The Patient Safety Education Program™
CANADA

PSEP

Module 12a: Interventional Care: Perioperative Care

Abstract

Slide 1

Module 12a

Interventional Care:
Perioperative Care

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The term 'Perioperative' refers to the preoperative, intraoperative and postoperative phases of the patient's surgical journey. When a patient enters the hospital for surgery the outcome is not only about the actual surgery but a series of events leading up to, during and after the surgery.
This module will discuss perioperative care and its complexities, the value of teamwork, effective communication, and standardized practices and protocols that provide safe patient care.

Additionally, many organizations have published toolkits and guidelines that support safe perioperative practices. Several of these are both addressed and referenced throughout the module. Review of the following documents will support this module:

- CPSI's Safer Healthcare Now! Interventions on Surgical Safety Checklist, Surgical Site Infections, Medication Reconciliation, and Venous Thromboembolism Prevention
- Accreditation Canada Qmentum Service Excellence Standards: Perioperative Services and Invasive Procedures
- CPSI PSEP modules on Leadership, Communication, Medication safety and Teamwork.

Keywords

Perioperative, surgical care, patient safety incidents, never events, surgical errors , surgical safety checklist, teamwork, communication, briefing, debriefing, timeout, adverse events, protocol, guidelines, evidenced-based practice, checklists, sentinel events, communication failures, verification process, quality initiatives

Teaching method

Small group, case-based discussions, role play

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Knowledge requirements

- Describe causes and effects of patient safety incidents in Perioperative Care
- Describe the surgical pathway of a patient
- Identify standards/ best practices to provide safe Perioperative care
- Identify methods to close the loop to prevent unsafe practices
- Describe the importance of Communication and Teamwork

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Performance requirements

- Standardize processes in Perioperative care
- Enhance Teamwork & Communication
- Ensure meaningful Patient and Family Centred Care approaches
- Facilitate patient safety and quality initiatives

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Knowledge elements

The knowledge elements include an understanding of:

- The causes and effects of patient safety incidents in Perioperative Care
- The surgical pathway of a patient – departments and stakeholders
- The standards/ best practices to provide safe Perioperative Care
- Methods to close the loop to prevent unsafe practices
- The importance of Communication and Teamwork in providing safe Perioperative Care

Performance elements

The performance elements include engaging in exercises to:

- Standardize processes in perioperative care
- Enhance teamwork & communication in the perioperative arena
- Ensure meaningful patient and family centred care approaches are employed
- Facilitate engagement in evaluation of patient safety and quality initiatives

Slide 4

Trigger tape

A patient's spouse suspects that a wrong-site surgical procedure is about to be performed on his wife. When he brings this fear to the nurse's attention, the sources of this type of patient safety incident are revealed.

Other examples of patient safety incidents

- In January 2007 Mary B., a 61 year-old working artist, was generally healthy apart from leg pain and limitations due to osteoarthritis of her hips and knees. After years of progressive pain and a carefully considered decision, Mary decided to undergo knee arthroplasty. She had a very positive attitude going into the surgery. Unfortunately, Mary developed major bilateral pulmonary emboli a few days after hospital discharge. Although Mary was prescribed low doses of warfarin after surgery, it was given for only five days and she never achieved the target INR range. "I became what the Sheps/Cardiff Report (2004) to Health Canada would refer to as a near miss in their critical report on the profound 'lack of safety management culture in healthcare'," says Mary. Given that the most common serious complication after major orthopaedic surgery is deep vein thrombosis and pulmonary emboli, Mary believes that the hospital where she had surgery has a "serious systemic blind spot in understanding PE which puts any patient at high risk." Mary's marked shortness of breath and chest pain slowly resolved over several weeks after starting anticoagulant therapy. She "felt alone in trying to understand the cause" of her distressing symptoms and why better thromboprophylaxis was not used in her case. She is now reluctant to have more surgery because of her near fatal event (Safer Healthcare Now! Venous Thromboembolism Prevention: getting started kit, May 2012).
- Additionally, wrong site/procedure/patient studies include a report by hand surgeons that found that 21% of surgeons surveyed (n=1050) reported performing wrong-site surgery at least once during their careers. These so called "never" events can be prevented by taking appropriate precautions.
- An American team retrospectively analysed the data base of US medical liability insurance databases over a six year period (2002-2008). During that time there were 107 wrong surgical site surgeries and 25 wrong patient surgeries. Five (5) of the twenty-five (25) wrong patient procedures experienced serious harm. 38 patients of the 107 wrong site surgeries also suffered significant harm including 4 wrong organ resection errors (Prescrire Int. 2013).

Introduction

Slide 5

Introduction

- Surgery is an integral part of healthcare and is increasingly complex
- Patient safety incidents occur with regrettable frequency
- Breakdowns in our systems and information transfer
- Standardized Safety Processes are required
- A Shared Mental model – teamwork & communication

Surgery is an integral part of health care with an estimated 234 million operations performed each year (Haynes 2009). Surgical procedures have become increasingly complex with advancing technology and multiple health care personnel interacting with the patient. Patient safety incidents are occurring with regrettable frequency and over one half (1/2) are reported to be preventable (Bergs 2014, deVries 2008, Pearce 2012).

Studies are now being published reviewing the contributing factors to potential causes of patient safety incidents with a view to rectify preventable incidents in practice.

While surgical outcomes have traditionally been viewed as a function of patient co-morbidities and procedural complexities little attention has been given to the system in which care is delivered. This view has changed over the last decade with other factors such as leadership, communication and teamwork having been shown to contribute to safety (Nagpal 2012).

Standardized processes are being implemented by organizations to ensure that all patients receive effective, evidenced based and consistent care. The evidence convincingly demonstrates that when healthcare professionals follow endorsed guidelines and are familiar with the underlying principles supporting a uniform approach to treating and caring for patients, patient outcomes significantly improve.

This module will discuss perioperative patient safety incidents and their contributing factors, standardized practices and strategies to facilitate safety with a focus on teamwork and communication.

Key definitions

Initially, to clarify terminology:

Patient Safety incident is an event or circumstance that could have resulted, or did result, in unnecessary harm to a patient. According to the Accreditation Canada ROP Handbook (2016), it includes:

- harmful incidents (formerly adverse or sentinel events),
- no harm incidents (that reach the patient but did not cause harm),
- near misses (also known as close calls), and
- previously known as adverse events, sentinel events, and near misses.

Never event is a serious, largely preventable patient safety incident that should not occur if the available preventative measures have been implemented by healthcare providers, according to the National Patient Safety Agency. Examples of never events are wrong site surgery and retained instrument/ sponge post-operatively.

 Patient safety will replace the term "client safety" which is consistent with World Health Organization (WHO) terminology.

Adverse event will occur in this module when it is a direct quote from a publication.

Patient safety Incidents and their causes

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Examples of Patient Safety Incidents

Wrong site surgery	Incomplete preparation for surgery
Retention of foreign object/ sponge	Miscommunication
Mislabeled specimens	Incomplete patient chart
Blood not available	Medication errors
Postoperative infection	Antibiotic not administered
DVT/Pulmonary Embolism	All home medications not identified
Required equipment not available	VTE prophylaxis not administered

Multiple studies have identified the nature and frequency of patient safety incidents. The slide lists examples cited in the literature. These failures lead to increased morbidity and mortality. Some of the key points of evidence are included below:

- A systematic review incorporating 16, 424 surgical patients in 14 record review studies concluded 14. 4% of surgical patients experienced adverse events and more than one third of all surgical adverse events were regarded as potentially preventable. 3.6 % of these adverse events were fatal, 10.4 were severe, 34.2% moderate and 52.2% were minor.
Errors in non-operative management caused more frequent adverse events than errors in surgical technique. The non-operative consisted of incorrect or delayed diagnosis and treatment associated with monitoring, anesthesia, medications and judgements.
- Non operative management errors are described in multiple articles. Communications as a leading cause of adverse events.
- Surgical site infection is the most common healthcare associated infection among surgical patients, with 77% of patient deaths reported to be related to infection. Infected surgical patients are twice as likely to die, spend 60% more time in the intensive care unit, and are five times more likely to be readmitted to hospital after initial discharge.
- Between 1990 and 2010 in the United States there were more than 9000 surgical 'never events' (eg. retained foreign bodies, wrong site, wrong patient, and wrong procedure

surgery). Mortality occurred in 6.6% of patients, permanent injury in 32.9% and temporary injury 59.2 % . Malpractice practice claims for these events was $1.3 billion.

- Wrong site surgery is classified by the National Reporting and Learning service (NRLS) as any event in which the surgery is performed with the:
  - o wrong patient,
  - o wrong site prosthesis,
  - o wrong side surgery,
  - o wrong side marked on patient, wrong side blocked,
  - o wrong side marked on theatre list, and
  - o wrong side marked on consent form.

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Canadian Critical Surgical Incidents

Rate of foreign objects left in body

Rate of a foreign objects left inside the patient's body during a procedure, per 100,000 medical and surgical discharges (age 15+).

Canadian Institute for Health Information (CBC 2014)
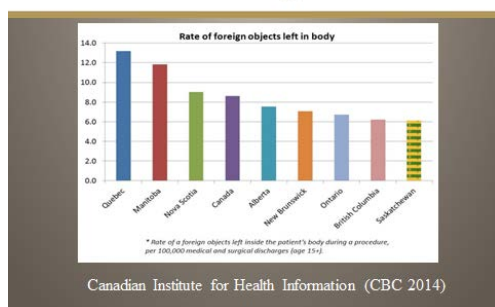
From 2005 to 2013, surgeons operated on the wrong body parts 11 times, performed surgery on the wrong patient once, conducted the wrong surgery on the right patient six times and left "foreign objects" inside a patient 25 times. As a result of incidents such as these the ministry has instituted a "surgical checklist" which requires the medical team to confirm a range of key details before operating. "We have the right patient. We have the right side. We have the right body part," explains Jordan. "You know, it's a walk through." And once the surgery is done, all of the instruments are supposed to be counted to ensure nothing is left behind. The ministry says 98 per cent of surgeries in Saskatchewan are now conducted using this checklist tool. By 2011, the tool had been adopted by all health regions." (CBC 2014)

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Causes of Errors in Surgical Care

Human errors:
- Inadequate communications
- Inadequate checks
- Distracted workers
- Lack of engagement
- Lack of attention to detail

(Howell 2006)
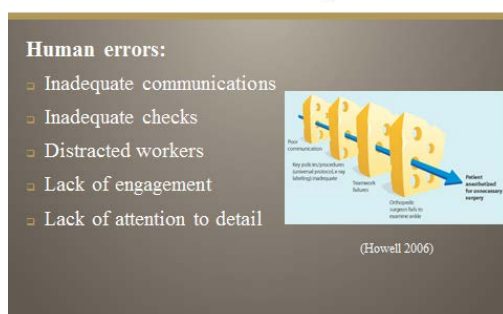
Analysis of errors reveals that most accidents are rarely the result of isolated errors but instead are the result of multiple smaller errors occurring in an environment with fundamental system flaws. System flaws and poor communication can lead to patient errors and potential harm.

The operating room is characterized by fast paced activity, numerous distractions, a hierarchical reporting structure, advanced technology, and complex equipment, all of which can affect health care professionals making them prone to making errors.

Recognizing that errors occur in complex systems such as hospitals, operating rooms are similarly complex subsystems unto themselves. Patients are cared for by multiple providers in different areas under significant time constraints performing highly complex and technologically intense invasive procedures. To further complicate matters, the patient during a significant portion of their care is either sedated or under anesthesia and is unable to participate in their care. Given these elements, the potential for error, and more importantly, those resulting in harm is quite high.

A study of wrong site surgery in orthopedics by Panesar identified that the root cause of wrong surgery is multifactorial however the following causes were predominantly found in the analysis:

- breakdown in communication between surgical team members;
- absence of verification in the operating theatre;
- absence of a verification checklist;
- incorrect marking or consent;
- preparation of the wrong side;
- incorrect draping;
- patient answer to the wrong name; and
- failure of a formal time out procedure

This Swiss Cheese diagram depicts a breakdown in policies and procedures, communications failures and a failure to assess the patient. The result is a patient anesthetized for unnecessary surgery. These errors demonstrate inadequate communications, inadequate or ineffective checks, and distracted health care professionals with lack of engagement and attention to detail. As a result undue harm to patients and errors occur in health care.

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Model of Errors

- Latent Errors – System or Design

- Active Errors- Individual errors
  - Slips and Lapses
  - Mistakes

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We need to understand the types and causes of errors/ near misses in a patient's surgical journey in order to prevent patient safety incidents from occurring.

Errors are differentiated as System errors and Individual errors. They are then subdivided into Active errors including Slips/Lapses and Latent errors.

These four categories of errors will be discussed in detail to provide an understanding of each in order to plan a patient safety initiative.

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Latent Errors in Surgery

- Result of organizational system or design failure
- Flaws in regulatory or institutional policies
- Problems with leadership, the work environment, or inadequate staffing.

Examples:
- Staffing decisions
- Regular testing of equipment not conducted
- Information technology does not function
- No policy for standardized verification checks

Latent errors (blunt end) are the result of organizational system or design failures. These are decisions made away from the bedside that impact the care. Factors that lead to latent errors are: flaws in regulatory or institutional policies and problems with leadership, the work environment, or inadequate staffing. These errors are less apparent than active errors. Examples include:

- working with less than normal staff;
- regular testing of equipment not conducted;
- information technology does not function; and
- no policy for standardized verification check

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Active Errors

- Result of Individual failures at the point of contact
- Committed by those closest to the patient
- Examples include:
  - Surgeon operates on wrong leg
  - Administration of wrong antibiotic dose
  - Equipment programmed incorrectly

Active errors are the result of individual failures at point of contact with larger system. They are sometimes referred to as errors at the sharp end, figuratively referring to a scalpel. In other words, errors at the sharp end are noticed first because they are committed by the person closest to the patient. The person may be literally holding scalpel or figuratively administering any kind of therapy (Collins 2014). Examples include:

- surgeon operating on the wrong leg;
- administration of the wrong antibiotic dose; and
- failure to act on test results

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Slips and Lapses

- Result of fatigue, stress and emotional or sensory distraction
  - Noise distraction resulting in wrong limb prepped
  - Antibiotic not administered – patient has SSI post-op
  - Suction not prepared - aspiration risk
  - Multiple interruptions - incomplete handover report

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Slips and lapses can occur during rote performance of routine tasks. They are often the result of fatigue, stress and emotional or sensory distraction. Examples include:

- wrong limb prepped – distractions;
- antibiotic not administered – resulting in surgical site infection;
- equipment not adequately prepared – fatigue/ distractions; and
- incomplete hand-over report – multiple interruptions

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Mistakes

Result of wrong choices, inexperience or procedural violations:
  - Deliberate -e.g. Refusal
  - Unintentional – forgetfulness or not paying attention to details

Examples:
  - Refusing to participate in briefing
  - Biopsy not fixed properly
  - Incomplete documentation

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Mistakes are the result of wrong choices, inexperience or procedural violations. They may be either deliberate (e.g. refusal) or unintentional (e.g. forgetfulness or not paying attention to details). Examples include:

- biopsy not fixed properly – not paying attention;
- In complete documentation of surgical procedure – forgetfulness; and
- Refusing to participate in briefing

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Corrective Actions

Latent errors
  - Update policies/ procedures /processes
  - Verify staffing and educational needs

Active errors
  - Understand the health care system
  - Isolate the cause

Slips and Lapses
  - Use checklists
  - Eliminate distractions

Mistakes
  - regular and mandatory education
  - re-education / remediation/ disciplinary action

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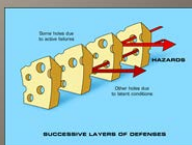
Addressing errors requires an understanding of the source of errors and providing successive layers of defences.

Corrective actions

Latent errors
- Requires an understanding of how the organization's culture as it relates to training, policies, procedures and quality initiative processes; and
- Supportive interaction with health care personnel

Active errors

- Understanding the work environment; and
- The cause of the error needs to be isolated from the error itself

Slips and lapses

- Use checklists to reducing variations in practise;
- Reduce variations in practice; and
- Eliminate distractions

Mistakes

- Regular and mandatory education; and
- In select situations re-education, remediation and disciplinary action may be indicated

Refer to PSEP – Canada Module 16: Canadian Incident Analysis Framework for complete details on the importance of incident analysis, the core concepts, and best practices.

Perioperative leaders need to be aware of potential patient safety incidents and with a focus on safety, implement a framework for a just culture. A culture of trust wherein events are reported, errors can be examined, conclusions reached and shared, and actions taken to prevent reoccurrences.

Application of the Swiss Cheese Model to the effectiveness of the surgical safety checklist identified that **latent errors** can be prevented by the use of the surgical safety checklist. Additionally, effective communication affects patient safety by preventing **active errors** in the Operating Room (Collins 2014).

The Surgical Safety Checklist has been a successful intervention (i.e. a slice of cheese) that reduces the reoccurrence of patient safety incidents in the Operating Room. Collins identifies fundamental requirements for successful implementation which include:

- engagement of stakeholders;
- a culture of trust;
- a shared vision of safety; and
- active communication

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Communication Failures

- Communication failures remain a leading cause of perioperative patient safety incidents
- Information lost in one phase of care can potentially compromise safety in a subsequent phase
- Identify Vulnerabilities:
  - Source
  - Transmission
  - Receiver

A consistent theme regarding patient safety incidents in the operating room is miscommunication. Studies show that problems in communication and information flow in the face of high workloads and competing tasks are significant risk factors in the operating room.

A team of researchers conducted a systematic review on surgical events using clinical studies published in peer reviewed journals incorporating 16,424 surgical patients. The conclusion was "errors in non-operative management caused more frequent adverse events than errors in surgical technique" (Anderson 2013).

A qualitative, semi-structured interview study entitled Failures in communication and information transfer across the surgical care pathway: interview study reported "information loss in one phase of care can potentially compromise safety in a subsequent phase".

The surgeon knows the planned trajectory of the patient from the pre-operative condition, expected outcomes and possible traps. A failure by the surgeon to develop that shared mental model in the rest of the team could be considered a failure of effective leadership.

Perioperative leaders need to understand the full surgical pathway of the patient to identify vulnerabilities and communication breakdowns. Any Information Transfer and Communication (ITC) failure involves three components:

1. the source
2. the transmission
3. the receiver

In order to map out the communication pathways consideration should be given to:

- Who is interfacing with the patient/ family / interpreter?
- Is there a communication barrier?
- How is information collected?
- Is the information collected comprehensive for the situation?
- Is the information collection following a standardized tool?
- How is it recorded?
- How is it communicated?
- Are there interruptions in the transfer of information?

With an understanding of the nature and scope of problems that exist, perioperative leaders can facilitate targeted interventions.

Slide 16

Work Environment Factors

"I think for things to happen the right way its got to be made easy for them to happen the right way.

And it has to be part of the way you do things.

If it is an add on ..it gets dropped …

Design ways of making sure that things are easy to follow for everybody….."

(Nagpal, 2012)

Surgical outcomes have traditionally been viewed as a function of patient comorbidities and procedural complexities with little attention given to the system in which care is delivered. This view is now changed over the past decade with other factors such as leadership, communication and teamwork having been shown to contribute to safety. In a study to explore Information Transfer and Communication (ITC) failures across the phases of the surgical pathway ,surgeons, nurses and anesthesiologists where interviewed (Nagpal 2012).

This quote from a surgeon on work environment factors identifies the value of a systems approach to perioperative care by providing tools that facilitate interventions and communications to be easy to do right and difficult to do wrong.

Strategies for improving Perioperative care

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Strategies for Improving Perioperative Care

- Implement Standardized Practices
- Education and Teamwork
- Integrate National Improvement programs
- Evaluate Care Delivery

Strategies to improve Perioperative Care require a review of current practices within the health care organization and the current recommendations for practice. Implementation of standardized practices reduces variations in practice, decreases the risk of error and workarounds. Perioperative standardized practices will include use of checklists, structured handover reports and policies to guide practice such as surgical site marking.

Education is required to ensure health care professionals are knowledgeable in these policies, practices and protocols, as well as new equipment and techniques.

Developing effective communication techniques and facilitating team training has demonstrated better performance and improved clinical outcomes. Some of these techniques will be discussed later in the module.

National evidence based improvement programs have been developed which integrate best practice to improve patient outcomes and reduce morbidity and mortality. There is no need to reinvent them. Those pertinent to the perioperative program will be introduced here. Health care agencies can have the quality improvement teams create a committee of key stakeholders to integrate these initiatives into daily practice.

A just culture of safety seeks ways to improve safety and protects patients, healthcare providers, and institutions. Quality initiatives require evaluation of practices. If you cannot measure it, you cannot improve it. All stakeholders need to be involved in the planning and evaluation of the practices/ protocols they implement.

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Communication Techniques

- Briefing/ Debriefing
- SBAR
- Assertive language/ critical language/ common language
- Closed loop communication
- Active listening
- Callouts
- Handoffs

In situations where specific and complex information must be communicated and responded to in a timely manner, combined with the dire consequences of omitting critical information, it is essential to add structure to the exchange. Such structure can ensure the right information is shared with the right people (Lo 2011).

Clarity in clinical situations can be achieved through clear communication. Listed here are recommended communication techniques and strategies.

- Briefing – sets tone for team interaction ensuring a shared mental model of what is going to happen, identify risk points and plan for contingencies; e.g. surgical checklist

- Debriefing- concise exchange after an event to identify what was learned and what can be improved upon; e.g. surgical checklist

- SBAR - sets up a conversation where specific relevant information is exchanged, e.g. Change in status or report for Nurse/ Physician encounters or care transitions

   S – Situation - establishes the situation

   B – Background - provides background information

   A - Assessment- patients current situation and status

   R – Recommendation – What needs to be addressed or action to be taken

- Assertive language - pleasant, persistent, timely, clear, repeat concern

- Critical language - assertive with a strategy to garner attention; critical language / key words agreed upon by team; non-threatening

- Common language- agreed upon common language by team

- Closed loop communications – 3-4 steps in which the receiver repeats information to verify it is correct, to be acknowledged or corrected by sender; information concise; used in critical settings e.g. medication ordering or naming of specimens

- Active listening – listening completely without framing a response. May repeat information to confirm ; e.g. care transition verbal report, physician requesting size of implant

- Callouts – clearly spoken phrases to indicate phase or process; e.g. calling time-out

- Handoff – **I Pass the Baton** to assist timely and accurate handoffs e.g. transition of care reports
  I – Introduce yourself and your role

  P – Identify patient: name, age
  A – Assessment current complaint, vital signs, symptoms and diagnosis
  S – Situation- Current status/circumstances, recent changes / response to treatment
  S – Safety concerns - Critical lab values /reports, socioeconomic factors, allergies/alert**s**

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  B – Background: co-morbidities, previous episodes, current medications and family history
  A – Actions – actions taken or required / rationale
  T – Timing – level of urgent/ timing of actions
  O – Ownership – who is responsible person/team
  N – Next – plan of care/ anticipated actions

These methods are effective tools for perioperative health care providers to review and practice. For further information please refer to PSEP – Canada Module 3: Communication: Building Understanding with Patients and Caregivers and PSEP – Canada Module 4: Teamwork: Being an Effective Team Member.

Teamwork

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Teamwork

- Common understanding
- Shared mental model of the patient, the procedure and the risks
- Empowers individuals to voice concerns
- Reduces chance of surgical error
- Improves efficiency

The definition of teamwork is a distinguishable set of two or more people who interact dynamically, interdependently, and adaptively toward a common and valued goal/objective/mission, who have been each assigned specific roles or functions to perform, and who have a limited life-span of membership (PSEP – Canada Module 4: Teamwork).

Team work requires a common understanding and a shared mental model of the patient, the procedure and risks. Additionally it empowers all health care providers to speak up to clarify key aspects of care. Members of a team must engage in both task work and teamwork processes to

achieve their common goal (Lo 2011). This is especially true for perioperative care as each profession (e.g. day-surgery nurse, scrub nurse, circulating nurse, anesthesiologist, surgeon, post-anesthesia care unit nurse) have individual responsibilities to provide safe care to the patient either pre-operatively, intra-operatively, and postoperatively. As a team these individuals will (through briefings, debriefings, timeouts, transitions of care reporting) collectively discuss positive patient identification, verification of surgical procedures and sites, data collection, observations, key components of care, patient specific needs and act on these discussions. This process needs to be conducted in an environment of mutual respect with an underlying mission of patient safety.

Breakdowns in multidisciplinary team communication in the Operating Room (OR) are reported as the most common contributing factor towards the occurrences of wrong site surgery and other surgical adverse events. By promoting direct verbal communication and interaction, checklists aim to open the lines of communication between OR team members to ensure a common understanding, a shared mental model of the patient, procedures, risks and to empower individuals to voice safety concerns who might otherwise not feel able to do so (Russ 2013).

Part of the surgical safety checklist is to introduce all team members in the operating room. This facilitates clarity for each person's role during the surgical intervention. It promotes an individual's sense of participation and increases an individual's sense to speak up for clarity or if they anticipate or detect a problem (Russ 2013). All members of the team can help achieve a strong team through education in effective communication techniques such as assertive language, closed loop communications, and team training for critical situations.

An evaluation of team training in trauma teams found they became more effective and that improved leadership skills were associated with improved clinical outcomes. See PSEP – Canada Module 4: Teamwork: Being an Effective Team Member for additional information on Teamwork.

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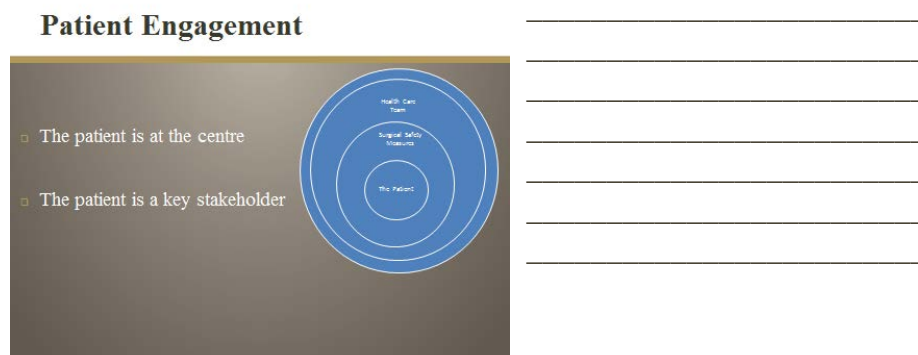
Working in partnership and ensuring effective communication in perioperative care includes engaging the patient/ family in their individual care whenever and wherever possible. The patient is part of the team - a stakeholder who must be respected and whose voice must be heard.

Patients are encouraged to take an active role in their own healthcare. Services should be provided in a collaborative team environment where the team works with clients and their families (Accreditation Canada 2015).

Examples of patient engagement include asking the patient to:

- verify home medications and allergies – to assist in the Medication Reconciliation process;
- verify their name and date of birth – Positive Patient Identification at transitions of care (arrival to hospital, as part of the briefing in the operating room) which is verified against the chart and armband (true validation of two unique identifiers);

- verify the surgical procedure; and
- verify the surgical site

Tools are now being developed by many centres to educate and explain to patients about surgical markings, the verification processes involved in surgical care including the briefing and timeout. Refer to Module 7a: Patients as Partners: Engaging Patients and Families: Patient and Family Centred Care for further information on the importance and necessity of engaging patients.

Standardized processes

Slide 21

Surgical Site Marking

- Cases of laterality, multiple structures, multiple levels
- Surgeon signs site in consultation with the patient
- Mark is at or next to operative site
- Non operative sites are **NOT** marked
- Facilitates verification with other team members, throughout the surgical pathway

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Surgical site marking at the point of incision by the surgeon is a patient safety initiative that protects the patient from wrong site surgery. This practice is endorsed by surgical societies, perioperative nursing standards and national accreditation standards including the World Health Organization's Guidelines for Safe Surgery 2009, ORNAC Standards 2013 and the Perioperative Services and Invasive Procedures Standards Accreditation Canada 2015.

The Canadian Orthopedic Association developed an "Operate Through Your Initials" program in 1994 where the surgeon marks his or her initials on the incision site at the preoperative patient interview.

Marking the surgical site is a method to help avoid wrong site surgery, but ensuring consistent practices regarding marking the site is critical (Accreditation Canada 2015). Verify that the surgeon has marked the surgical site (if applicable) prior to admission to the operating room. The operative site shall be marked, so that the 'marking' is visible after prepping and draping (ORNAC 2013).

Surgical sites are marked by the surgeon while the client is conscious and with the input of the client (Accreditation Canada 2015).

Surgical site marking is particularly important in cases of laterality, multiple structures (e.g. fingers, toes, ribs) and multiple levels (vertebral column). WHO protocol stipulates that the marking must be:

- at or next to the operative site; non operative sites should **not** be marked;
- unambiguous, clearly visible and made with a permanent marker;
- made by the surgeon performing the procedure; and
- completed while the patient is alert and awake, as the patient's involvement is important

Surgical marking is a critical step to facilitate safety by all team members throughout the surgical pathway. Team members can proceed with interventions and follow both the consent and the

surgical site marking as validations of the surgical site. Care provided by team members other than the surgeon can include hair removal, unilateral anaesthetic block, pneumatic tourniquet application, antimicrobial skin preparation.

Multiple checks closes the "swiss cheese" potential for harm and reduces the chance of error as verification checks of the surgical site occur at various intervals including: on arrival to the operating room, at the briefing and at the time out.

Identification and verification of the site is a team responsibility (Accreditation Canada 2015). This statement reinforces the need for team engagement at transitions of care and during specific phases of the surgical safety checklist.

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Checklists

- "Shared mental model"
- Fosters interprofessional teamwork and communication
- Core safety checks
- Reinforces and standardizes accepted safety procedures
- Improves adherence to approved clinical practices
- Reduces avoidable morbidity and mortality rates

The use of checklists intercepts many potentially harmful incidents across all stages of the patient's surgical pathway. A study on the nature and timing of incidents intercepted by the SURPASS checklist in surgical patients demonstrated one or more intercepted incidents in approximately 40.6% of patients with most being intercepted in the preoperative and postoperative phases. In accordance with Reasons Swiss cheese (the more layers of safety, the smaller the chance of trajectory of error) it seems best not to perform all safety checks at one stage but to spread them out, performing checks early in the surgical pathway, so incidents can be intercepted and corrected at an earlier stage (De Vries 2012).

Interprofessional checklists reduced the number of communication failures and promote proactive and collaborative team communications (Lingard 2008).

Checklists such as the Surgical Safety checklist, open the lines of communication between OR team members to ensure a common understanding or "shared mental model" of the patient, the procedure, and risks. The use of checklists during transitions in care guide communication and help to ensure patient specifics and key elements of care are addressed.

In a systematic review of 20 articles looking at whether checklists improve teamwork and communication in the operating room, it was noted that checklists are increasingly becoming part of routine practices for ensuring safety in ORs and their use is linked to improved rates of Mortality and Morbidity. Further the systematic review revealed:

- self perceptions of teamwork and communication improved following the implementation of checklists;
- there was a reduction in visible consequences of poor communication and near misses associated with communication errors after the checklist implementation; and
- checklists improved teamwork, revealed knowledge gaps, encouraged articulation of concerns and provoking a change in care plans. Support interdisciplinary decision making ….enhancing team feeling.

Slide 23

Checklists ...A Note of Caution

If checklist are used sub- optimally or when individuals have not bought into the process, checklists can have a negative impact.

A word of note when checklists are carried out poorly or lacking engagement, not only will checklists have the potential to disrupt team function but may also send a message that it is not a priority to improve communication. This needs to be acknowledged and monitored at an early stage of the implementation strategy.

Therefore, how a checklist is designed and implemented requires a strategic approach with significant input from all stakeholders. Perioperative leaders need to be aware of the pitfalls of introducing protocols without sufficient discussion. Ensure stakeholders are involved in the development process. Additionally, evaluation is required and the results, as well as follow-up action plans again require input from stakeholders including the patients themselves.

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Surgical Safety Checklist

In 2009 Haynes et al published "A Surgical Safety Checklist to Reduce Morbidity and Mortality in a Global Population" in the New England Journal of Medicine. They demonstrate that a 19 item checklist designed to improve team communication and consistency of care resulted in reduced complications and death associated with surgery for approximately 3950 patients in 8 countries. The results of that study demonstrated the rate of complications decreased from 11% - 7.0% and the in hospital death rate dropped from 1.5% - 0.8%; and post-op complications rates fell by 36%.

The surgical safety checklist has since become a standard of practice worldwide, endorsed by associations, governments, the World Health Organization and is a Required Organizational Practice (ROP) in the Perioperative services and Invasive procedures, Accreditation Canada Standards 2015.

Surgical procedures are increasingly complex aspects of health services and carry a significant risk of potentially avoidable harm. Safe surgery checklist can reduce the likelihood of complications following surgery and often improve surgical outcomes.

The Accreditation Canada 2015 tests for compliance for the Safe Surgery Checklist ROP include:

1. The team has agreed on a three phase checklist to be used for all surgical procedures performed in an operating room;
2. The checklist is used for every procedure;
3. There is a process to monitor compliance with the checklist;
4. The use of the checklist is evaluated and results are shared with the team; and
5. Results are used to improve the implementation and expand the use of the checklist.

In the adoption/ development of the surgical safety checklist perioperative leaders need to ensure that those who will use the checklist are involved in this process improvement initiative. Engagement of all team members is required for successful implementation. A growing surgical base supports that safety checklists substantially improve adherence to appropriate clinical practices (e.g. antibiotic prophylaxis, DVT prophylaxis) which in turn decrease morbidity and mortality. Optimization of safety checklists in surgery should be a priority for the prevention of surgical error. How a checklist is designed and implemented requires a strategic approach with significant input and leadership from surgeons and other health care professionals (Russ 2013).There are different versions of the checklist published as some organizations have modified the checklist to facilitate flow within their organization.

This Surgical Safety Checklist is included in the CPSI How-to Guide for implementing the surgical safety checklist. The How to Guide provides direction to the health care facility on the steps to consider in preparing to use the Checklist in your Operating Room and a detailed explanation of the Surgical Safety Checklist items. There are also additional linkages provided to support a health care facility. Here is an overview of the three phases; each of the three phases verifies key elements of care:

The Briefing – prior to starting induction of anesthetic and surgical preparation

- Positive patient identification is critical (*the patient* can be engaged in this phase);
- Use 2 *unique* patient identifiers (*full* name, and a second usually determined by the organization e.g. date of birth or hospital number);
- Verification of the procedure to be performed
    - identification of the correct surgical site /side(s);
- Patient allergies / special needs/ limitations;
- Verification of investigations completed/ abnormalities noted/ Imaging requirements;
- Anesthesia requirements (e.g. special equipment, blood products);
- Surgical requirements (e.g. surgical position, special equipment, implants);
- Nursing requirements (e.g. equipment needs/ verification, special precautions);
- Prophylaxis requirements (antibiotic, venous thromboembolism); and
- An opportunity for the team to add/ clarify additional information.

The Time-out – just prior to cut / intervention

- Verification of team members in room and names/ roles;
- Verification of positive patient and surgery/ intervention to be performed;
- Verification of antibiotic administered; and
- Any questions or concerns by any team members.

The Debriefing - before the patient leaves the OR (completion / verifications of paperwork and post-op plan of care; preparation to ensuring accurate transfer of information)

- Verification of actual surgical procedure(s) performed (Surgeon)
- Blood loss verification (team)
- Acknowledgement of Surgical Counts and Specimens (Nurse & Surgeon)
- Post op care needs / destination (entire team)

The World Health Organization (WHO) also produced a short video 3.17 minutes entitled "How to perform the checklist" that can be found in the Resources section.

Slide 25

Safe Surgical Checklist

"The checklist should be understood not merely as a list of items to be checked off but as an instrument for the improvement of communication and safety culture in the operating room, and it should be implemented accordingly."

(Fudickar 2012)

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The checklist has been under scrutiny by naysayers and papers published on its value. As discussed throughout this module errors are occurring in perioperative care and the surgical safety checklist has been proven to improve patient outcomes through effective communications and teamwork.

Inclusion of leadership teams and key stakeholders (surgeons, anesthesiologists, and nurses, those that touch the patient) is required in the development, implementation, and evaluation of this initiative.

The checklist should be understood not merely as a list of items to be checked off but as an instrument for the improvement of communication and safety culture in the operating room, and it should be implemented accordingly (Fudickar 2012).

A Meta-analysis of surgical safety checklists identified that the use of a surgical safety checklist reduced morbidity and mortality, and improved teamwork, communication and compliance with safety measures in operating rooms (Lyons 2014).

Slide 26

Care Transitions

- Handover Reports
- Pre-operative/ Intraoperative / Postoperative
- Standardized format/ form
- Ensure attention of receivers (Sterile cockpit approach)
- Ensure all relevant team members present
- Verify if clarification required

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Patient handovers are defined as the transfer of information and professional responsibility between individuals and teams. On a surgical day an elective perioperative patient will interact with several departments within a health care facility, all in a matter of hours; day surgery, operating room, recovery room, receiving nursing unit (day surgery, nursing unit, intensive care). Additionally the patient will interact with numerous health care professionals of varying disciplines each conducting assessments and /or providing interventions. Data on the patient will also have been collected and recorded during a pre-operative assessment at a preadmission clinic again, with various disciplines interacting with the patient.

Handover failures are common and can lead to diagnostic and therapeutic delays and precipitate patient safety incidents. In a systematic review handovers were characterized by fragmented information transfer and one reported only 56% of essential information was transferred to Post Anesthetic Care Unit staff. Several recommendations resulted from this systematic review:

- Standardizing postoperative handovers can improve patient care by ensuring information completeness and accuracy and increasing efficiency of the process;
- Use of checklists to guide communication and protocols to structure clinical activities is advocated;
- To ensure the attention of team members, complete urgent tasks before the information transfer, limit conversations, and allow only patient specific discussions during the handover (a sterile cockpit approach);
- All relevant team members should be present and have an opportunity to ask questions; and
- Additionally formal team and handover training is beneficial to enhance patient safety.

These recommendations can be used by perioperative leaders to plan and educate health care providers. Two effective structured communication techniques for care transitions discussed earlier in this module are SBAR and I Pass the Baton.

Slide 27

Established Patient Safety Initiatives

CPSI Getting Started Kits:
- Prevent Surgical Site Infections
- VTE Prophylaxis
- Medication Reconciliation in Acute Care

The Canadian Patient Safety Institute has developed several Safer Healthcare Now! Getting Started Kits that provide evidence supported best practices. These three are directly linked to perioperative care and should be implemented to optimize patient outcomes and reduce morbidity and mortality:

1. Prevent Surgical Site Infections
2. VTE Prophylaxis
3. Medication Reconciliation in Acute Care

The toolkits provide clinical support with standardized protocols and measurement tools. The links to each of these are listed in the toolkits in the reference section of this module.

Another resource to assist with implementing change is the Safer Healthcare Now! Improvement frameworks: Getting Started Kit which highlights the Institute for Healthcare Improvement's (IHI) Model for Improvement as a simple yet effective tool. The Improvement Model has two parts; the first contains three fundamental questions:

1. What are we trying to accomplish?
2. How will we know that a change is an improvement?
3. What changes can we make that will result in improvement?

The second part focuses on using the Plan-Do-Act-Study (PDSA) cycle to test and implement changes in real work settings. It guides the test of a change to determine if the change is an improvement.

Detailed descriptions of these processes are outlined in the toolkits referenced at the end of the module. As well, please refer to PSEP – Canada Module 9: Methods for Improving Safety for further information and resources.

Prevent surgical site infections (SSI)

Slide 28

Preventing Surgical Site Infections

- Perioperative Antimicrobial Coverage
- Appropriate Hair Removal
- Management of Perioperative Glucose Control
- Perioperative Normothermia
- Recognize and respond to individualized patient risk factors

The Safer Healthcare Now! Getting Started Kit (GSK) for Surgical Site Infections (SSI) identifies surgical site infections as the most common healthcare associated infection among surgical patients, with 77 per cent of patient deaths reported to be related to infection.

The evidence based strategies recommended to reduce SSI are:

1. Perioperative Antimicrobial Coverage;

    a. Appropriate Use of Prophylactic Antibiotics

        i. Indication

        ii. Choice

        iii. Appropriate Dosing

        iv. Timing/ Duration

        v. Special considerations are addressed including C- Sections, tourniquet applications, trauma

    b. Antiseptic Prophylaxis

    c. Decolonization

    d.   Antimicrobial sutures

2. Appropriate Hair Removal;

3. Management of Perioperative Glucose Control;

4. Perioperative Normothermia; and

5. Recognize and respond to individualized patient risk factors of obesity, diabetes, smoking, malnutrition, pre-existing body site infection and OR environment issues.

Antibiotic prophylaxis is one of the key components in the Canadian Surgical Safety Checklist (SSCL) to reduce the risk of surgical site infections.

See the References section for the GSK Prevent Surgical site Infections 2014 video clip by Canadian Patient Safety Institute (CPSI).

Venous thromboembolism (VTE) prophylaxis

Slide 29

Venous Thromboembolism (VTE) Prophylaxis

- Organization-wide
- Clients are identified and receive evidence based prophylaxis
- Implement measurement methods
- Identify and provide appropriate post-discharge prophylaxis
- Provide information to health professionals and clients

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Venous thromboembolism (VTE) comprises both deep vein thrombosis (DVT) and pulmonary embolism (PE) and is one of the most common and preventable complications of hospitalization. Despite overwhelming evidence for efficacy of VTE prophylaxis, omission or inappropriate prophylaxis is still a major safety concern.

The GSK VTE Improvement Guide provides the recommendations to ensure patients receive the best possible VTE prophylaxis:

1. An organization-wide, written thromboprophylaxis policy or guideline is in place.
   - Design
   - Field testing
   - Implementation
   - Evaluate, review, and adjust
2. Clients at risk for VTE are identified and receive appropriate, evidence-based VTE prophylaxis.
   - Risk Assessment of Patients
   - Development of Order Sets
   - Computerized Reminder System
3. Measurement (including audits) of appropriate thromboprophylaxis is in place and used to inform improvement efforts.

4. Mechanisms to identify and provide appropriate post-discharge prophylaxis are in place for major orthopedic surgery clients (hip and knee replacements, hip fracture surgery).
5. Information about the risks of VTE and its prevention is available to health professionals and clients.

The toolkit provides a comprehensive chart identifying recommended thromboprophylaxis options for various patient groups. It includes:

- varying interventions for minimal, usual, and high risk patients as well as contraindications
- indications for specific pharmacological administrations
- indications for mechanical methods (graduated compressive stockings and intermittent pneumatic compression, venous foot pump).

VTE prophylaxis is one of the key components of the briefing on the Canadian Surgical Safety Checklist (SSCL) to address prophylaxis and reduce the risk of VTE in the surgical patient.

Medication reconciliation in acute care

Slide 30

Medication Reconciliation in Acute Care

- Create a complete and accurate Best Possible Medication History (BPMH)
- Reconcile Medications
- Document and Communicate any resulting changes to all stakeholders

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As a patient enters an organization to begin their perioperative journey, the medication reconciliation process provides valuable information to healthcare professionals throughout the patient's surgical pathway. Several care transitions will occur during the journey and the need for an accurate and updated medication history and reconciliation will be required during these transitions.

Surgical patients are at a considerable risk of experiencing one or more adverse drug events during their admission (de Boer, Monica 2013).

A Best Possible Medication History (BPMH) is generated in partnership with clients, families or care givers (as appropriate) and used to reconcile client medications at care transitions (Accreditation Canada Perioperative Services and Invasive Procedures Standards, 2015). The Accreditation Canada standards provide guidelines as well as 5 key tests for compliance for the medication reconciliation process.

Medication Reconciliation is a formal process in which healthcare providers work together with patients, families and care providers to ensure accurate and comprehensive medication information is communicated consistently across transitions of care. Medication reconciliation requires a systematic and comprehensive review of all the medications a patient is taking to ensure that medications being added, changed or discontinued are carefully evaluated.

Medication Reconciliation in an acute care setting is a three-step process:

1. Create a complete and accurate Best Possible Medication History (BPMH) of the patient's medications including name, dosage, route and frequency. This includes:
   - a systematic process of interviewing the patient/family;
   - a review of at least one other reliable source of information; and
   - flag patients with incomplete medication history.
2. Reconcile medications: Use the BPMH to:
   a. create admission orders or compare the BPMH against admission, transfer or discharge medication orders;
   b. identify and resolve all differences or discrepancies.
3. Document and communicate any resulting changes in medication orders to the patient, family/caregiver and to the next provider of care.

Medication reconciliation is a key component of perioperative care throughout all phases of the patients care and must be included in checklists with clear documentation at all care transitions including:

- pre admission clinic;
- DaySurgery/ nursing unit;
- operating room;
- recovery room;
- phase 2 recovery/ nursing unit/ ICU; and
- discharge.

See PSEP – Canada Module 14: Medication Reconciliation and the Getting Started Kit Medication Reconciliation 2011 for further information and resources.

Education and evaluation

Slide 31

Education

Video
Teamwork And Communication Training Yield More Success In Operating Rooms

https://www.youtube.com/watch?v=IOpIubq6j-I

This 1 ½ minute video demonstrates the value of both team training and the effectiveness of the surgical checklist as it relates to positive patient outcomes. It can be an effective teaching aid.

https://www.youtube.com/watch?v=IOpIubq6j-I

Slide 32

Education and Quality

Education and quality are interlinked. Thoughtful planning in developing systems of care delivery through optimizing and leveraging the knowledge of the team members that provide care is the single most important defense against medical errors (Cima 2012).

Clinical experts (surgeons, anesthesiologists, nurses) are trained in their respective disciplines to become experts in their field. Health care facilities need to ensure latent errors do not occur due to lack of education on policies, expectations and protocols. Leaders in their respective disciplines need to demonstrate a willingness to flatten the hierarchy of the healthcare domain and be open to new protocol and processes. Additionally, as new protocols and processes are introduced healthcare providers need to be educated in the new ways. Ways to facilitate education and success in quality initiatives include those listed below.

- Structured training – evidence shows that new initiatives often fail due to poor planning, no trial, and ineffective education. Structured education with a plan of engagement and evaluations are key to success. Organizations need to adapt action plans to their organizations and not just adopt another organization's "as is"
  - Factors that aided effective use of the checklist included exemplary implementation by team leaders and structured training
- Engagement of key stakeholders - hear and implement suggestions from champions, including patients
- Provide supportive cues - posters, change documentation tools to reflect new protocols
- Team training (including multidisciplinary) for new protocols and crisis management

Trauma teams incorporating simulated team training have been found to be more effective and improved leadership skills were associated with improved clinical outcomes. Team training in these skills and adoption of formalized processes for transfer of care are excellent safety techniques to communication. Formal team and handover training is beneficial to enhance patient safety.

Joint Morbidity & Mortality rounds embrace a team approach. They provide a forum for auditing surgical complications and are necessary for improving practice in a surgical department. These meetings should be considered a core activity for the entire surgical team, including the technicians and managers as well as the clinicians (medical, nursing, pharmacy and allied health).

Quality Improvement (QI) is the science of disseminating and sustaining improvement. Research based evidence **can** transfer to practice and evidence based care. The key focus is solving the implementation issues that stand between our knowledge of **"what works"** and our ability to **reliably provide** this standard of care for all patients. One method is small tests of change or the Plan/Do Study/Act (PDSA) cycle and build on results of these small tests of change, for example

when implementing a checklist. To achieve results the key stake holders need an opportunity to provide input, here the results and be engaged in the change processes.

It is important to remember that individual health care workers who touch patients can, and do change health care. Multidisciplinary teams are required for QI initiatives to monitor and evaluate key safety processes within the perioperative program.

Another important component of QI initiatives is measurement. If you cannot measure it, you cannot improve it. Use your **own data** to measure **your** QI initiatives and post the results. Comparing endpoints across sectors can be misleading as everyone does not measure the same. A shared mental model of quality improvement initiatives and measurements requires a culture that builds expectations of performance standards into daily work practices plans.

Please refer to PSEP – Canada Module 9: Methods for Improving Safety for further information and resources.

Summary

Slide 33

Summary

A Perioperative Safety Paradigm

The responsibility for surgical safety has to transition from being a team of individuals experts to becoming an expert team !!

(Cima 2013)

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A safety paradigm is needed for perioperative teams to provide the safest possible care to each patient. We need not only to come in as highly trained within our respective disciplines but become an expert team.

A team with respect for all members and with a common understanding, a shared mental model of the patient, the procedure and risks and a willingness to use the evidence based initiatives to address safety risks will ensure the safest possible outcomes for patient care. Safe care is achieved when:

- There is the ability to summarize and simplify what you do;
- There is measuring of outcomes and feedback provided on the outcomes ; and
- A safety culture is improved upon by building expectations of performance standards into work processes

Potential pitfalls

Potential pitfalls

- Checklists carried out poorly
- Lack of engagement
- Incomplete handover reports
- Uninformed health care professionals

One of the potential pitfalls is when introducing new protocol or practices, key stakeholders may not have been involved in the development or evaluation of the initiative. The importance of engaging key stakeholders at the very beginning of an improvement initiative to ensure success has been well documented in the literature.

When the checklist is used sub optimally or when individuals have not bought into the process checklists may conversely have a negative impact on the function of the team (Russ 2013). Faulty implementations can foster a dangerous false sense of security and thus convert the positive effect of the checklist to the opposite (Fudickar 2012).

Disengagement and interruptions lead to active errors. Use of effective communication techniques facilitate engagement of all team members and call attention to the discussion of care in a clear concise manner. Not allowing for interruptions (sterile cockpit) at key communication times is an effective method to be developed in organizations.

Information loss in one phase of care can potentially compromise safety in subsequent phases of care. Handover reports and checklists that follow a standardized process will assist health care professionals in facilitating safe care.

Initiatives will only be successful when the education is provided in an interactive manner using a process improvement methodology. Team members need to be engaged in change processes.

Pearls

Pearls

- Shared Mental Model- Respectful Teams
- Patient Focused Care
- Toolkits are available
- Identify and Engage Champions

1. A team requires a shared vision, a shared mental model of patient focused care including ensuring patient engagement.

2. Adopt endorsed guidelines and toolkits which are available for most healthcare conditions.

3. Put effort into engaging with healthcare professionals before implementation of standardized practices and protocols. All members need to be on board and understand the reasons for the guidelines.

4. Identify senior, well-respected surgeons and nurses in the hospital and work with them to bring others on board. A strong safety culture is achieved when surgical, anesthesia, and/or nurse champions assist with implementation of new initiatives.

Tool kits and outcome measures

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Principal message

The single most important message your audience should come away with is that a team with respect for all members and with a common understanding, a shared mental model of the patient, the procedure and risks and a willingness to use the evidence based initiatives to address safety risks will ensure the safest possible outcomes for the perioperative patient.

Module overview

The term 'Perioperative' refers to the preoperative, intraoperative and postoperative phases of the patient's surgical journey. When a patient enters the hospital for surgery the outcome is not only about the actual surgery but a series of events leading up to, during and after the surgery. This module will discuss perioperative care and its complexities, the value of teamwork, effective communication, and standardized practices and protocols that provide safe patient care.

Preparing for a presentation

1. Assess the needs of your audience

Choose from the material provided in the module according to the needs of your expected participants. It is better for participants to come away with a few new pieces of information, well learned, than to come away with a deluge of information from which they can remember little or nothing.

2. Presentation timing

The suggested timing for each part of this module is:

Introduction	2-3 minutes
Trigger tape & discussion	5-7 minutes
Presentation	30 minutes
Debrief about teaching methods	5 minutes
Summary	2-3 minutes
Evaluation	5 minutes
Total	49-53 minutes

3. Number of slides: 35

4. Preparing your presentation

The text in the module was not designed to be used as a prepared speech. Instead, the text provides material you may want to use. The slides have been designed to trigger your presentation. Although the slides closely follow the text of the syllabus, they do not contain all of the content. Their use presumes that you have mastered the content.

You may want to make notes on the slide summary pages to help you prepare your talk in more detail and provide you with notes to follow during your presentation.

Remember that you can adjust the slides to suit your presentation content, your style, and to make it feel fully familiar and your own.

Practice your presentation using the slides you have chosen, and speaking to yourself in the kind of language you expect to use, until it is smooth and interesting and takes the right amount of time. The most accomplished presenters and teachers still practice prior to a presentation; don't miss this step.

5. Preparing a handout for participants

The module text and slides in the **Participant's Handbook** were designed to be reproduced and provided to participants as a handout. Take the portion you need; they can be used in their entirety, module by module, or for just one specific topic. Please include the following in each set of handouts:

- **PSEP – Canada Front Cover Page**;
- **PSEP – Canada Acknowledgment Pages** (to acknowledge the source of the material);
- syllabus and slides for **your topic**; and
- appendix material as relevant.

6. Equipment needs

- Computer, projector and screen
- Flipchart or whiteboard and markers for recording discussion points

Test your equipment beforehand to ensure that it works.

Review your video segments to assess which videos or portions you would like to use.

Have a back-up plan so that if there is any equipment failure you can move without panic to your back-up plan. For instance, have in mind that:

- if the video fails, you can read the vignette of the trigger tape story;
- if the slides cannot be shown, you can refer to the hand out slides; and

- if flipcharts and markers are not available, you can have participants list items on their hand outs that you would have written up for all to see.

Making the presentation

1. Introduce yourself

If you have not already done so, introduce yourself. Include your name, title, and the organization(s) you work for. Briefly describe your professional experience related to the information you will be presenting.

2. Introduce the topic

Show the title slide for the module. To establish the context for the session, make a few broad statements about the importance of topic as a patient safety matter. Tell participants the format and time you will take to present the session. Identify the teaching styles that you intend to use.

3. Review the session objectives

Show the slide with the session objectives listed. Read each objective and indicate those that you are planning to emphasize.

4. Show the trigger tape

After reviewing the objectives for the session, show the trigger tape. It has been designed to engage the audience and provide an appropriate clinical context for the session. It was not designed to demonstrate an ideal interaction, but to "trigger" discussion.

Trigger tape content

A patient's spouse suspects that a wrong-site surgical procedure is about to be performed on his wife. When he brings this fear to the nurse's attention, the sources of this type of adverse event are revealed.

Keep in mind that the facilitator may choose to use any one of the trigger tapes for this cluster of modules. Since the vignettes are rich and overlap in their teaching points, it may make sense to do this, for instance if an audience has seen the trigger tape already or if a trigger tape from another module is easier for the audience to identify with.

A teachable moment: discussion after the trigger tape

After the trigger tape, ask the participants for their comments about the issues and the interaction they have just seen. To affirm what they contribute, consider recording the important points on a flipchart or whiteboard.

If the discussion is slow to start, you may want to ask more direct questions, like:

- What is challenging regarding perioperative care?
- Has a patient ever had something like this happen in your institution? What did you / your colleagues do?
- How common do you think surgical care mishaps are?

Use the discussion to set the stage for the material to follow. Do not let the discussion focus on a critique of the technical quality of the video or how "real" the players seemed. If the participants do not like something that was said or done in the video, acknowledge that there is always room for improvement and ask them how they would do it themselves.

Setting limits to discussion time

It is usually best to limit discussion of the video to no more than five minutes, then move on to the presentation. To help move on if the discussion is very engaged, try saying something like:

- let's hear two last points before we move on, and
- now that you have raised many of the tough questions, let's see how many practical answers we can find.

For the more advanced facilitator who is very confident of both the patient safety material and his or her pedagogic skills, it is possible to use the trigger tape as a form of case-based teaching and to facilitate the discussion to draw out the teaching points of the module. The hazard of this approach is that the discussion will not yield the desired teaching points. Feel free to return to the slides if this happens. If this approach is used, it is essential to write up the points on a flip chart as they arise, to fill in any gaps and to summarize at the end. Again, use this method with caution and only if you are really ready.

5. Present the material

Recommended style: Interactive lecture

An interactive lecture will permit you to engage your audience, yet cover your chosen material within the time. You can use as your interactive components the trigger tape stimulated discussion, perhaps with some resulting case-based teaching, and an interactive exercise.

Ask the participants about their major concerns regarding perioperative care are and ask them to give you a case from their institution or experience. Once you find a case that resonates with the group, you may choose a focus. Have a back up case from your own experience in case you there are reasons to not go into the ones from the audience. Choose the focus so that you can deliver specific content you have prepared.

Interactive exercise

Use the Canadian Patient Safety Institute **Safe Surgery Saves Lives (SSSL)** Surgical Safety Checklist: The How-To Guide (Please note that this is only a suggested toolkit, you may use any toolkit from the list provided at the end of the module.) Ask your participants to work in small groups and discuss how these tools could be used in their institution to ensure successful procedures and to track compliance and patient outcomes.

When the groups have completed the task, invite them to comment on:

- what they liked and disliked about the tool;
- what information is useful to track and how it can be used to improve patient outcomes; and
- how they would implement this tool within their institution and how it could be improved.

Alternative style: case based teaching

Summarize the steps for perioperative care either by using slides that can stay on the screen or by listing them on a flipchart. Then, introduce a case based discussion focused so that everyone is aware of the objective of the discussion.

Ask participants to divide into small groups of five to six. Continue the interaction for about ten minutes. Then, stop and ask each participant to comment on the discussion. The following questions may help to guide the feedback:

- Did the discussion reflect what happens in your institution?
- Did the discussion bring out the main issues for surgical care?
- What points should be emphasized during the discussion?

After the small group discussion (total 15 minutes), lead the larger group in a discussion of their experiences. Use a flipchart to capture the important discussion points. Use the discussion to interweave the key take-home points from the syllabus.

6. Key take-home points

1. Do not reinvent the wheel. There are many endorsed guidelines available for most healthcare conditions.
2. Put effort into engaging with healthcare professionals before implementation. All members need to be on board and understand the reasons for the guidelines.
3. Identify senior, well-respected surgeons and nurses in the hospital and work with them to bring others on board.
4. Never implement a guideline without sufficient preparation.
5. Always involve the surgeons in selecting the protocol and the implementation process.

7. Summarize the discussion

Briefly, review each part of the presentation. Recap two or three of the most important points that were discussed.

8. Debrief about the teaching method

Tell the group that it is time to consider the teaching method used, how it worked and what its limitations were. Ask them what other methods might work, and what methods would work best *for the topic* in their home institutions. Ask them to consider what method would work best *for themselves as facilitators* and for their *target audience*.