2115 and 2200 hours.

[295] Charge Nurse Friesen recalls that no one looked in the garbage or on the floor because "we weren't thinking it would be there".

[296] The fact is that the buretrol was found in the open garbage and the fact that a number of nurses confirmed that glass medication containers were routinely thrown in the garbage, rather than into Sharps containers.

[297] Moreover, no one looked for syringes.

[298] Regarding Charge Nurse Friesen's decision not to remain in the hospital during the code, Kaaren Neufeld, SBGH Chief Nursing Officer, confirmed that if one is the Charge Nurse, one ought to return to one's unit when a resuscitation

code is called. In fact, Charge Nurse Friesen heard the code being called, checked via telephone whom the code concerned (June Morris) and decided to leave to purchase the cake.

I therefore recommend:

50. That the nurse in charge, if present in the hospital, remain on or return to her ward or unit when a resuscitation code is called.

SEIZURE OF MEDICAL EQUIPMENT

[299] There are policies and guidelines for doctors and nurses as to what must be done when a patient dies unexpectedly. The policy states: "all clamps, tubes, drains, IV's, etc. are to be tied or clamped off and left in situ." In this context "in situ" means "in the patient".

[300] The Court was told by the Chief Nursing Officer Kaaren Neufeld that the seizure of a buretrol would never be contemplated in this situation. Moreover, the Director of Nursing stated that there was no complaint by the CME that the IV bags and the buretrol were not included in the equipment seized.

[301] However, all relevant medical equipment was not seized by SICU staff after June Morris died and the blood results were known.

I therefore recommend:

51. That all medical equipment used on a patient be included as part of the equipment seized in a death in a hospital unit due to accident, suicide, violence, homicide or unexpected or unexplained death.

CARDIAC ARREST

[302] When June Morris suffered a cardiac arrest at 2055 hours on January 4th, 2002, the physicians and nurses at the SBGH SICU were not surprised. However, it soon came to light that the cause of the cardiac arrest was due to an excess of potassium in her blood.

[303] Dr. Davies told the Court that most Intensive Care Units undertake detailed reviews of their patients' care. Not all deaths are "expected". She makes a

recommendation with respect to helping the ICU staff to focus a review on particular areas of care: for example, the area of cardiac arrest. The Court agrees.

I therefore recommend:

52. That the SBGH and the WRHA review the systematic criteria for determining when an ICU review should be carried out and how quickly.

53. That if there is not some form of systematic criteria, then consideration be given to either adopting or developing one.

54. That a similar review be applied to the Operating Theatres and Recovery Rooms, the wards, and the Emergency Departments in the SBGH and the WRHA.

INCIDENT/OCCURENCE REPORTING POLICY

[304] In January of 2002, SBGH's policy for "incident reporting", including "unexpected occurrences involving death", mandated that the reporting procedure is the responsibility of the first hospital or medical staff person who becomes aware of an incident. The policy clearly outlined obligations, responsibilities and contingencies in plain language. For "serious incidents" the program team manager or program support manager or supervisor had to be notified immediately.

[305] Before staff left the hospital, an appropriate incident report form was to be completed. Factual information was to be used and, in the words of the policy directive, "i.e., only what was actually seen or heard to describe the incidents and any immediate action taken. Sign and forward immediately to appropriate team manager/supervisor."

[306] The policy directive then goes on to list the responsibilities of the program team manager who in this instance was Rhonda Findlater. The Program Team Manager or her designate was supposed to immediately notify the program director or department head during the day or the hospital supervisor (because it was an evening) and attending physician immediately and, among other things, to review the incident report for completeness and accuracy and then sign the report. Then the report is to be forwarded to the program director or department head within 24 hours. For any incident perceived to have potential for legal action, the policy directs that the supervisor of Health Records be notified.

[307] It is clear that no one filed an incident report on the night June Morris died.

[308] Kaaren Neufeld, Chief Nursing Officer, stated that under the policy in 2002, given these facts, the staff would not have prepared an incident report. The categories do not fit with the form. That is why they eventually called it "unexplained hyper-kalemia".

[309] Charge Nurse Friesen said she struggled with writing the correct kind of incident report. She could not say it was a "medical error", so she did not write a report. She did not know for sure there was a medical error. In other words, she asserted that because the "facts" could not be verified, the incident report could not be documented.

[310] Nor was the Clinical Risk Department in the loop. By January 11th, 2002, the CME was involved, so Ms Neufeld assumed key people were "on the ball". "Because we did not have the facts," she testified, "we could not disclose to the family."

[311] Consequently, no report was compiled by either the nursing staff or the physicians on duty.

[312] Dr. Michel Tetreault, Chief Medical Officer (CMO) at SBGH, agreed that the chain of communication within the administration of the SBGH and to the CME was slow.

> Today we would expect an incident like this to be reported within, you know, the next 24 hours, and they routinely get reported to Yvonne Morier, our risks manager… and the Chief Medical Officer gets copied on all of those reports, so today the situation would have been very different in terms of the Chief Medical Officer being made aware that there was an incident.

[313] Dr. Bell, however, wanted a paper trail to express his concerns about a possible criminal act. In other words, he thought someone might have put potassium in June Morris' buretrol and changed the pump settings to cause her death.

I therefore recommend:

55. That the WRHA conduct educational seminars for all hospital staff to review the policy of prompt critical clinical incident reporting.

56. That a critical clinical incident occurring in a hospital at any time of the day or night be reported immediately to supervisory medical personnel.

[314] At the time of June Morris' death in January of 2002, the clinical risk manager at SBGH simply received and tabulated incident reports. She was not part of the investigation. The Project Team Manager, Rhonda Findlater, was the lead investigator until the CME was involved.

[315] In summary, the incident seemed not to have been reported as per policy because the facts had not been verified. The prompt reporting of an incident to both the WPS and the CME was delayed due to the unexplained and unexpected blood results.

I therefore recommend:

57. That the Clinical Risk Department of a hospital be immediately notified of any unexplained incident or occurrence.

58. That in the identification of a critical incident at a hospital there must be an easy-to-use reporting system supported by appropriate policy and practice.

59. The creation at all hospitals of a critical incident database to help collate, analyze trends or causes and thereby improve patient safety.

[316] Yvonne Morier, the Critical Risk Manager at SBGH, explained to the Court the current implementation of the hospital's critical clinical occurrence report and Management Policy dated November, 2004.

[317] The definition of a "critical clinical occurrence" (CCO) is:

> An event that resulted in an unintended, undesired patient outcome, including disability, death, admission to hospital, or prolonged hospital stay and which was not a result of the patient's health status.

[318] The person who becomes aware of a CCO must immediately report the critical clinical occurrence to that person's supervisor. The supervisor must then report the CCO to the program director of that department and to the Clinical Risk Manager, who then notifies key people within the organization by e-mail, giving them a summary of the occurrence, as well as copying the appropriate vice-president at the region and the appropriate director of quality improvement at the region, to ensure that the people who need to know are notified about the critical clinical occurrence.

[319] Specifically, the Clinical Risk Manager would notify the Chief Medical Officer, the Chief Nursing Officer, the appropriate Executive Directors, Program Directors and Clinical Director, depending where the incident occurred. This process usually is completed within the same day, unless it occurs on a weekend, in which case it would be completed on a Monday. Ms Morier stated:

> From our experience in doing this we do have a sense now of the ones that are less serious that can be -- that we know are going to require either an individual review or a site review, and the ones that are more serious may require a regional review or, or external review.

[320] In determining what the level of review ought to be, Yvonne Morier stated that two of the main factors are the degree of injury to the patient, as well as the opportunity for learning from that particular occurrence.

[321] The manager in the area where the incident occurred typically does the individual site reviews within the hospital. It is the responsibility of the Clinical Risk Manager to ensure that the report is completed by the individual or the team. An individual review must be completed within 30 days. Team reviews typically take longer. It could be two or three months depending on the issues and the complexity of the review.

[322] Once a review is completed, the Clinical Risk Manager receives a copy of that report and then provides a distinct “Status Report” to the region, which summarizes the critical clinical occurrence, reviews the findings as well as listing the recommendations. The status report is provided both to the WRHA and the affected personnel in the hospital.

[323] If there is a Regional Review, the regional team completes a report and provides a copy of the report to the hospital, to the Clinical Risk Manager and to the appropriate Executive Director of Clinical Programs. The Executive Director ensures the affected personnel are notified, again to put the recommendations into action.

[324] If there is a CCO involving a medication error, the Medication System Safety Committee at the hospital has a working group. They meet every month or two months to review all the occurrence investigations and the status reports, to examine systemic issues for the entire hospital and to make recommendations or follow-up as required and, if necessary, implement changes within the hospital.

[325] For more complex issues that require further input or consideration, the Clinical Programs Council (all the Executive Directors and Program Directors from all the clinical programs) will become involved. They are the ultimate decision-making body for the clinical programs.

[326] A **"**near miss**"** is an event that could have resulted in an unintended, undesired patient outcome including disability, death, admission to hospital or prolonged hospital stay and which was not a result of the patient's health status. A near miss is also considered a critical clinical occurrence.

[327] Rhonda Findlater, Project Team Manager at SICU, echoes that the new reporting process promotes a culture of safety, not blame. "If in doubt, report." is the new maxim. She is now required to do an investigation and provide a written report to her manager and the clinical risk manager. The reports are centrally compiled and then distributed and communicated regionally.

[328] There is room on the new incident reporting form for a detailed written explanation. It is clear that no one contributed a narrative at the time of June Morris' death.

[329] Kaaren Neufeld added parenthetically an observation of what she classified as a hierarchical, patriarchal structure. She felt staff may have been reluctant to admit an error because of the perception that the administration would not be supportive. She did point out that the SBGH administration has been supportive of its staff, so she has ultimately concluded that the SBGH in fact did not have a blame culture at the time.

[330] Donald Mestdagh confirmed that SBGH has created a "Medication System Safety Subcommittee", a multi-disciplinary committee set up to conduct regular reviews of critical occurrence reports related to medications. Yvonne Morier chairs the committee and he too sits on it. Kevin Hall of the WRHA confirmed that there exists a mechanism for safety review, but not for safety investigations. There is no Critical Incident Review Committee in Manitoba.

[331] I conclude that the Critical Clinical Occurrence (CCO) reporting policies of the WRHA ought to be reviewed. I heard conflicting evidence as to whether to **limit** the definition of a CCO. As far as these kinds of incidents, I conclude that the broader the definition, the wider the net cast and the greater the opportunity for learning and safety.

I therefore recommend:

60. That the WRHA continue to review its policy pertaining to the reporting of a Critical Clinical Occurrence.

CRITICAL INCIDENT REVIEW COMMITTEE

[332] Dr. Davies outlined that in the Calgary Health Region there exists a "Critical Incident Review Committee" which acts as a safety investigator for the Calgary Health Region. The Committee has been established for almost 20 years, being commenced at the Foothills Medical Centre in Calgary. This type of committee is not common across Canada.

[333] The Committee uses between one to three members for each investigation and usually tries to match an experienced Committee member with a newer Committee member. There are no defined rules of investigation and adaptation is made to each specific situation. The Committee attempts to have representation from all departments of the hospital including the following:

1. Anesthesiology.
2. Neurology.
3. Surgery.
4. Nursing.
5. Quality improvement health information member.
6. Pediatrics.
7. Diagnostics.
8. Paramedic.
9. Psychiatry.
10. Respiratory therapy.

[334] Dr. Davies stressed that the Office of the Chief Medical Examiner and the Police Department each has a different focus than a Safety Committee. There very well may be parallel, multiple investigations (departmental, regulatory, safety,

police, CME). In other words, the Critical Incident Review Committee does not exclude other investigations from taking place.

[335] She outlined five levels of investigation in the medical field:

1. Level One is the investigation on a personal level.

2. Level Two is the investigation on a procedural level or at the team level.

3. Level Three is the investigation at the departmental level (for example, the surgical intensive care unit).

4. Level Four is the investigation by the health region and authority.

5. Level Five is the investigation of the region or facility by an outside team.

[336] The Critical Incident Review Committee operates at the Level Four, region-wide level of investigation.

[337] Dr. Davies stated that individuals who carry out administrative responsibilities in the medical context ought not to belong to the Committee, because the people being investigated may not wish to tell the whole truth for fear of employment ramifications. She also believes the police have no role in the Critical Incident Review Committee. Their investigations are for entirely different purposes. They are not safety investigations.

[338] Yvonne Morier, Clinical Risk Manager at the SBGH, agreed that it is a good idea to set up a Critical Incident Review team, but cautioned that resources need to be allocated to make sure it can occur.

[339] Dr. Robson describes the process that is used by the WRHA to conduct safety investigations.

[340] A CCO will be reported up through the chain of command to a senior representative in the facility and then that information is shared with their counterpart in the WRHA. And that will lead to a discussion about what level of patient safety investigation needs to be done. Dr. Robson confirmed that there is no Critical Incident Review Committee in the Regional Health Authorities:

> At the present time we have not established that kind of committee. I think that that is a good idea and we are in the process of doing a revision of our policy, it's been in place for a bit over two years, so that that may be one of the things that's considered by — after consultation with a range of, of individuals.

I therefore recommend:

61. That the SBGH and the WRHA consider setting up a healthcare safety investigation team to review adverse events and outcomes of a designated level of severity.

62. That the SBGH and the WRHA consider providing appropriate training to the individuals who will carry out healthcare safety investigations.

63. That the SBGH and the WRHA limit the individuals involved as healthcare safety investigators to those who do not carry any administrative responsibilities.

64. That the WRHA and the SBGH implement a policy setting out under what circumstances the police ought to be notified about an adverse outcome or event for the purpose of commencing a criminal investigation.

THEORIES ABOUT JUNE MORRIS' DEATH

[341] It is abundantly clear that there was a huge, fatal, unprescribed and unexplained amount of potassium acetate in the buretrol connected to and pumping into the body of June Morris. There was also chloride in the same buretrol, the presence of which was also unexplained.

[342] Dr. John Krahn has worked at SBGH since 1982. He is also the Director of the Chemistry lab at the Health Sciences Centre. He is the WRHA Clinical Chemistry Director and he is in charge of the Biochemistry lab at the SBGH. As previously noted, he was declared an expert in biochemistry.

[343] Dr. Krahn shared his theory about the chloride present in June Morris' buretrol at the time of her death. Dr. Krahn originally thought that the high readings of chloride were an anomaly or the results of a wrong test. A chemist at an independent laboratory in Winnipeg retested part of the contents of June Morris' buretrol.

[344] Even using a different method, the results were exactly the same as the first set of tests. Dr. Krahn told the Court that the higher chloride reading is not due to

the testing method or due to analytical error. His theory as to the origin of the elevated chloride level is that potassium chloride from the SICU could be the source of the chloride. From a biochemical perspective, he concluded that the only positive ion that the negative chloride ions could bind to in the buretrol was **potassium**. Therefore, Dr. Krahn concluded that there was also potassium chloride in June Morris' buretrol solution.

[345] Obviously, potassium chloride was not prescribed.

[346] His conclusion was that an unprescribed dose of both potassium acetate and potassium chloride was administered to June Morris through her buretrol. On the basis of the various concentrations of chemicals in the buretrol at the time of death, Dr. Krahn concluded that the potassium dose would have to have been delivered by someone after the magnesium sulfate had been delivered to the buretrol. He concluded this because he could not conceive of so many medical errors happening on one patient. This he called an isolated, intentional act.

[347] This fact clarifies the Court's conclusion that someone on the SICU administered unprescribed potassium chloride to June Morris. It could, however, have been anybody, because the potassium chloride was available as ward stock.

[348] Police are of the opinion that the administering of potassium was intentional. They were frustrated by their own lack of inside knowledge about the hospital environment. For the investigating team of officers, it was a huge learning curve. Section 7 of *The Fatality Inquiries Act* of Manitoba mandates that the Chief Medical Examiner notify the police immediately when death occurs in an unexpected or unexplained manner. In other words, on such a death as this. Kaaren Neufeld, Chief Nursing Officer, testified that the police were notified on January 14th, 2002 and asked to be updated. Detective Sergeant Burchill of the WPS expressed concern that the police were not immediately notified.

[349] The pathologist who conducted the autopsy, Dr. MacDonald, said strangely enough, June Morris' renal function had improved over the course of her stay at the hospital and he did not find any dead tissue in the gut which would have liberated potassium. In other words, there was no natural source for a sudden spike in her potassium level.

[350] He considered this death a homicide. To the pathologist, however, that does not equal murder. It means death by a deliberate act of a person. He bases his conclusion of homicide as the manner of death on several observations:

1. There was a measurable amount of antihistamine which was never prescribed.

2. There was no prescription for potassium chloride which was found in the buretrol, as well as the excess potassium acetate.

3. The garbage was searched and no one could find the vial of potassium; either a vial of potassium chloride or a vial of potassium acetate. No receptacle contained it. (In fact the garbage was NOT searched.) The staff should have been able to locate the vials.

4. The huge difference in the prescribed potassium versus the actual level of potassium which cannot be explained by a small measuring error. No one would ever administer that amount.

5. The interviews which served to drive home that nobody said it was an accident. No one admitted an error.

[351] His conclusion is that a prudent doctor would not order that level of potassium and a prudent health care provider would not administer that level of potassium.

[352] The CME, Dr. Balachandra, testified that from day one, he was of the strong belief that there was some kind of medication error. He confirmed that there should have been six to seven millimoles of potassium in the buretrol and it was actually 25 millimoles. Therefore, someone had put more solutions into the buretrol and had increased the pump to double speed.

[353] The bases for Dr. Balachandra's conclusion that June Morris' death was a "homicide" were stated by him as follows:

1. The "critical value" of potassium. Only a small amount of potassium acetate was prescribed and the prescription was an appropriate amount. The level of potassium in the buretrol at death could not have jumped that high with that dosage. It was ten times the amount that it should have been.

2. There was more solution in the buretrol than there should have been.

3. The infusion pump was running at twice the speed it should have been.

4. The vial containing the potassium acetate was never found.

5. No one at SBGH SICU admitted making a medical error, so the CME concluded that this was not a mistake. He ruled out medical error.

6. There was a trace amount of diphenhydramine, which is an antihistamine. This would not be significant if it was the only factor.

[354] In conclusion, the CME tried his best to prove it was an error but he could not. He told the Court that if he had classified this as "an undetermined death", he felt that would have been an error and an injustice.

[355] The CME attended SBGH after receiving a letter from Dr. Bell, the Director at SICU, who was concerned that the CME investigate the matter, since Dr. Bell suspected foul play.

[356] It is clear that potassium chloride was added to June Morris' buretrol by someone on the SBGH SICU.

[357] Dr. Davies defines "homicide" as an act "at the hand of man" without assigning intent. The CME defined it as an intentional act. Dr. Davies believed that it would be valuable for *The Fatality Inquiries Act* to include definitions of the terms that relate to manner of death, such as homicide, suicide, and accident. I agree.

I therefore recommend:

65. That the Province of Manitoba review the merit of including definitions of causes of death in <u>The Fatality Inquiries Act</u>.

POLICE INVESTIGATIONS OF UNEXPLAINED DEATHS IN HOSPITALS

[358] Detective Sergeant John Burchill of the Winnipeg Police Service (WPS) believes timing is crucial in a critical incident investigation. The sooner police

interviews are completed with staff on duty at the time of the incident, the better. He was also of the firm opinion that both the hospital and the CME's office ought to record their interviews.

[359] Officer Burchill concurred that a specialized Critical Incident Investigative team is crucial.

[360] The Court asked Dr. Tetreault if he thought that it would be a good idea for all hospitals to have a policy, in terms of when the police ought to be contacted. He agreed it would. Dr. Tetreault heralded a wide definition of what constitutes a "critical incident" that ought to be reported in a culture of safety. I agree.

I therefore recommend:

66. That the WRHA develop informational material for staff on the topic of Critical Incident Reporting.

67. That all hospitals implement protocol for initial response to unexplained or unexpected deaths or near-deaths, to include immediate notification to the CME and preservation of the scene.

68. That a pre-designated individual be assigned to secure, preserve and record details of such an incident scene prior to the arrival of the investigative team or individual or the CME representative.

SAFETY CULTURE

[361] Dr. Davies examined organizational culture and described three types of organizations:

1. **Pathological.** In a pathological organization, information is hidden, responsibility is shirked and sharing information is actively discouraged and failure is covered up.

2. **Bureaucratic.** In a bureaucratic organization, information is ignored and responsibility is compartmentalized and new ideas create problems.

3. **Generative.** In a generative organization, information is actively sought, messengers are trained, responsibility is shared, bridging is rewarded, failure leads to enquiry and new ideas are welcomed.

> Safety is the first item on the generative organizational agenda. Dr. Davies referred to generative organizations as high-reliability organizations.

[362] Dr. Davies enumerated the characteristics of a safety culture in a generative organization or a high-reliability organization:

1. Enquiring of what problems might exist.
2. Being imaginative about how problems might occur.
3. Being thoughtful about what results of the problem might be.
4. Reporting of close calls and adverse outcomes.
5. A justness with respect to responding to the behaviour of employees.
6. Learning what the organization does with safety information.
7. Flexibility in the adaptation of lessons learned.

The last four factors, being **reporting, justness, learning** and **flexibility**, are the basic tenets of a safety culture.

[363] Indeed, the Court heard testimony from Dr. Robson, Director of Safety for the WRHA, who endorsed such a culture.

[364] In order of efficacy, Dr. Davies evaluated the following safety remedies:

1. Information.
2. Education.
3. Rules and policies.
4. Reminders/checklists/double-check systems.
5. Simplification/standardization.
6. Automation and computerization.
7. “Forcing functions” and constraints.

[365] A good example of a forcing function is the removal of potassium chloride from a ward. A forcing function is a way of changing behaviour so that an error can be avoided. She explicated:

> And, a forcing function is a way of changing our behaviour, so we can't do the wrong thing. And so, for example, removing potassium from the shelf, is a forcing function. By providing only a mini bag concentrate, so that no one has to make the calculation and inject the correct amount into the buretrol, that's a constraint on the system.
>
> Automation and computerization are also helpful, but that means that you might still, even though you had the order computerized, an individual might still be able to go and make a miscalculation when actually preparing the dilution. So, most of all, we try and have forcing functions and constraints built into our system.

[366] Kevin Hall is the Director of Pharmacy Services for the WRHA, and is involved in planning, coordination, and management for all nine hospitals in the WRHA. On the issue of safety and concentrated potassium, Mr. Hall told the Court that in 2000, the US Institute of Medicine had a study in the U.S., "To Err Is Human". It found among other things that forty-four thousand people died annually from medical errors; 7,000 of those from medication errors.

[367] ISMP has advocated many things, but Mr. Hall feels there has been relatively slow "pick-up" from the hospitals. He theorizes during the 1960s through the 1980s, there was denial and/or a lack of understanding. Medical administrators thought that they could solve the problem with good people and good policies. They tended to look upon medical errors as personal failures rather than system safety issues.

[368] It has been seen that there is a widespread change in the culture after this 2000 report.

[369] SBGH Chief Medical Officer, Dr. Michel Tetreault, highlighted the importance of a safety culture concurrent with a general change in attitude and culture in the health sector in North America over the course of the past few years:

> June Morris' death certainly made the whole issue of safety a top priority for us and since then we have put in place safety mechanisms. One of them is reporting of critical clinical occurrences and as they become reported each one of them increases our awareness and our alertness.

> On the issue specifically of medication safety, we felt that this was such a high priority that we mandated our Medication Safety Subcommittee to do a rapid inventory of risk situations, and to, to give a signal of how important this was for the hospital executive team. I actually attended most of the early meetings with that group.
>
> Another example is we have hired at St. Boniface General Hospital a special assistant to the Chief Medical Officer for patient safety and quality.
>
> A third example is we have been actively visiting different sites in the hospital that have been pointed out to us as possible risk areas, and once again that is (A) for our information, but (B) to convey the message of how important this is for us.
>
> I think we are a safer hospital than we were. We are becoming safer day by day….
>
> Another example I can think of is doing Failure Modes and Effects Analysis.

[370] Dr. Tetreault explained in detail the successful completion of an FMEA on the Neonatal ICU at SBGH and outlined other planned areas for FMEAs in the hospital.

[371] Dr. Davies recommended that the attending staff of the Surgical Intensive Care Unit consider submitting a report to the medical profession, describing this case, stating: "…that's part of a safety culture, is learning from it, and the learning applies not just to the individuals involved, but to others in healthcare and we can all learn from each other's case problems."

[372] Dr. Robson is the current Director of Safety at the WRHA. In November of 2003, Dr. Robson provided the WRHA with advice about patient safety initiatives and programs which were in place and were under consideration, specifically looking at the system which had been put in place in June of 2002, to review critical clinical occurrences (CCOs).

[373] He was seconded to the Calgary Health Region in 2004 to assist with the investigation of two patient deaths in intensive care units. The Calgary Health Region had decided to request an external patient safety review team to not only look at that occurrence, just to be certain that the work done by their own Critical Incident Review team had been appropriate, but also to examine several broader issues, including the culture of patient safety in the region, the organization of

pharmacy services, the way in which incidents are investigated, the present or absence of support services for staff, and patients, and families, when serious events like this occur.

[374] Dr. Robson's overall responsibility is to help the WRHA and the facilities that are part of the authority to develop an integrated patient safety strategy: to investigate and learn from critical clinical occurrences and adverse outcomes and to establish a strong and vibrant culture of patient safety in the organization of the WRHA.

[375] He outlined to the Court proactive measures that are being taken within the WRHA.

[376] The first example is the "good catch campaign". It is an effort to identify those situations "where something that falls outside the limits of safe care almost happened but didn't happen" and to try to highlight the efforts that staff have made in order to prevent problems from occurring. Staff participating in a "good catch" receive positive feedback and recognition from the administration. Another example is the "safety walkaround". Senior administrators make regular visits to units and teams within the medical facility and speak directly to the front line workers about potential problems or safety hazards that the workers have perceived and try to respond to the issues that they have raised. A third example is the "safety huddle". This usually occurs at the time of a shift change. Staff in a particular unit of a hospital will stop for two or three minutes and will examine any safety concerns arising that day.

[377] Dr. Robson conceded, however, that health care workers in the WRHA are still afraid to say what **actually** happened after an adverse outcome. This is because the culture has traditionally been a blaming culture, which he describes and contrasts with a just culture:

> I think this gets back to one of the points that Dr. Davies made very well, that it's most unusual to find a single event as the cause of, of a, of a problem or of an adverse outcome, from a patient's point of view.
>
> Traditionally, though, we tend to focus on the person or persons at the very tail end of the care giving process who may have been involved. This is called the sharp end of care, so the physician doing the operation, the nurse giving the injection, the respiratory technician, who is administering the inhalation solution, for instance. But if we look carefully we find that, in my experience, in virtually all cases, there will be a series of factors, and Dr. Davies alluded to this,

> which contributed, in fact which essentially set up that final event, and if those conditions had been changed there was much less chance that the final event would happen.
>
> So basically we need to have an approach that is fair and we need to be transparent so we need to say to our staff but more importantly, we need to say to patients, and to the public at large, when something goes wrong our first reflex is to see this as an opportunity to learn so we can make changes, to reduce the likelihood of it happening in the future. Our first reflex is not to discipline somebody and we need to say to our staff, if you're involved in a situation with a bad outcome, an adverse event or a patient death or disability, unless we see that you have been either dependent on some kind of drug, or that you have been deliberately violating policies, or that there is some kind of criminal activity, unless those things hold, there will be no disciplinary action.

[378] He added:

> The reading I have done on this suggests that culture change is a generational issue so we're probably looking at 20 to 30 years before we'll see a sea shift but we're at the beginning of that which is an exciting time and I think if we do work collaboratively, bringing in as many people as possible with an interest, we can, in fact, make that change.

[379] I conclude that the development of a safety culture in hospitals is an ongoing process which must be nurtured, encouraged and promoted by staff, management and administration.

I therefore recommend:

69. That the WRHA and SBGH continue in their efforts to establish a safety culture where patient safety is considered a core value and guiding principle throughout their organizations.

70. That the WRHA and SBGH continue their efforts to establish a reporting culture within their organizations. To this end, they ought to review their policies with respect to reporting critical clinical occurrences to clarify to staff that with limited exceptions, reporting will not lead to disciplinary responses nor impact negatively on performance appraisal, but will be used as a learning opportunity for the organization.

EVIDENCE ACT **PROTECTIONS FOR REPORTING AND INVESTIGATING CRITICAL CLINICAL OCCURRENCES**

[380] Dr. Davies outlined to the Court the effect of a provision of *The Alberta Evidence Act*. A specific provision of *The Alberta Evidence Act* is designed to protect a critical incident review committee or similar body carrying out quality assurance investigations. The Act specifically codifies the privilege that attaches to quality assurance activities, including conversations with medical staff and confidentiality of documents pertaining to the investigation.

[381] "Quality assurance activities" are defined in the Act. The Critical Incident Review Committee in Alberta can carry out their investigations without the concern of documents being seized or having to attend court and testify about their activities. Again, conversations with medical personnel are privileged.

[382] The net effect of this provision encourages the free flowing of information, allaying the fear that what is said to the critical incident investigators could be used in court. In the Provinces of Ontario and British Columbia, legislative provisions similar to Alberta's exist to allow these types of confidential investigations.

[383] Dr. Davies highlighted the existence of fear in the community of health care workers about, in her words, "telling the truth". The Court sees the benefit to this type of provision.

I therefore recommend:

71. That the Government of Manitoba review the feasibility of the inclusion in The Manitoba Evidence Act of a provision to allow the creation of a Critical Incident Review Committee or a similar entity with powers to interview, on a confidential basis, medical personnel, for safety investigations.

PUBLICITY

[384] It is important that the public be made aware of both the circumstances of this death and the recommendations that flow from this Inquest. Dr. Davies urged, and I concur, that the medical community be made aware of my recommendations, many of which stem directly from Dr. Davies. Again, I thank her for her extremely valuable help.

I therefore recommend:

72. That the recommendations from this Inquest be distributed as widely as possible, at minimum:

a. through the Office of the Chief Medical Examiner to the other Chief Medical Examiners and Chief Coroners of Canada;

b. through the Council of Chief Executive Officers (or equivalent) of hospitals for the Province of Manitoba and for Canada;

c. through the Institute for Safe Medication Practices Canada (www.ismp-Canada.org);

d. through the Canadian Patient Safety Institute (www.cpsi-icsp.ca).

73. That the Attending staff of the SICU at SBGH consider submitting a report to the medical profession describing this case.

74. That the Pharmacy department of the SBGH or the WRHA complete and submit a case report to ISMP Canada.

DONALD MESTDAGH'S FORESIGHT

[385] In a memo dated January the 3rd, 2002, and the very same day that June Morris was admitted to the hospital, Donald Mestdagh, Director of Pharmacy at SBGH, gave a grave but prescient caution to his staff and said the following:

> Potassium chloride that is infused too rapidly or given by direct IV route can cause cardiac arrest. There are numerous reports of accidental deaths that have occurred in hospitals across North America as a result of medication errors involving concentrated KCL. The single most effective way to prevent errors of this nature is to remove KCL concentrate from all nursing units.

[386] He clarified in his testimony to the Court why the availability of KCL was the real danger, not necessarily one potassium acetate prescription:

> The difference between potassium chloride and potassium acetate is simply the availability. Potassium chloride was available on every nursing unit, on a shelf, where any, any staff member, or any person could grab, access it at any time without supervision and without orders, without -- potassium acetate was still maintained and stored in the pharmacy, and potassium phosphate was also maintained and stored in the Pyxsis med stations, so to access potassium phosphate

> or potassium acetate took an order from a physician for potassium acetate, which would have to be reviewed by a pharmacist, or for potassium phosphate the same thing, and then the pharmacy would provide the potassium acetate or the potassium phosphate would then become available through the Pyxsis med station, so it's an availability issue and that's the difference between potassium acetate, potassium phosphate and potassium chloride.

[387] The Court heard evidence that there was in fact an infusion of potassium chloride found in both the bloodstream of June Morris and in her buretrol. The timing of his cautionary memorandum is particularly stark and chilling.

CONCLUSION

[388] The circumstances of how June Morris received a deadly dose of potassium remain a mystery. If in fact someone intentionally administered an overdose of potassium to the bloodstream of June Morris, that person has committed a crime. Expert witness Dr. Davies mused that it is, unfortunately, not possible to prevent anyone intent on causing harm from doing so.

[389] Yet we as a community know and must rest assured that ordinarily our hospitals are, and the people working in them make them, places of healing, not harm.

[390] Dr. Davies stressed, and I agree, that it is impossible to create a completely safe environment, but attempts can and must be made to reduce the frequency of incidents and reduce of harm. Dr. Davies acknowledged the importance of a reactive investigation in the health care context, such as this Inquest. However, she heralded the proactive investigation in the healthcare context:

> But, I think, equally important and, and sometimes even more so, is to take a proactive view of the system and to look ahead and to do a survey of the system for the structural flaws, for the hazards that exist within the system, to then think ahead to what abhorrent processes might be carried out and to then attempt to calculate what adverse outcomes there are.
>
> And, I think, this way, we can try to reduce the frequency of the adverse outcomes and reduce their severity. We're very good at the reactive in healthcare, we're starting to get better, we're actually starting now, to use proactive system interrogation. And, I actually use the word "interrogation" on purpose, because I believe that we should be taking the bright light and shining it in all the dark corners of our health system and looking for the hazards that lurk there, to see what we can do to remove them as much as possible.

[391] Ettie June Morris was a very sick woman when she was found at the foot of the stairs of her home. Her death was perhaps near, but it was certainly accelerated by the infusion of potassium she received at the hands of someone on the Surgical Intensive Care Unit on the evening of January 4th, 2002. She was a strong woman who had lived a long, productive and independent life.

[392] Her last act of generosity is found in her Last Will and Testament. She bequeathed a share of the residue of her estate to the St. Boniface General Hospital Research Foundation.

AFTERWORD

[393] After the conclusion of this Inquest, legislation was enacted by the Government of Manitoba. It was assented to on June 16th, 2005. I have included a copy of *The Regional Health Authorities Amendment and Manitoba Evidence Amendment Act* as an Appendix to my report.

DATED at the City of Winnipeg, in the Province of Manitoba, this 7th day of September, 2005.

Original signed by Judge T.J. Preston

Timothy J. Preston, P.J.

LIST OF RECOMMENDATIONS

1. That a review of staffing ratios for Critical Care Nurses on ICUs in the region be undertaken by the Winnipeg Regional Health Authority (WRHA).

2. That the St. Boniface General Hospital (SBGH) and the WRHA review the policies with respect to nurses' work shifts.

3. That the SBGH and the WRHA consider adopting a Fatigue Management System, such as the one developed by Professor Drew Dawson, University of Adelaide, Australia (http://www.humantra.com/index.php).

4. That the staff of the Pharmacy and the staff of the SBGH and the WRHA continue to review the purchase from pharmaceutical companies of standard medications and infusions, versus having a central intravenous admixture (CIVA) programme, versus having nurses prepare medications and infusions.

5. That the staff of the Pharmacy and the staff of the SBGH and the WRHA review the current situations where nurses are required to prepare medications and infusions, especially high-hazard medications and infusions, rather than have them administer unit doses prepared elsewhere.

6. That should preparation of medications and infusions be required, then consideration should be given to conducting a Failure Modes Effect Analysis to review possible hazards and harm related to preparation, for example, in taking nurses away from the bedside and also in the potential for interruptions when the preparation of medications and infusions is being carried out.

7. That the SBGH and the WRHA review their recently-implemented process of hand-over between incoming and outgoing nurses whereby the incoming nurse visually inspects and verifies the infusion pump settings and the lines to and from the patient. This verification is accomplished while the outgoing nurse is still present, so as to ensure continuity of care, as well as to provide an opportunity for the incoming nurse to discuss any problems with the outgoing nurse should a discrepancy be noted. Both nurses at the time of the "report to nurse" should sign on and off after the report, confirming the inspection and verification of IV lines and rates of infusion of medications.

8. That the SBGH and the WRHA consider a review of current charting practices and policy and consider adopting the recommendations for charting according to the medications safety principles from ISMP Canada.

9. That the SBGH and the WRHA continue to review the feasibility of the implementation of electronic charting.

10. That at the time of administering medication to a patient, the following information must be noted on the intravenous line label: 1) the medication; 2) the time; 3) the dose; 4) the signature of the person administering the medication; and 5) the date.

11. That at the time of initiation of a medication or IV bag change, the change ought to be checked and verified by two nurses.

12. That no nurse ever administer medications prepared by another nurse.

13. That no nurse sign that they have administered for medications not in fact administered by them.

14. That the SBGH and the WRHA review their policies regarding the administration, labeling and charting of medications.

15. That the SBGH and the WRHA review the “24 Hour Fluid Balance Record Intensive Care Unit Flow Sheet” used to chart the infusion of intravenous fluids and consider revising the form according to Human Factors principles, such as layout, spacing, fonts, shading and flow of information.

16. That the SBGH and the WRHA review the “24 Hour Fluid Balance Record Intensive Care Unit Flow Sheet” used to chart the infusion of intravenous fluids and consider revising the form to ensure the ability of nurses to chart the hospital/serial numbers of any infusion pumps (or similar equipment) used to assist with the infusion of fluids and medications.

17. That the SBGH and the WRHA review the Intensive Care Unit Flow Sheet to determine if this sheet functions as a systematic checklist for hand-over or requires revision.

18. That the pump serial number be recorded on the patient’s medical chart to allow retrieval of a patient’s medication infusion history.

19. That the actual time of observation of a reading be recorded on a patient’s medical chart.

20. That medications delivered to the SBGH SICU be deposited either at the bedside of the patient after alerting the bedside nurse, or to a designated area at the nurses' front desk.

21. That the SBGH conduct a review to examine the feasibility of the SICU having its own exclusive pneumatic tube for delivery of medications.

22. That the SBGH and the WRHA consider establishing a satellite Pharmacy for the Critical Care Units at SBGH, similar to the one at the Health Sciences Centre, so as to provide "just in time" medications and so as to decrease any potential errors and delays in the delivery of medications and other dispensed items.

23. That the Pharmacies in the SBGH and the WRHA review the staffing patterns for their Pharmacies.

24. That the Pharmacy staff and the SICU staff at the SBGH and the WRHA continue to expand a shared model of care, such that there could be greater interaction among pharmacists, doctors and nurses in the SICU.

25. That the Pharmacy staff and the SICU staff at the SBGH and the WRHA consider that this expanded shared model of care be applied also in all the other Intensive Care Units.

26. That the Pharmacy of the SBGH and the WRHA review the use of multi-dose versus single dose medications.

27. That the Pharmacy of the SBGH and the WRHA review the policies and procedures for the dispensing of stock labeled "For Pharmacy Use Only".

28. That the Pharmacy of the SBGH and the WRHA complete and submit a "case report" to the Institute for Safe Medication Practices Canada (www.ismp-Canada.org).

29. That the Pharmacy of the SBGH and the WRHA review the policies and procedures for including instructions as to preparation (including dilution) and administration with any medication dispensed.

30. That the Departments governing physicians, the Pharmacy of the SBGH and the WRHA provide information to interns, residents and attending physicians as to the standard times when regularly scheduled medications are administered (unless otherwise ordered).

31. That the Departments governing physicians, the Pharmacy of the SBGH and the WRHA provide information to interns and residents working in the Intensive Care Units about how to order certain ICU-specific medications, especially if the medication is not commonly ordered.

32. That the WRHA and the SBGH review the use of the terms “millimoles” and “milliequivalents” in the ordering, labeling and description of medications and, in particular, consider whether it is appropriate to reference both terms in the ordering, labeling and description of medications.

33. That the WRHA and the SBGH continue to review and adopt a more standard format for orders for electrolytes, medications and fluids.

34. That the standard format for orders for electrolytes, medications and fluids used in the SBGH be aligned with those used in the WRHA.

35. That recommendations from the Institute of Safe Medication Practices (www.ismp-Canada.org) be considered with respect to the format of orders for electrolytes, medications and fluids.

36. That all medication administered to a patient be entered on the patient’s chart.

37. That no glass medication vials ever be deposited in the garbage at a hospital ward or unit.

38. That the SBGH and the WRHA consider reviewing the size and design of the small Sharps container kept at the bedside.

39. That the SBGH and the WRHA consider reviewing the size and design of the large Sharps container in Medication Rooms and in Dirty Utility Rooms.

40. That all unused medications in vials or glass be discarded in a safe Sharps container.

41. That high-hazard drugs in concentrated form be packaged in such a fashion so as to distinguish them from other vials and ampoules of medication.

42. That there ought to be a clearly visible warning on such medications such as “DILUTE BEFORE USE” or “FATAL IF INJECTED UNDILUTED”.

43. That the SBGH and the WRHA periodically review the guidelines currently in place with respect to the handling of concentrated potassium to ensure they are consistent with the ISMP Canada recommendations.

40. That the WRHA and the SBGH continue to carry out audits of all nursing units and pharmacy departments to ensure that there is compliance with the concentrated potassium guidelines.

45. That the WRHA and SBGH implement guidelines regarding the handling and administration of all drugs identified as high-hazard medications by ISMP Canada.

46. That the Pharmacy of the SBGH and the WRHA consider revisiting the decision to include potassium acetate in the Parenteral Drug Manual.

47. That the process for alerting staff to critical blood results be reviewed by the WRHA.

48. That the SBGH and the WRHA review their protocol(s) currently in place throughout the region for investigating unexpected deaths and other adverse outcomes.

49. That the protocol(s) ought to deal with the following:

a. how and when patients and personnel are to be safeguarded should there be an adverse event and/or outcome that affects or could affect them;

b. what equipment ought to be secured and how;

c. if equipment is secured, how and when that equipment should be tested before it is returned to service;

d. if equipment with memory is secured, how and when the memory should be downloaded, before the equipment is returned to service;

e. under what circumstances should syringes, vials and other items be saved and if saved, how and when they should be tested;

f. how and when to secure the environment in which the adverse event or outcome occurred, until the safety of other patients or personnel in the same environment can be secured.

50. That the nurse in charge, if present in the hospital, remain on or return to her ward or unit when a resuscitation code is called.

51. That all medical equipment used on a patient be included as part of the equipment seized in a death in a hospital unit due to accident, suicide, violence, homicide or unexpected or unexplained death.

52. That the SBGH and the WRHA review the systematic criteria for determining when an ICU review should be carried out and how quickly.

53. That if there is not some form of systematic criteria, then consideration be given to either adopting or developing one.

54. That a similar review be applied to the Operating Theatres and Recovery Rooms, the wards, and the Emergency Departments in the SBGH and the WRHA.

55. That the WRHA conduct educational seminars for all hospital staff to review the policy of prompt critical clinical incident reporting.

56. That a critical clinical incident occurring in a hospital at any time of day or night be reported immediately to supervisory medical personnel.

57. That the Clinical Risk Department of a hospital be immediately notified of any unexplained incident or occurrence.

58. That in the identification of a critical incident at a hospital there must be an easy-to-use reporting system supported by appropriate policy and practice.

59. The creation at all hospitals of a critical incident database to help collate, analyze trends or causes and thereby improve patient safety.

60. That the WRHA continue to review its policy pertaining to the reporting of a Critical Clinical Occurrence.

61. That the SBGH and the WRHA consider setting up a healthcare safety investigation team to review adverse events and outcomes of a designated level of severity.

62. That the SBGH and the WRHA consider providing appropriate training to the individuals who will carry out healthcare safety investigations.

63. That the SBGH and the WRHA limit the individuals involved as healthcare safety investigators to those who do not carry any administrative responsibilities.

64. That the WRHA and the SBGH implement a policy setting out under what circumstances the police ought to be notified about an adverse outcome or event for the purpose of commencing a criminal investigation.

65. That the Province of Manitoba review the merit of including definitions of causes of death in *The Fatality Inquiries Act*.

66. That the WRHA develop informational material for staff on the topic of Critical Incident Reporting.

67. That all hospitals implement protocol for initial response to unexplained or unexpected deaths or near-deaths, to include immediate notification to the CME and preservation of the scene.

68. That a pre-designated individual be assigned to secure, preserve and record details of such an incident scene prior to the arrival of the investigative team or individual or the CME representative.

69. That the WRHA and SBGH continue in their efforts to establish a safety culture where patient safety is considered a core value and guiding principle throughout their organizations.

70. That the WRHA and SBGH continue their efforts to establish a reporting culture within their organizations. To this end, they ought to review their policies with respect to reporting critical clinical occurrences to clarify to staff that with limited exceptions, reporting will not lead to disciplinary responses nor impact negatively on performance appraisal, but will be used as a learning opportunity for the organization.

71. That the Government of Manitoba review the feasibility of the inclusion in *The Manitoba Evidence Act* of a provision to allow the creation of a Critical Incident Review Committee or similar entity with powers to interview, on a confidential basis, medical personnel, for safety investigations.

72. That the recommendations from this Inquest be distributed as widely as possible, at minimum:

a. through the Office of the Chief Medical Examiner to the other Chief Medical Examiners and Chief Coroners of Canada;

b. through the Council of Chief Executive Officers (or equivalent) of hospitals for the Province of Manitoba and for Canada;

c. through the Institute for Safe Medication Practices Canada (www.ismp-Canada.org);

d. through the Canadian Patient Safety Institute (www.cpsi-icsp.ca).

73. That the Attending staff of the SICU at SBGH consider submitting a report to the medical profession describing this case.

74. That the Pharmacy department of the SBGH or the WRHA complete and submit a case report to ISMP Canada.

WITNESS LIST

1. Claude Comeau, Identification Officer, Winnipeg Police Service
2. Timothy Diack, Police Officer, Winnipeg Police Service
3. Terence Richard Drysdale, Paramedic, City of Winnipeg
4. Dr. Kelly MacDonald, Pathologist, Office of the Chief Medical Examiner
5. Dr. Thambirajah Balachandra, Chief Medical Examiner
6. Dr. Robert Ariano, Clinical Director of Pharmacy, St. Boniface General Hospital
7. Dr. Peter Krahn, Director of Biochemistry, St. Boniface General Hospital
8. Donald Glenn Mestdagh, Director of Pharmacy, St. Boniface General Hospital
9. Marta Tataryn, Critical Care Nurse, St. Boniface General Hospital
10. Danny Chin (a.k.a. Hak Keung Chin), Critical Care Nurse, St. Boniface General Hospital
11. Dolores Friesen, Charge Nurse, St. Boniface General Hospital
12. Rose Neufeld, Critical Care Nurse, St. Boniface General Hospital
13. Jason Edward Louis Courchaine, Critical Care Nurse, St. Boniface General Hospital
14. Shelley Munro, Critical Care Nurse, St. Boniface General Hospital
15. Carol Davis, Pharmacist, St. Boniface General Hospital
16. Sabrina Boreski, Ward Clerk, St. Boniface General Hospital
17. Beruk Asgedom, Unit Assistant, St. Boniface General Hospital
18. Jacqueline Kulczycki, Critical Care Nurse, St. Boniface General Hospital
19. Dr. Carla Chrusch, attending physician, St. Boniface General Hospital

20. Dr. Dean Bell, Director of Surgical Intensive Care Unit, St. Boniface General Hospital

21. Judith Nixon, Director of Education, College of Registered Nurses

22. Dr. Norbert Viallet, SICU Resident

23. Dr. Eytan Natan Weinberg, ICU Fellow, St. Boniface General Hospital

24. Dr. Herman Pak Yau Lam, MIC Resident, St. Boniface General Hospital

25. Michael Bachynsky, Respiratory Therapist, St. Boniface General Hospital

26. Rhonda Findlater, Program Team Manager, Surgery, St. Boniface General Hospital

27. Kaaren Ruth Neufeld, Chief Nursing Officer, St. Boniface General Hospital

28. Lesia “Lee” Chorney, Respiratory Therapist, St. Boniface General Hospital

29. Detective Sergeant John Burchill, Winnipeg Police Service

30. Stephanie Mandzie, friend of June Morris

31. Michael Vincent LeBlanc, Public Health Inspector, Supervisor of Suburban Winnipeg Public Health Inspectors

32. Dr. Jan Margaret Davies, Anesthetist, Calgary Foothills Medical Centre

33. Dr. Robert Robson, Director of Patient Safety and Quality Improvement, Winnipeg Regional Health Authority

34. Kevin Willis Hall, Regional Director of Pharmacy, Winnipeg Regional Health Authority

35. Dr. Michel Tetreault, Chief Medical Officer, St. Boniface General Hospital

36. Yvonne Marie Morier, Clinical Risk Manager, St. Boniface General Hospital

EXHIBIT LIST

Exhibit No.	Description
1	Volumes 1 to 7 of disclosure material
2	Scale drawing of Surgical Intensive Care Unit
3	Booklet of photos
4	Summary of events from admission to hospital
5	Glossary of terms
6	Compendium of Pharmaceuticals and Specialties
7	Hard copy of PowerPoint presentation entitled “Potassium”
8	Hard copy of PowerPower presentation entitled “Clinical Scenarios for a Potassium Overdose, the Search for an Explanation of Buretrol Findings” - slides 1 to 42
9	Hard copy of PowerPoint presentation – slides 43 to 46
10	Sharps container
11	Empty 50 millilitre vial of potassium acetate
12	Pharmacy-labeled Ziploc bag
13	List of recommendations prepared by Dolores Friesen
14	Performance Appraisal Report of Danny Chin dated November 20, 2001
15	Series of windows relating to prescriptions ordered for June Morris which were dispensed from either the Pyxsis machine or the pharmacy
16	Colleague 3 infusion pump manual
17	Nursing education materials

Exhibit No.	Description
18	Intensive Care Flow Sheet
19	Death Policy – D2(b)
20	Death Policy – D2(a)
21	Occurrence Report form
22	Handbook for the Continuing Competence Program
23	Photocopy of Closing Order signed by Dr. Fast and Entry Warrant
24	Hard copy of PowerPoint presentation regarding Senior Squalor Syndrome
25	Curriculum Vitae of Jan Margaret Davies
26	Report prepared by Dr. Davies (56 pages)
27	Timeline prepared by Dr. Davies (19 pages)
28	Hard copy of PowerPoint presentation prepared by Dr. Davies (20 pages)
29	Copy of blown-up slide entitled “The Grid”
30	Section 9, *The Alberta Evidence Act* (2 pages)
31	ISMP Canada Safety Bulletin – Concentrated Potassium Chloride: A Recurring Danger (2 pages)
32	ISMP – Medication Safety Alert re Sodium Acetate and Potassium (2 pages)
33	ISMP’s list of high-alert medications (2 pages)
34	One-page article entitled “What is an FMEA”
35	WRHA Policy – Critical Clinical Occurrences, Reporting and Management

Exhibit No.	Description
36	2001/2002 Annual Report: The Hospital Pharmacy in Canada Survey – Medication Incidents (4 pages)
37	ISMP Canada Safety Bulletin – More on Potassium Chloride, dated November 2003, Volume 3, Issue 11 (1 page)
38	Black binder containing documents filed on behalf of St. Boniface General Hospital related to policy and procedure
39	WRHA Pharmacy Program, Double-Check Policy for Potassium IV Compounding in Pharmacy
40	Memorandum entitled “2005-2006 Quality Performance Plan” (a.k.a. operational plan) with attachments (3 pages)
41	CCHSA Patient Safety Goals and Requirement Organizational Practices Communiqué #2: December 2004
42	Critical Clinical Occurrences Reporting and Management Policy (9 pages)

APPENDIX

S.M. 2005, c. 24
Bill 17, 3rd Session, 38th Legislature

The Regional Health Authorities Amendment and Manitoba Evidence Amendment Act

(Assented to June 16, 2005)

HER MAJESTY, by and with the advice and consent of the Legislative Assembly of Manitoba, enacts as follows:

PART 1

THE REGIONAL HEALTH AUTHORITIES ACT

C.C.S.M. c. R34 amended

1 The Regional Health Authorities Act is amended by this Part.

2 The following is added after section 53:

PART 4.1

PATIENT SAFETY

Definitions

53.1 The following definitions apply in this Part.

"critical incident" means an unintended event that occurs when health services are provided to an individual and results in a consequence to him or her that

(a) is serious and undesired, such as death, disability, injury or harm, unplanned admission to hospital or unusual extension of a hospital stay, and

(b) does not result from the individual's underlying health condition or from a risk inherent in providing the health services. (« incident critique »)

"critical incident review committee" means a committee of one or more individuals established under subsection 53.3(1) or 53.4(1). (« comité d'examen des incidents critiques »)

"personal health information" means personal health information as defined in *The Personal Health Information Act*. (« renseignements médicaux personnels »)

"personal information" means personal information as defined in *The Freedom of Information and Protection of Privacy Act*. (« renseignements personnels »)

Critical incident: disclosure and recording

53.2(1) Regional health authorities, health corporations and prescribed health care organizations must establish written procedures respecting providing information about and recording critical incidents as required in subsection (2), in accordance with guidelines approved by the minister.

Duty to inform individual re critical incident

53.2(2) If a critical incident occurs when a regional health authority, health corporation or prescribed health care organization is providing health services to an individual, the authority, corporation or organization must ensure that

(a) appropriate steps are taken to fully inform the individual, as soon as possible, about

(i) the facts of what actually occurred with respect to the critical incident,

(ii) its consequences for the individual as they become known, and

(iii) the actions taken and to be taken to address the consequences of the critical incident, including any health services, care or treatment that are advisable;

(b) a complete record is promptly made about the critical incident, which includes

(i) the facts of what actually occurred with respect to the critical incident,

(ii) its consequences for the individual as they become known, and

(iii) the actions taken and to be taken to address the consequences of the critical incident, including any health services, care or treatment that are advisable; and

(c) the record described in clause (b) is available to be examined and copied by the individual at no cost.

If individual lacks capacity or is deceased

53.2(3) If an individual lacks the capacity to understand the nature and consequences of a critical incident, or is deceased, the information required to be provided and the record to be made available under subsection (2) must be provided or made available to a person authorized by the regulations to receive information and records on the individual's behalf.

Critical incident: health corporation or organization

53.3(1) Except as provided in subsection (6), if a critical incident occurs when health services are provided to an individual by a health corporation or a prescribed health care organization, the corporation or organization must promptly

(a) notify the regional health authority for the health region in which the critical incident took place about the critical incident, in accordance with guidelines established by the regional health authority; and

(b) in consultation with the regional health authority, establish a critical incident review committee, consisting of one or more individuals satisfactory to the regional health authority, to investigate and report respecting the critical incident.

Regional health authority to notify minister

53.3(2) Promptly upon being notified about a critical incident under subsection (1), the regional health authority must notify the minister about the critical incident.

Investigation and reports of review committee

53.3(3) A critical incident review committee established under subsection (1) must, in accordance with the health corporation's or prescribed health care organization's directions,

(a) investigate the critical incident and, during the investigation, provide information and reports to the corporation or organization as requested; and

(b) upon completing the investigation, report its findings and recommendations to the corporation or organization in writing.

Reports to regional health authority

53.3(4) In accordance with guidelines established by the regional health authority, the health corporation or prescribed health care organization must provide information and reports to the authority about the critical incident and the critical incident review committee's investigation, including a written report upon completion of the investigation.

Reports by regional health authority to minister

53.3(5) The regional health authority must provide information and reports to the minister about the critical incident and the critical incident review committee's investigation, including a written report upon completion of the investigation.

Exception: designated organizations

53.3(6) Subsections (1) to (5) do not apply to a prescribed health care organization that is designated by regulation. Instead, an organization that is designated must

(a) notify and report to the minister, rather than the regional health authority, if a critical incident occurs; and

(b) comply with the duties imposed on a regional health authority in section 53.4, with the necessary changes.

Critical incident: regional health authority

53.4(1) If a critical incident occurs when health services are provided to an individual by a regional health authority, the authority must promptly

(a) notify the minister about the critical incident; and

(b) establish a critical incident review committee to investigate and report respecting the critical incident.

Investigation and reports of review committee

53.4(2) A critical incident review committee established under subsection (1) must, in accordance with the regional health authority's directions,

(a) investigate the critical incident and, during the investigation, provide information and reports to the regional health authority as requested; and

(b) upon completing the investigation, report its findings and recommendations to the regional health authority in writing.

Reports to minister

53.4(3) The regional health authority must provide information and reports to the minister about the critical incident and the critical incident review committee's investigation, including a written report upon completion of the investigation.

Critical incident: notification by others

53.4.1(1) Any of the following who believes that a critical incident has occurred in respect of health services provided to an individual may notify the health corporation, prescribed health care organization or regional health authority which provided the health services:

(a) the individual himself or herself;

(b) a relative of the individual;

(c) an individual working at or for the regional health authority, the health corporation or the prescribed health care organization.

Action where notification received

53.4.1(2) Promptly upon being notified under subsection (1), the health corporation, prescribed health care organization or regional health authority must determine if a critical incident occurred.

Review committee provisions apply

53.4.1(3) If the regional health authority determines that a critical incident has occurred, it must ensure that the incident is investigated and reported on, and sections 53.3 and 53.4 apply, with necessary changes.

Retaliation prohibition applies

53.4.1(4) Section 53.9 applies, with necessary changes, to an individual described in clause (1)(c) who gives a notification under this section.

Minister's guidelines

53.5 The minister may establish guidelines respecting investigations to be carried out, and notices and reports to be provided, under this Part.

Review committee may require information

53.6(1) For the purpose of carrying out its duties under this Part, a critical incident review committee may require a health corporation, prescribed health care organization, regional health authority, health care provider or other person providing health services that has information or custody or control of a document or record — including a record containing personal health information or personal information — relating to the critical incident being investigated to provide the information, document or record to the review committee.

Limit re personal health information and personal information

53.6(2) A critical incident review committee must limit personal health information and personal information to be provided under subsection (1) to the minimum amount necessary to properly carry out its duties under this Part.

Sharing of information between review committees

53.6(3) If a critical incident involves more than one health corporation, prescribed health care organization or regional health authority, the members of the critical incident review committees established to investigate it may share information, documents and records — including records containing personal health information or personal information — with each other to the extent necessary to properly carry out their duties under this Part.

Limit re personal health information and personal information in notices and reports

53.7 A notice, report or information provided under this Part may include personal health information and personal information. But personal health information and personal information must be limited to the minimum amount necessary to accomplish the purposes of this Part.

Discovery of information to be provided to individual

53.8 If, in the course of investigating a critical incident, a critical incident review committee becomes aware of information that should be, or should have been, provided to an individual or included in a record under subsection 53.2(2),

(a) the review committee must notify the health corporation, prescribed health care organization or regional health authority responsible for providing or recording the information; and

(b) the corporation, organization or authority must ensure that the information is promptly provided or recorded as required under subsection 53.2(2).

Retaliation prohibited

53.9 No person shall dismiss, suspend, demote, discipline, harass or otherwise disadvantage another person because that other person has complied with a requirement to provide information, documents or records under this Part.

Limit on access to records re critical incident

53.10(1) No person, including an individual information is about, has a right of access under any Act or regulation — including under Part 2 of *The Freedom of Information and Protection of Privacy Act* or Part 2 of *The Personal Health Information Act* — to any of the following:

(a) a notice provided under section 53.3 or 53.4;

(b) a record or information — including an opinion or advice — prepared solely for the use of a critical incident review committee, or collected, compiled or prepared by a critical incident review committee for the sole purpose of carrying out its duties under this Part;

(c) a report, record or information that is required to be prepared or provided by a health corporation, prescribed health care organization or regional health authority under section 53.3 or 53.4.

Exception

53.10(2) The limit on the right of access in subsection (1) does not apply to

(a) the information in a record referred to in clause 53.2(2)(b), or to an individual's right to examine and copy a record under clause 53.2(2)(c);

(b) information in a record created or maintained for the purpose of providing health services, including health care or treatment, to an individual; or

(c) information in a record required by law to be created or maintained by the owner, operator or person in charge of a facility or by a health care provider.

3 *The following is added after clause 59(p.1):*

(p.2) respecting critical incidents for the purpose of Part 4.1, including

(i) prescribing health care organizations for the purpose of the Part,

(ii) respecting the persons who are to receive information and records under subsection 53.2(3) on behalf of an individual who lacks capacity or is deceased, and

(iii) designating prescribed health care organizations for the purpose of subsection 53.3(6);

PART 2

THE MANITOBA EVIDENCE ACT

C.C.S.M. c. E150 amended

4 ***The Manitoba Evidence Act*** *is amended by this Part.*

5 *Sections 9 and 10 are replaced with the following:*

Definitions

9(1) The following definitions apply in this section and in section 10.

"committee" means

(a) a critical incident review committee established under Part 4.1 of *The Regional Health Authorities Act*;

(b) a standards committee appointed under section 24 of *The Hospitals Act*;

(c) a medical staff committee established for the purpose of studying or evaluating medical practice in a hospital;

(d) a research committee of a hospital; and

(e) a medical research committee designated in a regulation made by the Minister of Health for the purpose of sections 9 and 10. (« comité »)

"committee proceeding" means a proceeding of, or an investigation, study, evaluation, analysis, program or research carried out by, a committee. (« travaux de comité »)

"critical incident" has the same meaning as in *The Regional Health Authorities Act.* (« incident critique »)

"facility" has the same meaning as in *The Regional Health Authorities Act*. (« établissement »)

"health care provider" has the same meaning as in *The Regional Health Authorities Act*. (« fournisseur de soins de santé »)

"health services" has the same meaning as in *The Regional Health Authorities Act*. (« services de santé »)

"hospital" has the same meaning as in *The Hospitals Act*. (« hôpital »)

"legal proceeding", in addition to having the meaning set out in section 1, includes

(a) an action or proceeding for the imposition of punishment by fine, penalty or imprisonment to enforce any regulation made under an Act of the Legislature; and

(b) a proceeding before a tribunal, board or commission. (« poursuite judiciaire »)

"record" means a record of information in any form, and includes any information that is written, photographed, recorded or stored in any manner, on any storage medium or by any means, including by graphic, electronic or mechanical means. (« document »)

"witness" in addition to its ordinary meaning, includes a person who, in the course of a legal proceeding,

(a) is examined for discovery;

(b) is cross-examined on an affidavit made by him or her;

(c) answers interrogatories;

(d) makes an affidavit as to documents; or

(e) is called upon to answer any question or produce any record, whether under oath or not. (« témoin »)

Privilege re committee proceedings

9(2) Subject to subsection (4), a witness in a legal proceeding, whether a party to it or not,

(a) is not liable to be asked and is not permitted to answer any question or to make any statement with respect to a committee proceeding; and

(b) is not liable to be asked to produce, and is not permitted to produce,

(i) any record or information — including, without limitation, an opinion or advice — that is prepared solely for the use of, or collected, compiled or prepared by, a committee for the purpose of carrying out its duties,

(ii) any record or information — including, without limitation, an opinion or advice — that is used solely in the course of, or arising out of, a committee proceeding, or

(iii) a notice, report or other record or information respecting a critical incident that is required to be provided by a health corporation, prescribed health care organization or regional health authority under section 53.3 or 53.4 of *The Regional Health Authorities Act* (patient safety).

Records not admissible

9(3) Subject to subsection (4), a record and information referred to in clause (2)(b) are not admissible as evidence in a legal proceeding.

Exception

9(4) The privileges in subsections (2) and (3) do not apply

(a) to information in a record created or maintained for the purpose of providing health services, including health care or treatment, to an individual;

(b) to the facts of what actually occurred with respect to a critical incident that are contained in a record, unless those facts are also fully recorded in a record described in clause (a), or another record, that is available to the individual affected by the critical incident; or

(c) to information in a record required by law to be created or maintained by the owner, operator or person in charge of a facility or by a health care provider.

Members of committees, etc. not excused generally

9(5) Except as provided in subsection (2), a witness in a legal proceeding who

(a) is or has been a member of, or has participated in the activities of, a committee; or

(b) has provided a record or information to a committee;

is not excused from answering any question or producing any record that the witness is otherwise required to answer or produce.

Protection from liability

10(1) The disclosure of

(a) a record or information to a committee for use in committee proceedings; or

(b) a record or information that arises out of committee proceedings;

does not raise or create any liability on the part of the person making the disclosure, unless the person was acting in bad faith.

Committee member's protection from liability

10(2) No action lies against a member of a committee for actions taken, or for disclosing or providing any record or information — including a report of findings or recommendations — in the course of a committee proceeding, unless the member was acting in bad faith.

PART 3

CONSEQUENTIAL AMENDMENTS AND COMING INTO FORCE

Consequential amendment, C.C.S.M. c. M110

6(1) ***The Mental Health Act*** *is amended by this section.*

6(2) *Subsection 36(2) is amended by adding the following after clause (k):*

(k.1) required by a critical incident review committee established under Part 4.1 of *The Regional Health Authorities Act*;

Coming into force

7 *This Act comes into force on a day to be fixed by proclamation.*