

PERIOPERATIVE HYPERTHERMIC INTRA-PERITONEAL CHEMOTHERAPY [HIPEC] MANAGEMENT - CHW

PRACTICE GUIDELINE[®]

DOCUMENT SUMMARY/KEY POINTS

- As part of the CHW Operating Suite, all nurses are to abide by standards that allow for the delivery of safe and effective intraoperative nursing care.
- All members of the perioperative and *oncology* team involved in HIPEC surgery must ensure they are wearing appropriate PPE for the different phases of this procedure.
- This document is aimed at providing all instrument/circulating nurses within the operating suite *and oncology service* the essential guidelines to allow optimal perioperative HIPEC care.

CHANGE SUMMARY

- Addition of Return to Theatre and management of death of a child within 7 days of HIPEC
- Increased information on the role of the Oncology nurse
- *Terminology for "Chemotherapy" updated to "anti-neoplastic" where appropriate*
- *Procedures updated to reflect current equipment and practice*
- *PPE procedures updated*

This document reflects what is currently regarded as safe practice. However, as in any clinical situation, there may be factors which cannot be covered by a single set of guidelines. This document does not replace the need for the application of clinical judgement to each individual presentation.

Approved by:	SCHN Policy, Procedure and Guideline Committee	
Date Effective:	1 st January 2024	Review Period: 3 years
Team Leader:	NUM	Area/Dept: Operating Suite CHW

READ ACKNOWLEDGEMENT

- All staff working within the operating suite that may encounter a patient undergoing HIPEC surgery on any shift must read and acknowledge this document and agree to work within the guidelines provided.

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1 Background

Hyperthermic Intra-Peritoneal Chemotherapy [HIPEC] is used in combination with complete cytoreductive surgical resection [CRS] of certain intra-abdominal malignancies in carefully selected patients. The goal of CRS with HIPEC is to surgically resect as completely as possible the intra-abdominal malignancy and then employ intra-abdominal *antineoplastic therapy* to destroy any residual disease. The heat and the *antineoplastic therapy* act synergistically to kill cancer cells. Candidates for this particular surgery include but are not exclusive to patients with ovarian cancer, colonic or colorectal peritoneal carcinomatosis. The agent is heated to 41 °C and as such can raise the patient's core temperature up to this level. This part of the procedure occurs after all dissection is completed but before anastomoses are commenced. The duration of HIPEC runs for 90mins.

Further Reading:

- All staff must additionally be familiar with the *practice guideline* [Hazardous Medications - Administration and Handling](#)
- All Staff in contact with *Hazardous Medications* must complete the [Hazardous Medication Exposure Record](#) as per SCHN Policy.
- All staff involved are to follow the Operating Suite Safe Work Practice associated with Chemical Exposure – Carcinogenic, teratogenic, Mutagenic, Immunosuppressant. This can be found on the Cytotoxic trolley in the back corridor of Theatre 9.

2 Definitions

- Cytotoxic Agents - substances used in the treatment of malignant and other diseases. They are designed to destroy rapidly growing cancer cells. They have been shown to be mutagenic, carcinogenic and teratogenic, either in treatment doses or animal and bacterial assays
- Cytotoxic - an agent or process that is toxic to cells
Chemotherapy - The use of any chemical agents to treat or control disease. Most often used to describe treatment of malignant and other diseases with cytotoxic agent.
- Types of cancer cells:
 - Mutagenic - capable of causing alterations/damage to genes.
 - Carcinogenic - capable of causing cancer.
 - Teratogenic - capable of causing foetal defects, either anatomic or functional

3 Staffing Requirements in Operating Suite

- Surgeons, Registrars and Residents
- Anaesthetists and Anaesthetic Nurse
- Perfusionist
- Instrument and Circulating Nurses
- Operation Assistants:
 - CSSD Staff
 - Recovery nurses and family/friends post-surgery
 - Pharmacy personnel and two (2) Oncology Nurses:
 - The preparation of the *antineoplastic medication* is to only to be performed by a pharmacist.
 - The administration of *antineoplastic medication* is to be performed by an accredited ward registered nurse (RN) and checked by a second Oncology RN. Both Oncology RNs must remain present for the duration of the administration of the medication.

4 Perioperative Considerations

The Operating Suite nursing staff need to ensure the operating theatre has all the essential and requested equipment according to the surgeon preference folders prior to calling for the patient preparation – Prior to commencement of Procedures.

The theatre must be prepared with the following:

- Purple *cytotoxic* signs (printed on purple paper) on all entry and exit doors to the operating theatre.
- Ensure large purple cytotoxic bin is located at dirty corridor (located in Domestic Services)
- Change over sharps container to the purple cytotoxic container.
- Another purple sharps container can be used to hold excess cytotoxic fluid waste.
- Ensure all rubbish bags are clearly marked with cytotoxic stickers.
- Prepare linen bags with a cytotoxic linen liner and have stickers clearly labelled on bags (see below for label marking)
- Utilize smoke evacuator machine for chemotherapy plume evacuation.
- Have a Cytotoxic Spill Kit (ZEO-ZCYTQ) and Kittie Litter available in case of spills.
- Ensure all sizes of cytotoxic gloves (sterile and unsterile) are available.
- Ensure all surgical gowns (sterile and unsterile) are available.

- Equipment: Plume Evacuator Machine (Buffalo Plume Evacuator), Surgical suction carousel, Purple cytotoxic bins



CYTOTOXIC CHEMICALS IN USE

N95 MASK MUST BE WORN

AUTHORISED STAFF ONLY

CALL 52392 FOR ACCESS

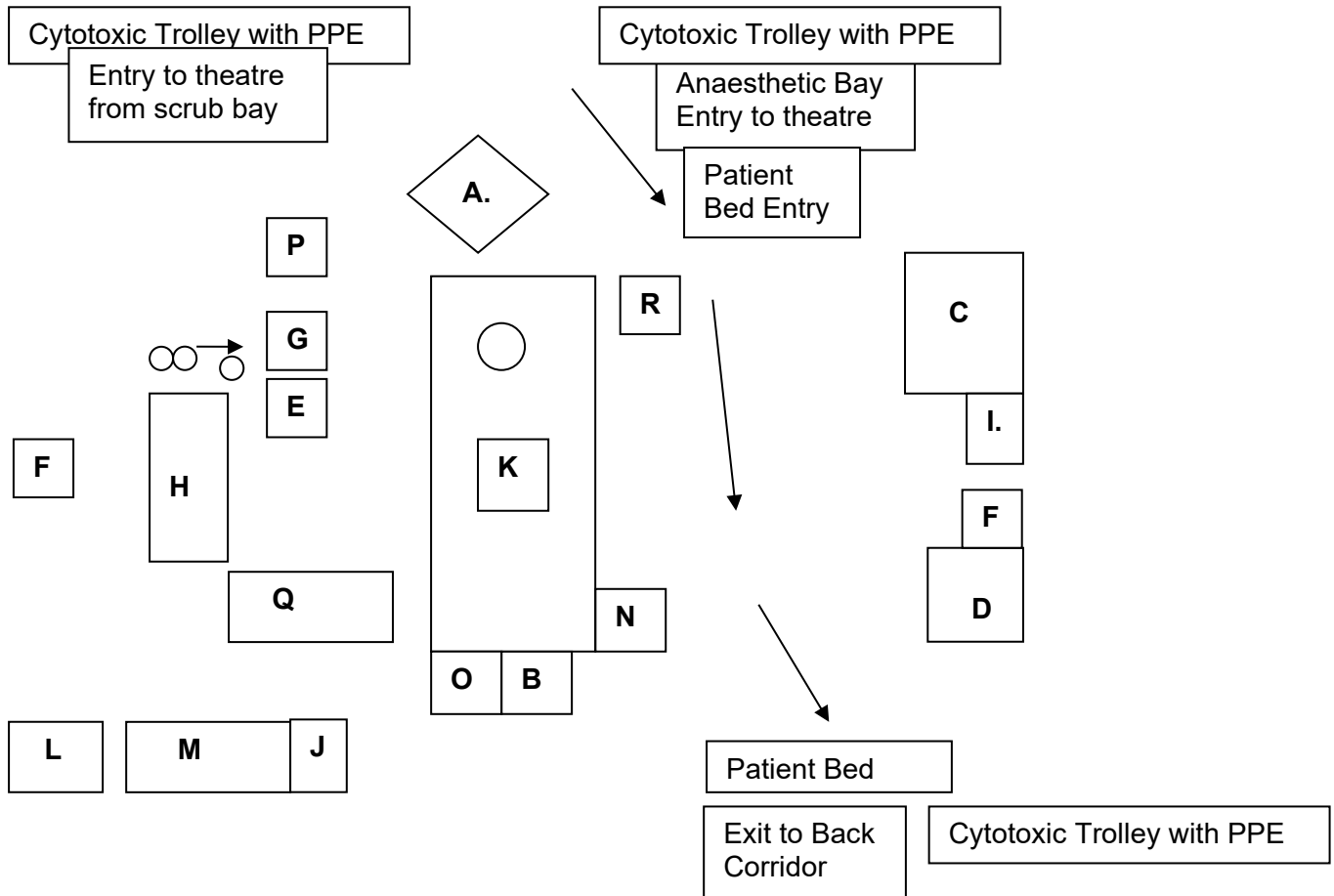


(Cytotoxic materials are identified by a purple symbol that depicts a cell in late telophase.)

4.1 HIPEC Operating Room Plan

Ensure all equipment that is not required for this procedure is removed from the theatre before procedure commences. Prior to initiation of *antineoplastic therapy* during HIPEC procedure remove all equipment and furniture not needed e.g., extra stools, liver trolley, surgeon's bags, etc, due to aerosolisation of *antineoplastic therapy*. Please ensure minimisation of number of staff present in the room and opening of theatre doors.

The following diagram is a schematic view of the burns theatre room plan when working in theatre four (4). Please ensure the theatre includes this equipment in the position shown.



A: Anaesthetic Machine	J: CHW Computer
B: Smoke Evacuator Machine	K: Operating Table (circle indicates the position of the patient's head)
C: Anaesthetic Stock Trolley	L: Scout Trolley
D: Liver Trolley	M: AIDA
E: Two Single bowl stands	N: Suction carousel
F: Purple Cytotoxic Bins	O: Diathermy Machine
G: One Double bowl stand	P: Perfusionist
H: Large Instrument Trolley	Q: Large Instrument Trolley
I: PACS computer	R: Perfusionist Circulation System

4.2 Surgical Attire in the Operating Theatre

All non-sterile and sterile personnel comply with appropriate personal protective equipment for the HIPEC part of the procedure. This includes during and after the *antineoplastic therapy* has been administered.

1. Non-sterile personnel in theatre during *antineoplastic therapy*:

- P2/N95 particulate respirator type mask
- Long sleeve purple gown of impermeable material
- Cytotoxic safe gloves
- Safety spectacles with side shields or goggles

2. Sterile personnel in theatre during *antineoplastic therapy*:

- Mask P2/N95
- Safety spectacles with side shields or goggles
- Purple shoe coverings
- Change to impervious sterile gown.
- Double glove using recommended European Standard EN374 and ASTM D6978-05(2019) gloves. Sterile gloves have “permeation time” of 240 minutes (4hours). However, it is recommended that gloves be changed every 60 minutes or at surgeons’ discretion. As per ACORN standards “change gloves if they become contaminated, and as per manufacturer’s instructions”.
- It is recommended that staff using sterile gloves whilst “stirring” chemo during the antineoplastic (heated) phase change gloves every 60minutes.

4.3 Anaesthetic Considerations

Anaesthesia for HIPEC involves more than just considerations relevant to all major abdominal surgery. Additional elements to consider include:

- HIPEC may follow cytoreductive surgery (CRS). CRS involves reduction of overall tumour load including stripping of the peritoneum. As such major blood loss and massive transfusion may have occurred prior to the commencement of HIPEC.
- Hyperthermia may result from the circulation of heated *antineoplastic therapy* in the peritoneum. Without correction it may cause consumptive coagulopathy, injuries to the kidneys or liver, peripheral neuropathies, seizure and arrhythmias.
- HIPEC induces a hyperdynamic state with vasodilatation. This fall in peripheral vascular resistance requires an increase in cardiac output. Inotropes or vasopressors may be required.
- Some agents used in HIPEC may have their own toxicity. Cisplatin is associated with selective renal magnesium loss and may cause direct cardiotoxicity.
- Multiple factors contribute to a high risk of renal dysfunction in the postoperative period. These factors include significant fluid shifts and direct nephrotoxicity of *antineoplastic therapy*. Attention to volume status is therefore critical.

It is assumed that all patients will require general anaesthesia, intubation, and ventilation.

Additional considerations include:

Monitoring

All patients require standard anaesthetic monitoring including:

- ECG.
- Pulse plethysmography.
- Non-invasive blood pressure.
- Capnography.
- Gas monitoring.
- Anaesthetic agent monitoring where volatile anaesthesia is utilised.
- Monitoring of core temperature.
- Urine output monitoring with an indwelling urinary catheter.
- Invasive pressure monitoring – intra-arterial blood pressure monitoring and central venous pressure monitoring are standard.

Venous Access

Adequate intravenous access to allow fluid resuscitation is essential. Fluid warming should be available for these cases, though prior to circulation of heated *antineoplastic therapy*, warming is not likely to be necessary.

Inotropes and Vasopressors

Choice of inotrope and vasopressor are at the discretion of the involved anaesthetist.

Options include:

- Dopamine:
 - Standard dilution is 15 mg/kg drawn up to 50 mL total volume with either 5% dextrose or 0.9% NaCl. At this dilution 1 mL/hr will deliver 5 microg/kg/min.
- Noradrenaline:
 - Standard dilution is 0.3 mg/kg drawn up to 50 mL total volume with either 5% dextrose or 0.9% NaCl. At this dilution 1 mL/hr will deliver 0.05 mcg/kg/min.

Provisions for Temperature Control

Patients may become hyperthermic during the circulation of heated *antineoplastic therapy*. This may require active measures to cool the patient. This can be accomplished by the following manoeuvres:

- Patients should have an appropriately sized Forced Air Warmer in situ. This can be set to "Ambient" to provide cooling of the patient.
- Application of ice, particularly over areas where major vessels are close to the skin. Ice can be placed in pathology specimen bags to make sure fluids are contained as the ice melts. Ice may be placed in both axillae, at the neck on each side overlying major vessels, and over both groin areas if it is possible to access these last sites.

Active measures to reduce temperature should be initiated if the temperature reaches 38.5°C. These may be ceased if the temperature reaches 36.5°C.

Analgesia

Adult literature related to these procedures suggests that thoracic epidural may be the preferred method of analgesia. Epidural analgesia appears to be associated with improved postoperative respiratory status and earlier recovery of gastrointestinal function.

Prior to initiation of epidural analgesia, an appropriate assessment of coagulopathy or other bleeding issues is important. Epidural analgesia may be continued for a number of days and management of analgesia will involve the support of the Acute Pain Service. Prior to removal of an epidural catheter, a plan must be in place for ongoing analgesia. Assessment of risk related to any coagulopathy or thrombocytopenia must also be considered. If instituted, adjustments to chemical thromboprophylaxis may be required. This includes careful timing of epidural removal after an appropriate delay since last dose, and a delay before recommencing chemical thromboprophylaxis is necessary.

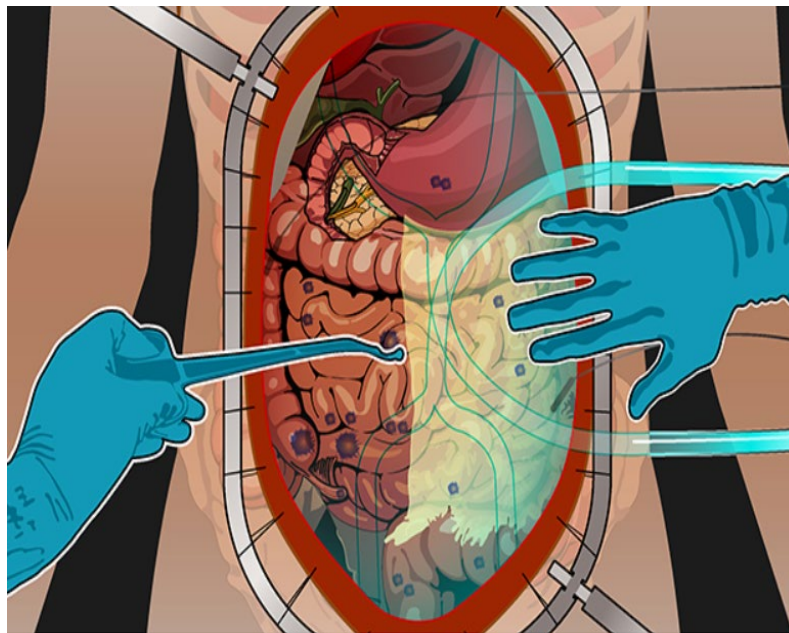
4.4 The Sterile Set Up

There is a significant amount of instrumentation, equipment and other disposable items that need to be collected from the sterile stock areas. Please see Appendix A for details.

4.5 Preparing the *Antineoplastic* 'Boat'

This prevents spillage of the chemotherapy.

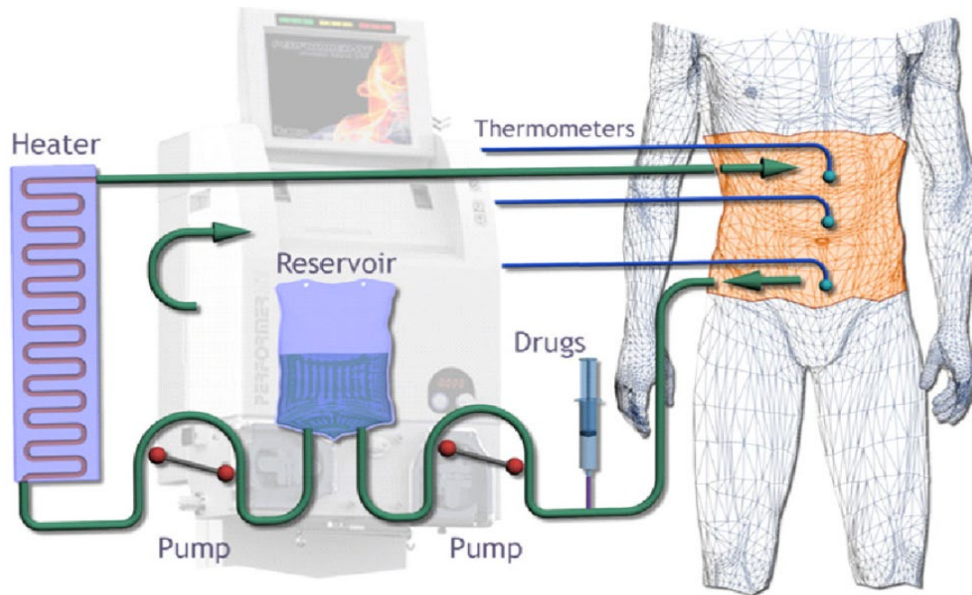
- 3x large loban
- X-Large Alexis Retractor or XXL depending on size of patient.
- 2x neuro huck towels
- 10-15 large tegaderms
- 2x tinc benz swabs
- Cuts plastic piece off C-section drape to create side of 'boat'



4.6 *Antineoplastic* Phase

This duration of the phase is 60-90 minutes, depending on the type of *antineoplastic* medication given:

- Ensure plume evacuator is used throughout this time and plume tubing is secured to the retractor.
- It is recommended that staff using sterile gloves whilst "stirring" chemo during the *antineoplastic* (heated) phase change gloves every 60 minutes.
- Only essential staff is to be present during the commencement of *antineoplastic* therapy.



4.7 Medications

- The *antineoplastic therapy* will vary based on disease type. The most common agents used include Cisplatin, Doxorubicin and Mitomycin C. These will be ordered prior and oncology nursing support will be available for administration of the *medication* in to the HIPEC perfusate.
- *Antineoplastic medications* may differ between patients. Therefore, each patient's care will be determined by the surgeon in conjunction with the Oncologist. The literature supporting the medications required will be added to the patient's Oncology *protocol* notes or *power plan*. This will include drugs required, dosage required, dilution of perfusion fluid, dwell time and any adjunct medications that are required concurrently.
- *Adjunctive medications may be used alongside antineoplastic medication to ameliorate potential toxicity secondary to absorbed antineoplastic medication. For example, sodium thiosulphate is administered with Cisplatin at 7.gr /m² in 250ml as a loading dose over 20 min beginning 30 min after the addition of intraperitoneal Cisplatin. Once completed, 15.3gr /m² will be diluted in 250mL and given over 12 hours after the loading dose.*

5 Staff Roles and Responsibilities

5.1 Surgeons Role

The surgeon is responsible for:

- Safe resection of the tumour and peritonectomy
- Establishment of a secure Colosseum or *antineoplastic* boat to ensure there is no spillage and the patient's skin is protected.
- Safe and secure placement of perfusion tubing.
- Undertake measure to minimise evaporative exposure.
- During HIPEC the surgeon's role is to ensure adequate inflow and outflow as well as uniform temperature distribution through the abdomen to the target temperature.
- Following HIPEC the surgeons' responsibility is to safely dismantle the colosseum enabling safe disposal of contaminated materials.

5.2 Perfusionist Role

The Perfusionist is responsible for:

- Perfusion will arrange for the Hyperthermia pump system to be leased from distributor.
- The pump and vacuum system will be set up by the perfusionist.
- Consumables will be provided to scrub staff that are for handing off to perfusionist for aseptic connection to the pump system.
- Four sterile temperature probes for placement at each quadrant will also be connected to the pump monitoring.
- The surgeon will connect to the outflow from the pump to *the cannula or connectors (as discussed during timeout)*.
- The pump will be primed with NaCl 0.9% or *Plasmalyte 148 depending on antineoplastic medication to be used. The prime quantity should be determined by the required fluid to fill the colosseum. Recirculation through the colosseum should then be started* to test for leaks.

- **Priming solutions**

Mitomycin C Plasmalyte 90 minutes duration

Cisplatin NaCl 0.9% 60 minutes duration

Doxirubicin NaCl 0.9%

Oxaliplatin Dianeal PD4 30 minutes duration

Following the leak test, the *antineoplastic medication* is added to take the total volume of circulating volume to 3000 mL and the temperature is raised to 44 degrees. Desired temperature within the peritoneum is 41 degrees. The peritoneal cavity is then filled to a level in consultation with the surgeon and the vacuum commenced to enable recirculation at 500-600 mL/min.

- Upon reaching desired temperature, the timer is then commenced, usually aiming for 60-90 minutes of hyperthermic recirculation *depending on antineoplastic medication used*.
- At the completion of therapy, the solution *is* aspirated back into the reservoir and the surgical field irrigated with 0.9% saline and this volume also recovered into the reservoir.
- The volume is subsequently displaced into a pre-connected waste bag and all fluid and consumable components are disposed of according to policy.

5.3 Oncology Service Role

Surgical and Oncology teams to notify Nurse Manager Oncology Services of an upcoming HIPEC procedure and once confirmed, the date of booked procedure. Oncology Nurse Manager to identify two senior Oncology Nurses who will be present to administer *antineoplastic therapy* and any adjuvant medications intraoperatively. Both nurses must be cytotoxic accredited as per *Hazardous Medications – Administration and Handling Policy*.

The Oncology Nurse's role is to ensure all clinicians follow policy guidelines to reduce cytotoxic *exposure* to themselves and the patient during the HIPEC procedure. This includes being responsible for the *antineoplastic medication*, adjunctive medications, and cytotoxic spill management.

The Oncology nurses *responsibilities are to:*

Pre-operatively

- Oncology Nurse *or representative* to be present at the team brief at 0805 hours.
- Collect *antineoplastic* and adjuvant medications and safely transport to theatres.
- Check *antineoplastic* and adjuvant medications against order/protocol.
- Prepare adjuvant medication infusions if applicable. Label bags and lines and liaise with Anaesthetist regarding timing and rate of infusions.
- Commence/complete the *checklist in "Oncology Service Roles and Responsibilities in HIPEC Procedures Local Work Procedure" upon confirmation of HIPEC procedure.*

Intraoperatively

- Check correct *hazardous* PPE is worn for all staff present during procedure.
- Record names of all staff in attendance for exposure records.
- Administer *antineoplastic therapy* into perfusion set as directed by perfusionist.
- Vigilantly monitor for and manage cytotoxic leaks and spills.

Postoperatively

- Ensure spills are cleaned as per Hazardous Medications – Administration and Handling Policy.
- Check patient's skin integrity and ensure patient's skin is cleaned from any potential leaks/spills to prevent cytotoxic burn injuries.
- Ensure PICU post-op care is in line with hazardous precautions.
- Complete IIMS following procedure ensuring all staff present are documented.

5.4 Instrument Nurse and Circulating Nurse Roles

On day of procedure, Oncology Nurses to be *present at the 0805 team huddle or have a representative present either in person or via telephone or video link*. The oncology nurses are then to be contacted by theatre staff at a minimum of 2 hours prior to planned commencement of HIPEC.

Prior to the commencement of the procedure, the instrument and circulating nurse are responsible for the correct preparation of the operating room:

- Ensures sufficient stock levels on the chemotherapy trolley.
- Ensure the smoke evacuator, suction, and all listed equipment are functional and present in the room.
- Places chemotherapy warning signs on all doors into the operating theatre and informs ancillary personnel about the use of intraoperative chemotherapy.

The circulating nurse is responsible for:

- The printout of the [Hazardous Medication Exposure Record](#) (This can be found via G-drive in the CNS2 folder under 'forms' if unable to be accessed through the link provided) and completes the drugs administered during surgery.
- Ensures the use of standard bin lining and sharps bin for the initial part of the surgery until *antineoplastic therapy* commences.
- Ensures all standards bins are replaced with purple bins/cytotoxic sharps bins once chemotherapy is about to be commenced.
- Ensures all sterile personnel comply with appropriate personal protective equipment. Assists all members of the surgical team with the changeover to *antineoplastic* protective equipment.
- Assists the Oncology Nurses with any *antineoplastic* spills as per [Hazardous Medications – Administration and Handling practice guideline](#)
- Ensures minimal traffic and only required personnel are in the operating theatre
- Practice in accordance with ACORN Standards

The instrument nurse is responsible for:

- *Ensuring the set-up is complete with the circulating nurse, as per the HIPEC surgical preference card.*
- Containment of Accountable items
- Conducting the Surgical Count of Accountable items and instrumentation.
- Participates in the surgery.
- Maintains sterility of the operating field throughout entire procedure.
- Ensuring patient positioning is optimal.
- Participation in time-out.

- Appropriate patient draping.
- Ensuring dressings are available and appropriately prepared.
- Completion of final Surgical Count.
- Practice in accordance with ACORN Standards

5.5 Anaesthetic Nurse Role

The Anaesthetic Nurse is responsible for:

- Practicing in accordance with ACORN standards.
- Participating in team brief and time-out
- Ensuring a PICU bed space is available and call a porter to pick up PICU bed.
- Perform blood gases as required- ensuring PPE is always worn.
- A blood gas will be required 15-20min prior to HIPEC commencement.
- Liaising with the anaesthetic team to discuss any additional relevant medical history of the patient and discuss the anaesthetic team's plan for management and care of the patient.
- Monitoring patient's core temperature is imperative throughout all phases of the procedure.
- Before HIPEC commences, it is suggested that the Bair Hugger setting is on ambient, and the fluid warmer switched off and removed from the warming device.
- If the patient becomes hyperthermic greater than 38.5C, further active cooling is to commence utilising ice in sealed specimen bags in bilateral axilla, either side of the neck and the groin if accessible. Active cooling is to cease when the patient's core temperature is at 36.5C.

6 General Procedure Guidelines

1. Full PPE must be worn when administering *antineoplastic* medication/s.
2. *Antineoplastic* medications must be checked by at least one accredited RN, the second checker can be an RN or a Medical Officer.
3. Only needle, syringes and other equipment with luer-lock fittings are to be used.
4. Plastic backed absorbent sheets are to be placed under any injection site.
5. Gauze is wrapped loosely around the injection port to minimise contaminations from droplet or spill.
6. *Perfusion set* is primed with a compatible, *appropriate* fluid before *connecting* the *syringe* loaded with the *antineoplastic medication*.
7. When attaching the *syringe* which has been loaded with the *antineoplastic medication* drug to the *perfusion set*, an aseptic "non-touch" technique is employed.
8. The empty *syringes* are disposed of into the cytotoxic waste container.
9. *Where possible*, closed system administration devices should be used for the administration of *antineoplastic therapy*. This can be achieved by a smoke/plume evacuator to limit inhalation of the drug.
10. *Full Hazardous PPE* should be worn when emptying/handling urinals, bed pans, urinary catheters, vomit bags or linen/clothing contaminated with patient excretions or when taking the patient's blood.
11. *Antineoplastic medication* residues may continue to be excreted for several days after administration. *Full hazardous* PPE is required for 7 days post administration. Any cytotoxic spill equivalent (e.g., bodily fluids) must be managed using a cytotoxic spill kit during this time period *and appropriately documented*.
12. All equipment should be sanitised immediately after use and protective equipment discarded.

7 Documentation

All intraoperative care is to be documented according to 'Perioperative Nurses SurgiNet and Intraoperative Documentation – CHW' policy utilising the following forms:

1. SurgiNet
2. Count Sheet
3. Instrument Tracking Form
4. [Hazardous Medication Exposure Record](#) (This can be found via G-drive in the CNS2 folder under 'forms' *if unable to be accessed through the link provided*)

8 Cytotoxic Spills

All cytotoxic spills are to utilise the Zeomed Cytotoxic Chemical Spill Kit that is present in the room. Spare cytotoxic spill kits are kept in the back storeroom of theatre nine.

- The spill kit requires x 2 staff (one to clean the spill and the other to guide/read instructions)
- If there is a small spill, ensure wearing *full cytotoxic* Personal Protective Equipment (PPE) and use absorbent disposable towels to wipe and place in cytotoxic labelled container for disposal.
- If it is a large spill, ensure wearing *full cytotoxic* PPE. Use spill kit and kitty litter to absorb chemo fluids. Dispose as per small spill. Recommend clothing change/gown glove/ shower to staff if spilt directly on persons. One spill kit will effectively contain a spill of up to 1,000mL.

Staff are to follow instructions from cytotoxic spill kit and document spill on IMS+

ZEOMED CYTOTOXIC CHEMICAL SPILL KIT - BOX

This kit can be used for both chemical and body fluid clean-up. Packaged complete in a single use box.

- 1 x Long sleeved impermeable gown with elastic cuffs
- 4 x Pair of purple cytotoxic gloves (2 large, 2 medium)
- 1 x Pair of impervious overboots, 1 x Face mask
- 1 x Protective eyewear, 1 x Hairnet
- 2 x Cytotoxic spill sign, 4 x Chemosorb pad, 6 x Wash cloth
- 1 x Alginate bag, 2 x Purple cytotoxic waste bag with tie
- 1 x Scoop & scraper, 1 x Bottle of water
- 1 x pH neutral foaming detergent
- 1 x Instruction sheet

Order Code **ZEO-ZCYTQ**



Instructions for Cleaning up Cytotoxic Chemical Spills

ZEO-ZCYTQ

1. Alert people in the immediate vicinity that a Cytotoxic Chemical Spill has occurred & instruct them to remain clear. Remain with spill, taking care not to walk in, stand in or create a draft around spill.
2. Ask person involved to remove contaminated clothing quickly and have them wash their affected skin thoroughly with soap and water.
3. Open the Cytotoxic Chemical spill kit, remove Cytotoxic spill signs and display around perimeter of the spill. Limit access to spill, call for assistance.
4. Empty contents of kit within reach of spill.
5. Contain spill (if liquid) by placing absorbent cloths around perimeter.
6. Remove any contaminated clothing and place in the red alginate soluble laundry bag. Use tie to secure bag and place in contaminated laundry bag. If skin has come in contact with body fluid rinse well with water.
7. Don Personal Protection Equipment in this order:
 - 1 - Mask
 - 2 - Eyewear
 - 3 - Hairnet
 - 4 - Purple gloves
 - 5 - Chemo gown (ensure cuffs of gown are over the 1st pair of gloves)
 - 6 - Overshoes
 - 7 - Followed by 2nd pair of purple gloves (gloves are to go over top of gown cuffs).
8. Open two (2) Cytotoxic waste bags, placing one inside the other (slightly roll tops of bags down to reduce contamination).
9. For spills - (take care not to generate aerosols)
 - 1 - Liquid spills - carefully cover spill with Chemosorb Pad
 - 2 - Powder spills - place Chemosorb pad over the powder, saturate pad with water (without flooding) until powder dissolves & is absorbed. Cytotoxic powder should now be absorbed by the now gel coagulant).
10. Using the scoop and scraper, scoop up waste matter and dispose of into inner Cytotoxic waste bag.
11. Moisten absorbent cloths with clinical detergent and commence cleaning from the outer aspect of the spill working inwards. Place used cloths into the Cytotoxic waste bag. Continue using cloths until spill area is completely cleaned. At least (3) washes.
12. Rinse spill area thoroughly with water.
13. Dry area with any remaining cloths and dispose of all items into inner waste bag.
14. Remove outer gloves and dispose of into inner waste bag. Seal bag with cable tie.
15. Remove all additional PPE, placing into the outer waste bag. To be removed in the following order:
 - 1 - Overshoes
 - 2 - Chemo gown
 - 3 - Protective eyewear
 - 4 - Hair net
 - 5 - Respirator and
 - 6 - 2nd pair of gloves
 - 7 - Tie off bag with cable tie
16. Place Cytotoxic waste bag into Rigid Cytotoxic waste bin.
17. Wash hands thoroughly with soap & water
18. Complete appropriate incident report form
19. Reorder Cytotoxic Spill Kit from ZeoMed

582923_L10071



NATIONAL DISTRIBUTION

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+61 2 8536 4000 (International)
Fax: +61 2 8556 4055

email: zeomed@erware.com.au
www.zeomed.com.au

9 Post-Operative Care in Theatres

9.1 End of Case

- All waste/sharps are disposed of into an appropriate *purple bin/cytotoxic sharps* containers. This includes all gowns/gloves/ drapes etc.
- Discard (*as per Hazardous Medications – Administration and Handling*) and change filter on surgical plume evacuator machine.
- Place used instrument trays directly into 'dirty trolley' cart at the end of the case. Ensure the cart and instrument trays are labelled as 'Cytotoxic' to ensure CSSD staffs are alerted to use Cytotoxic PPE. All reusable instruments are to be taken to CSSD with cytotoxic stickers, who need to be aware for proper use of cleaning and *full hazardous* PPE.
- Let the Operation Assistants know to wear appropriate *full hazardous* PPE when transferring the 'dirty' cytotoxic equipment directly to CSSD.
- Remove the filter in the plume evacuator and dispose of in the cytotoxic marked bin.
- All staff to change into new theatre attire and place *used attire* into marked cytotoxic linen bin.
- Ensure all other wastes/sharps are disposed into appropriate *purple bin/cytotoxic sharps* containers.
- Sign and check to see all appropriate forms have been completed is with patient's notes.
- Inform Recovery Team Leader regarding needing an isolation recovery bed as well as requiring *full hazardous* PPE *if in contact with patient's waste*.
- Return all unused items to the Cytotoxic Storage Area in the major equipment room.
- After the surgery and *antineoplastic therapy* is finished, the operations assistant:
 - Cleans the theatre and disposes of all waste/linen as per hospital safe handling guidelines.
 - Performs a theatre terminal clean.

9.2 CSSD

- Use *full hazardous* PPE as per non sterile staff in the theatre.
- Dispose of PPE into Cytotoxic Bins.
- Wash instrument cart after use.
- Change theatre attire.

9.3 Disposal of Antineoplastic therapy

All *antineoplastic therapy* is to be discarded in a sealed non-spill container.

- For used *antineoplastic therapy*, this can be discarded via sealed suction canisters *then into cytotoxic waste*.
- For unused *antineoplastic therapy*, this can be discarded via an empty purple sharps container *then into cytotoxic waste*.
- All Perfusion Circuits placed directly with the 25 litre chemo tub.

10 Return to Theatre within 7 days of HIPEC Procedure

In the event of patient returning to theatres within 7 days of HIPEC procedure, as per [Hazardous Medications – Administration and Handling](#) policy document, staff should wear full *hazardous* PPE when handling patient bodily fluids.

11 Death of a Child in Operating Theatres

In the rare event of the death of a child in Operating Theatres either during or within 7 days of a HIPEC procedure, as per [Hazardous Medications – Administration and Handling](#) policy document, staff should wear full *hazardous* PPE when handling patient bodily fluids.

12 Bibliography

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