Forensic Perioperative Nursing

Advocates for Justice

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Health care practice and the law become entangled during crucial moments in the perioperative area when patient care is of greater concern than social justice.

An understanding of the following key forensic concepts will guide the perioperative nurse as the patient advocate in possible criminal cases.

Abstract

Facts and evidence have been negated or lost by the inexperience of health care professionals who are not cognizant of the legal requirements concerning potential criminal cases. In the perioperative setting, policy and procedure should provide guidelines for potential criminal cases based on the key concepts and principles of forensic science.

Potential forensic cases and traumatic injuries are not limited to major health care centres. All hospitals should have policies and procedures which outline: traumatic injuries/death, staff responsibilities, details of collecting evidence, documentation, chain of custody. The procedure should also include care of victims, suspected perpetrators as well as family/persons accompanying patient.

Key Forensic Concepts

The key forensic concepts are:

Violent Crimes: Involve the use of force or the threat of force to abuse or damage. Composed of four offences: manslaughter, forcible rape, robbery and aggravated assault.

Forensic Science: The study of the application of the principles of physical science to law, affecting life and property, in order to ascertain the cause of death.

Clinical Forensics: Applying principles and practices of medicine/science concerning questions of law affecting investigation of living trauma victims.

Medicolegal Deaths: Any death that must be investigated. Medicolegal deaths include unexpected or violent deaths.

Forensic Pathology: The practice of medicine that produces evidence to be used in the administration of justice, public health and public safety. The medical principles are taken from the study of diseases and injury.

Coroner non-criminal cases: The patient dies in the operating room and the coroner accepts the case. The coroner may direct the police to gather evidence. This would include having the authority to enter the operating room and inspect or copy the health record.

When organ harvesting for transplant is a consideration, and the death is reportable to the coroner. Staff should contact the coroner at the earliest possible opportunity (preferably prior to arranging the harvesting procedure) for authority to proceed. In most cases, this authority is given. In some cases, particularly where there is a criminal investigation, the coroner is not able to authorize harvesting of some organs. The police, under the direction of the coroner, may video or photograph the surgery.

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Coroner non-criminal surviving patient: coroner does not yet have jurisdiction but has reasonable grounds to believe there is a possibility of a coroner's investigation and the hospital's co-operation is appreciated. Do not disclose any patient information or the health care record without consent of the patient or substitute decision maker. Verbal information relevant to the coroner's purposes may be shared if death is inevitable but not imminent.

Criminal coroner's case: police may act under the authority of the coroner. Under the Coroner's Act, coroners have broad powers of entry and inspection and the Act authorizes the delegation of these powers to police officers.

Criminal non-coroner's case: the patient (victim/perpetrator) is not expected to die. The police officer must have either patient/substitute decision maker consent, or a warrant for disclosure of evidence or to access the health care record. The police officer may accompany the patient until the patient is anesthetized. The police officer's role is protection of the staff and patient, and to record any utterances made by the patient.

Types of Injury

Perioperative nurses must observe the patient and identify the injuries.

When involved in a possible criminal case, perioperative nurses should be cognizant of the following types of injuries:

A. Blunt Injuries

Blunt injuries are classified into four categories: (1) **Abrasions,** (2) **Bruises and Contusions,** (3) **Lacerations** and (4) **Fractures.**

1. Abrasions occur as the result of sliding or compression forces to the outer layers of skin. These mark the exact point at which contact occurred. They may be seen in conjunction with bruises or lacerations.

2. Bruises are caused after sufficient force has been applied to distort soft tissues and rupture vessels, but not break skin. Blood leaks into surrounding tissues from damaged vessels and various color changes occur. Blood may track past structures and flow within the tissue fluids to surface into other areas and not necessarily at the point of contact.

3. Lacerations are distortions in soft tissues resulting from tearing, ripping and crushing, etc. They are characterized by non-symmetrical edges and vary widely in size and shape.

4. Fractures may indicate the direction of the blow according to the type and location of the fracture. Breaks occur in different ways according to application of force and how it is applied.

B. Sharp Injuries

Sharp injuries are classified into two categories: (1) **Cuts and Incisions** and (2) **Stab Wounds.**

1. Cuts occur when a sharp object comes in contact with the skin with enough force to divide it. Cuts are characterized by length, depth, clean edges and tending to bleed freely. There may be the presence of foreign materials.

2. Stab wounds are more likely to reflect the weapon or instrument used. The wounds are characterized by depth being greater than the width and the relative absence of abrasions around the wound's margins. The track of the wound may be greater than the actual length of the object because of the compressive force applied when the *hand* contacted the body. This can prove to be dangerous to the vital internal organs.

C. Gunshot Wounds: Entry & Exit[3]

Entry Wounds

Gunshot wounds are classified into three categories: (1) **Distant, Long range**, (2) **Close up, medium to short range** and (3) **Contact.**

1. Long range gunfire causes a perforating wound of the skin. No burn or tattoo (gunpowder imbedded in the skin surrounding the wound) is readily visible.

2. Wounds caused by medium to close range gunfire usually have a ring of the products of discharge surrounding the entry hole. There may be a burn around the hole, depending on the shape/size of the gunpowder grains. Tattooing is present to some degree.

3. Contact wounds are the result of the muzzle of the gun being held close to the target. The entry hole is surrounded by soot and blackened tissue; some ecchymosis may also be present. A gunshot wound usually causes a cross-shaped tear and ragged flame burn on the clothing.

When looking for trace evidence at the entry wound, forensics considers the caliber and type of weapon used, if it is known. Different caliber weapons leave different identifying markings at the point of entry.

Exit Wounds

It is possible to have more than one exit wound per entrance wound. There are several causes for this:

(1) the bullet may fragment in the body,

(2) the bullet may fracture bone, causing bone fragments to be propelled out of the body, and

(3) two successive contact shots may occur at one point on the body with one entrance wound, but two bullets may exit at separate points causing two exit wounds.

Exit wounds vary in size and shape. The skin of an exit wound will be perforated from the inside out from the stretching force of the missile as it pushes its way through the outside. The size variation of exit wounds can be caused by any one or more of the following factors:

- the velocity of the bullet at the point of exit,
- surface area of the bullet striking at the point of exit,
- deformation of the missile,
- yawing and tumbling of the bullet,
- fragmentation of the bullet,
- presence or absence of bone fragments,
- presence or absence of bone under the skin,
- presence or absence of objects pressing against the skin (back of a car seat, etc)

Policies & Procedure

Outline:

Potential forensic cases and traumatic injuries are not limited to major health care centres. All hospitals should have policies and procedures which outline:

- criminal cases requiring investigation
- staff responsibilities
- evidence collection
- documentation
- chain of custody
- care of victims, suspected perpetrators and families/persons accompanying patient

Criminal cases requiring investigation may include:

- motor vehicle accident
- homicide or suicide
- an infant or child
- involvement of firearms or other mortal weapons
- work related accident
- all accidents (fire, falls, electrocution, etc.)
- involvement of damaged or improperly used equipment
- an unidentified person
- a prominent person
- involvement of poisoning, illegal drugs or overdose
- involvement of public health hazard
- anyone in police custody regardless of circumstances
- death that is sudden or unexpected

Staff Responsibility:

The Perioperative nurse should:

- Observe and document the patient's appearance and behaviour on arrival to the OR.
- Record any comments made by family or persons accompanying the patient.
- Record as quotes, comments made by the patient.
- Document all body marks accurately to help preserve evidence.
- Describe blood stain patterns and bloody finger prints that are visible on the patient's body or clothing.
- Note any unusual odors.
- Collect evidence on all suspicious or unclear cases when the patient arrives in OR suite.
- Establish and document chain of custody. Obtain business card and/or name and badge number of the investigator responsible for the case. Depending on the circumstances, the investigating officer may be present in the OR to witness/record removal of foreign objects (legal authorities decide whether to retain or discard evidence). Refer to *Key Forensic Concepts.*
- Maintain patient confidentiality. Do not release information over the telephone.

Evidence Collection

Nurses dealing with forensic cases can aid the law and help in criminal investigations. Basic principles for preservation of evidence require the following suggested methods to be used:

- Wear gloves at all times.
- Do not use metal instruments when handling and/or removing metal evidence.
- If two (2) or more wounds, identify evidence from each wound separately.
- Manipulate body as little as possible.
- All clothing should be placed flat on pieces of paper and insert paper between layers. Roll or leave flat and place each article in separate paper bags.
- Do not cut through holes in clothing as these are points of entry and may have evidence. Also note if clothing is on correctly.
- If bullet or knife is removed in the O.R., the chain of custody must be established and documented. Rinse bullets, fragments and knives in water to prevent destruction of microscopic markings. Do not wipe and handle as little as possible. Wrap in soft packing and place in dry container.
- When collecting body fluid, i.e., urine, gastric contents, blood, seminal fluid use dry tubes or specimen containers. For fluids around wounds or wet stains, i.e., blood stain, absorb stain into cotton swab. Once swab is air dried put swab in dry container.
- If possible, examine body for loose hairs (including hair shaved around wound sites), clothing/carpet fibres, glass, paint chips, wood or any object which is foreign to the body. Place items in dry containers.
- Any tissue, i.e., bone flap, should be placed in dry container and preserved according to O.R. protocol.
- Note patient's behaviour, appearance and any comments made by the client, family members or friends. Note any unusual odours.

Documentation

Documentation includes:

1. patient's name
2. hospital number
3. date and time
4. specimen - describe appearance, do not identify
5. location of specimen

All specimens taken, should be recorded on the health record.

Chain of Custody

To establish chain of custody:

- Identify the chief investigator, coroner or police.
- Document chief investigator's name.
- Obtain a business card.
- Document the badge number from constable.

Legal authorities decide to retain or discard evidence.

Care of Victim/Suspected Perpetrator, Family/ Accompanying Persons

Never leave a family member or friend alone with the victim. The perioperative nurse must stay with the family member/friend to offer support and to ensure evidence is not altered by this person. In these situations, families are in a state of shock and denial and may look to the nurse for support, direction and information.

Perioperative nurses can contact the clergy for families and victims. Many ORs have an on-call clergy list available.

The suspected perpetrator may also be our patient. They are entitled to the same compassion and expertise we demonstrate to the victim.

Death of Victim or Suspected Perpetrator

- If it is a Coroner's case, do not remove IV, chest tubes, etc. for purposes of identifying site of injury.
- Do not put hands in plastic bags, use paper because plastic causes condensation and it can destroy any traces of evidence.
- Put hands at side, do not tie.
- Mark with an "X" attempted IV starts and document.
- Properly identify the body.
- Follow directions of the Coroner. Coroner will authorize the charge nurse to implement movement of the body if it obstructs the care of other patients.
- Keep body in secure area until transported to the morgue.
- Do not leave family or persons accompanying patient, alone with patient. There should be no access by the family without permission of the coroner. Viewing should be limited to viewing only, but touching as per direction of the coroner may be allowed.

Conclusion

Perioperative nurses are obligated to protect the moral and legal rights of all clients. It is important for us to provide nonjudgmental care and act as patient and family advocates. Patients and suspected perpetrators have inherent rights; evidence collection is secondary. Your efforts on behalf of the patient may effect them for the rest of their lives.

Emotions are human makeup. Ask for counseling for yourself and fellow workers, if needed.

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Inquest Recommends Whistle Blowing Legislation to Protect Nurses When Reporting Problems

By Editorial Staff

Winnipeg: The courageous Carol Youngston in a statement November 27, 2000, following the release of the Report on the Inquest into the deaths of 12 children in the Pediatric Cardiac Program at Winnipeg's Health Sciences Centre in 1994, said: "We are pleased that the concerns that the nurses raised in 1994 were validated by Judge Sinclair's Report".

"Those of us directly involved in the Cardiac Program feel that the Health Sciences Center owes the families an apology. As well, we hope that the Health Sciences Center will acknowledge the value of nurses in the health care system".

At a news conference following release of the Inquest Report officials with the Winnipeg Regional Health Authority and the Health Sciences Centre extended apologies to the families of the 12 children, saying they expect the authority and the provincial government will consider a financial compensation package.

Carol Youngston quoted from her report to the Inquest stating:

> "Of particular importance is that nurses not be treated by doctors and administrators as untrained subordinates whose concerns can be dismissed as emotional responses to tragic outcomes".

Carol Youngston and her colleagues published the sad tale of the baby deaths in the December, 1999 issue of the Journal.

Five of the deaths were preventable and another four might have been preventable, provincial Judge Murray Sinclair found in his long-awaited report on the deaths in the pediatric cardiac surgery program.

Of the 12 children who died after heart surgery at HSC performed by Dr. Jonah Odim in 1994, only one death has been acceptably explained, Sinclair wrote in his 516-page report.

In the report, Sinclair paints an alarming picture of the system under which the surgeries took place, and offers wide-ranging recommendations.

"The evidence suggests that the pediatric cardiac surgery program at the Health Sciences Centre did not provide the standard of health care that it was mandated to provide and that parents believed, and had a right to believe, that their children would receive," Sinclair says in the report.

"While some of the problems that the program faced related to the abilities and conduct of specific individuals, other problems were largely systemic in nature." according to the report.

Dr. Brian Postl, head of the health authority, and John Horne, chief operating officer of HSC, said some changes have already been implemented at the hospital, which no longer performs pediatric cardiac surgery, and they will be reviewing Sinclair's report and his 36 recommendations.

Both admitted that mistakes were made in 1994, and now that the inquest has concluded, some hospital staff may be disciplined.

"Disregard for Nurses"

The report follows what is said to be the longest inquest in Canadian history, and it describes confused lines of authority within the HSC's pediatric cardiac program, inadequate monitoring, a flawed hiring process for surgeons, and a disregard for nurses and for the needs of the families of the children involved.

"The evidence suggests that the program continually undertook cases that were beyond the skill and experience of the surgeon and the team," the report states.

HSC suspended the program in December 1994 because of the high mortality rate.

Though the inquest into the deaths had no mandate to determine who is legally responsible for the deaths, the only people Sinclair absolves are the parents themselves.

"The deaths of these children were not the result of any failing on the part of the parents," writes Sinclair. "Yet of all those who have been involved in this sad proceeding, the parents will continue to carry the greatest burden. For that, we owe them the commitment to do all that we can to ensure that this does not happen again."

The report says families were not as informed as they should have been on Odim's qualifications and experience, saying those running the cardiac program failed to fully take into account Odim's lack of experience when he was originally hired, and failed to supervise him once he arrived.

"It would be safe to say that Odim's recruitment and hiring were marked by flawed procedures," Sinclair writes.

"The failure to watch and observe Odim during actually performing surgery, or to speak with anyone who had recently performed surgery with him, provided only an incomplete impression of Odim's surgical abilities and his ability to get along with other personnel in the operating room."

According to the *Winnipeg Free Press* Odim's lawyer, Raymond Flett, said Sinclair's report appears to cast blame on his client, even though that is beyond the mandate of an inquiry.

He added Sinclair should have given more weight to the opinions of Odim's peers.

Odim is said to be currently listed as a faculty member in cardiothoracic surgery at the UCLA Medical Center in Los Angeles. He is also rumored to be in research only.

Sinclair recommends the province create a patient's rights handbook ensuring access to information about a surgeon's experience. And it recommends the HSC establish a more thorough recruitment process.

"The fact that a surgeon has not performed a particular surgical procedure on his or her own in an unsupervised setting in the past must be disclosed," Sinclair says in the report.

Though nurses in the pediatric cardiac surgery program raised legitimate concerns about the program, the report says they were largely ignored.

Creation of Whistle-blowing Legislation

The report recommends the creation of whistle-blowing legislation to protect nurses and other staff when reporting problems.

The report also singles out the College of Physicians and Surgeons, which it says has yet to investigate any of the individual cases, and the Chief Medical Examiner's Office.

It recommends the college revamp its policies so that future investigations no longer depend on complaints.

The report states the Chief Medical Examiner's Office "failed to identify the problems with the pediatric cardiac surgery program in a timely fashion."

The Report recommends establishing a protocol requiring hospitals to inform the office of program changes and of any reviews forced by hospital-related deaths. ■