Surgical Education and Assessment Modules (SEAM) - Peri-Operative Care

Module Overview

<table>
<tr><td>Rationale</td><td colspan="3">This module has been designed to introduce you to the Peri-operative care of the patient. It builds on your baseline knowledge and experience of the peri-operative period.

As a general surgeon you will require an adequate knowledge of theatre protocols, including an understanding of your role within the theatre team. You are expected to observe and employ certain standards of behaviour in yourself and with others in the team, and should recognise the impact of poor team communication on patient outcomes, the importance of documentation for patient outcomes, and the relationship between surgeons, anaesthetists, and nursing staff.</td></tr>
<tr><td>Learning Objectives</td><td colspan="3">By the end of this module you should be able to:

1. Apply the principles of decontamination, disinfection, and sterilisation in the appropriate clinical situations
2. Establish and maintain a sterile surgical field
3. Recognise specific hazards and risks to staff within the operating theatre environment, and choose appropriate strategies to mitigate these
4. Recognise the role of ‘check-lists’, documentation, and clinical handover in safe surgical practice
5. Recognise the needs and requirements of the anaesthetist, and basic anaesthesia practices
6. Manage fluid balance in normal physiology, as well as in pathological states</td></tr>
<tr><td rowspan="6">Topics and keywords</td><td>Topic</td><td colspan="2">Keywords</td></tr>
<tr><td>Infection Control</td><td colspan="2">SSIs, hand hygiene, decontamination, disinfection,, sterilisation, aseptic technique, personal protective equipment, draping, skin preparation</td></tr>
<tr><td>Occupational Safety</td><td colspan="2">surgical hazards, prevention strategies, needlestick injury, bodily fluids exposure, personal protective equipment, smoke safety, radiation safety, cytotoxics</td></tr>
<tr><td>Documentation</td><td colspan="2">operating reports, consent, surgical safety checklists</td></tr>
<tr><td>Anaesthesia</td><td colspan="2">risks, ASA classification, triad of anaesthesia, adrenaline, toxicity</td></tr>
<tr><td>Fluid Balance (Electrolyte Disorders)</td><td colspan="2">normal physiology, gastrointestinal secretions, replacement fluids, pathological states</td></tr>
<tr><td rowspan="3">Recommended Further Reading</td><td colspan="3">Educational material provided within this module is not intended to be complete, and is not a textbook. Trainees are expected to undertake further reading in order to complete the module successfully.</td></tr>
<tr><td colspan="2">Recommended Reading</td><td>Learning Objective</td></tr>
<tr><td colspan="2">Anderson, D. J., MD, MPH. (2011). Surgical site infections. Infectious Disease Clinics of North America, 25(1), 135-153. doi:10.1016/j.idc.2010.11.004</td><td>1</td></tr>
</table>

Surgical Education and Assessment Modules (SEAM) - Peri-Operative Care

Module Overview

Recommended Further Reading	Australian and New Zealand College of Anaesthetists (ANZCA). *Different Procedures*. http://www.anzca.edu.au/patients/different-procedures	5
	Australian Commission on Safety and Quality in Health Care (2008). *Ensuring Correct Patient, Correct Site, Correct Procedure Protocol for Surgery: Review of implementation and proposals for action.* https://www.safetyandquality.gov.au/publications/ensuring-correct-patient-correct-site-correct-procedure-protocol-for-surgery-review-of-implementation-and-proposals-for-action/	4
	Australian Radiation Protection and Nuclear Safety Agency (2008). *Safety Guide: Radiation Protection in Diagnostic and Interventional Radiology*, pp.35-38. https://www.arpansa.gov.au/sites/g/files/net3086/f/legacy/pubs/rps/rps14_1.pdf	3
	Barrett, K. E., Boitano, S., Barman, S. M., & Brooks, H. (2015). *Ganong's review of medical physiology*. [Chapter 38: Regulation of Extracellular Fluid Composition & Volume]. McGraw-Hill Education / Medical. https://accessmedicine-mhmedical-com.ezproxy.surgeons.org/content.aspx?bookid=1587&sectionid=97166839	6
	Bree, K., Barnhill, S., & Rundell, W. (2017). The Dangers of Electrosurgical Smoke to Operating Room Personnel: A Review. *Workplace Health & Safety*, *65*(11), 517–526. https://doi.org/10.1177/2165079917691063	3
	Coventry, B.J. et al. (2012). Ensuring Radiation Safety to Staff in Lymphatic Tracing and Sentinel Lymph Node Biopsy Surgery - Some Recommendations. *J Nucl Med Radiat Ther. S:2, 1-5.* https://www.omicsonline.org/ensuring-radiation-safety-to-staff-in-lymphatic-tracing-and-sentinel-lymph-node-biopsy-surgery-some-recommendations-2155-9619.S2-008.pdf	3
	Gastroenterological Society of Australia (GESA) (2010). *Infection Control in Endoscopy, 3rd edition.* https://www.gesa.org.au/resources/infection-control-in-endoscopy/	1
	Gingold, E. (2014). Modern Fluoroscopy Imaging Systems. *Image Wisely*. https://www.imagewisely.org/Imaging-Modalities/Fluoroscopy/Modern-Imaging-Systems	3
	Haesler, E., Thomas, L., Morey, P., & Barker, J. (2016). A systematic review of the literature addressing asepsis in wound management. *Wound Practice and Research 24(4)*, 208-246.	2
	Health Quality & Safety Commission (2012). *Cost benefit analysis of the surgical safety checklist*. http://srgexpert.com/wp-content/uploads/2018/02/Surgical-safety-checklist-CBA-report-18-June-2012.pdf	4
	Hebert, C., MD, & Weber, Stephen G., MD, MS. (2011). Common approaches to the control of multidrug-resistant organisms other than methicillin-resistant staphylococcus aureus (MRSA). *Infectious Disease Clinics of North America, 25*(1), 181-200. doi:10.1016/j.idc.2010.11.006	1
	International Committee of the Red Cross (ICRC) (2017). *Anaesthesia Handbook*. https://www.rcoa.ac.uk/sites/default/files/4270_002_Anaesthesia_Handbook_4.pdf%20Final.pdf	5, 6
	Kwok, A. C., et al. (2013). Implementation of the world health organization surgical safety checklist, including introduction of pulse oximetry, in a resource-limited setting. *Annals of Surgery, 257*(4), 633-639. doi:10.1097/SLA.0b013e3182777fa4	4

Surgical Education and Assessment Modules (SEAM) - Peri-Operative Care

Module Overview

Recommended Further Reading	Medical Council of New Zealand (MCNZ) (2015). Cultural Competence, Partnership and Health Equity: Professional Obligations Towards Māori Health Improvement. https://www.mcnz.org.nz/assets/News-and-Publications/Competence-Partnership-Equity.docx.pdf	4
	Medical Council of New Zealand (MCNZ) (2012). *Information, choice of treatment and informed consent*. https://www.mcnz.org.nz/assets/News-and-Publications/Statements/Information-choice-of-treatment-and-informed-consent.pdf	4
	Medical Council of New Zealand (MCNZ) (2006). *Statement on cultural competence*. https://www.mcnz.org.nz/assets/News-and-Publications/Statements/Statement-on-cultural-competence.pdf	4
	Mi-tec Medical Publishing (1999). The Cases of Rogers v Whitaker and Chappel v Hart, Patient Education Briefings with comment and analysis by Dr Paul Nisselle http://www.mitec.com.au/briefing	4
	National Health and Medical Research Council (NHMRC) (2010). *Australian Guidelines for the Prevention and Control of Infection in Healthcare*.* Parts B1.1 to B1.3 https://nhmrc.gov.au/sites/default/files/documents/attachments/publications/infection-control-guidelines.pdf https://nhmrc.gov.au/health-advice/public-health/preventing-infection **an update of the guideline is due for release mid-2019*	1, 2, 3
	Royal Australasian College of Surgeons (RACS) (2013). *Fundamental Skills for Surgery, 3rd edition*. [Ed: Davies, R.]. McGraw-Hill Medical Australia.	1, 2
	Royal Australasian College of Surgeons (RACS) (2014). *Position Paper: Informed Consent*. https://www.surgeons.org/media/312206/2014-08-29_pos_fes-pst-042_informed_consent.pdf	4
	Royal Australasian College of Surgeons (RACS) (2014). *Position Paper: Informed Financial Consent*. https://www.surgeons.org/media/312174/2014-08-29_pos_fes-pst-041_informed_financial_consent.pdf	4
	Scott, D.B., et al (1989). Acute toxicity of ropivacaine compared with that of bupivacaine. *Anesth Analg., 69*(5), 563-569. https://www.ncbi.nlm.nih.gov/pubmed/2679230	5
	Tanner, J., & Parkinson, H. (2006). Double gloving to reduce surgical cross-infection. *The Cochrane Database of Systematic Reviews,* (3), CD003087.	2, 3
	Treadwell, J. R., Lucas, S., & Tsou, A. Y. (2014). Surgical checklists: A systematic review of impacts and implementation. *BMJ Quality & Safety, 23*(4), 299-318. doi:10.1136/bmjqs-2012-001797. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3963558/	4
	World Health Organisation (WHO), World Alliance for Patient Safety (2008). *Implementation Manual Surgical Safety Checklist (First Edition):Safe Surgery Saves Lives* http://www.surgeons.org/media/19461/WHO_Surgical_Safety_Checklist_Implementation_Manual.pdf	4
	Wounds Australia (2018). *Application of aseptic technique in wound dressing procedure: A consensus document.*	2

Surgical Education and Assessment Modules (SEAM) - Peri-Operative Care

Module Overview

Prerequisites	N/A
How this module will be assessed	The e-learning module comprises learning activities and opportunities for Formative Assessment, with feedback. The Summative Assessment comprises twenty (20) Type A, Type X, and Type R multiple choice questions.

Surgical Education and Assessment Modules (SEAM) - Peri-Operative Care

Learning Activities & Formative Assessment

Cognitive level	Learning Objective	Module Topic	Learning Activity	Formative Assessment
Apply	Apply the principles of decontamination, disinfection, and sterilisation in the appropriate clinical situations	Infection Control	After reading about hand hygiene, decontamination, disinfection, sterilisation, aseptic technique, personal protective equipment, draping, and skin preparation, the learner will identify appropriate actions for re-use of surgical instruments, to evaluate knowledge of the principles of decontamination, disinfection, and sterilisation. The learner is provided with an opportunity to reflect on their own practice or experience with closed gloving technique.	Learners will be able to identify risk factors for wound infection, based on indicators learnt in the module.
Apply	Establish and maintain a sterile surgical field			
Evaluate	Recognise specific hazards and risks to staff within the operating theatre environment, and choose appropriate strategies to mitigate these	Occupational Safety	After reading about needlestick injury, bodily fluids exposure, personal protective equipment, smoke safety in surgery, sentinel lymph node radiation, care with equipment, and radiation safety in the operating theatre, the learner will demonstrate knowledge of appropriate strategies to minimise risk regarding positioning during x-ray, lead body protection, positioning of C-arm x-ray tubes, and minimising radiation exposure. Learners will be able to identify appropriate radiation safety, based on indicators learnt in the module.	Learners will be able to identify needlestick injury risks, based on indicators learnt in the module.
Evaluate	Recognise the role of ‘check-lists’, documentation, and clinical handover in safe surgical practice	Documentation	After reading about operating reports, consent, cultural considerations, informed consent, and Surgical Safety Checklists, the learner will demonstrate knowledge of the elements of surgical safety checklists.	Learners will be able to identify elements of consent, based on measures learnt in the module.
Evaluate	Recognise the needs and requirements of the anaesthetist, and basic anaesthesia practices	Anaesthesia	After reading about assessment of risks, identifying higher risk patients, pre-operative risks, ASA Classification, the triad of anaesthesia, the learner will classify patients to demonstrate knowledge of basic anaesthesia practices. The learner will also undertake a matching exercise to identify risk factors and pre-operative management.	Learners will be able to identify appropriate ASA Classifications for various scenarios, based on indicators learnt in the module.

Surgical Education and Assessment Modules (SEAM) - Peri-Operative Care

Learning Activities & Formative Assessment

Cognitive level	Learning Objective	Module Topic	Learning Activity	Formative Assessment
Evaluate	Recognise the needs and requirements of the anaesthetist, and basic anaesthesia practices	Anaesthesia	After reading about local anaesthesia, toxicity, and safe therapeutic dosing, the learner will undertake matching exercises to identify safe therapeutic dosing, and to classify CNS symptoms of toxicity. Learners will be able to identify appropriate anaesthesia for digital nerve blocks, based on indicators learnt in the module.	
Apply	Manage fluid balance in normal physiology, as well as in pathological states	Fluid Balance (Electrolyte Disorders)	After reading about normal physiology, gastrointestinal secretions, replacement fluids, and options for intravenous fluid replacement, the learner will identify appropriate treatment for a previously well patient with distal small bowel obstruction, to demonstrate knowledge of fluid balance. Learners will be able to identify treatment options for a patient with gastric outlet obstruction, based on indicators learnt in the module.	Learners will identify elements of daily fluid and electrolyte balance in adults, based on indicators learnt in the module.