



# Bunbury Hospital Intensive Care Unit - Intra-Abdominal Pressure Measurement Guideline

## 1. Guiding Principles

The Bunbury Hospital is committed to providing safe and appropriate healthcare. All patients requiring intra-abdominal pressure measurement can expect to have this procedure carried out safely and with minimal risk. The following document defines the role of the healthcare staff in providing this service and the procedure to be followed to facilitate a smooth safe process.

## 2. Guideline

Intra-abdominal pressure (IAP) measurement is used to diagnose and manage intra-abdominal hypertension (IAH) pressure concealed in the abdominal cavity. In critically ill patients, an elevated IAP has been recognised as a cause of organ failure, morbidity and mortality. The purpose of this guideline is to ensure registered nurses caring for these critically ill patients use a standardised measurement of IAP in the intensive care unit.

### 2.1 Risk Factors for IAH/Abdominal Compartment Syndrome (ACS)

There are many risk factors for IAP and ACS:

- Diminished abdominal wall compliance
- Acute respiratory failure, especially with elevated intrathoracic pressure
- Abdominal surgery with primary fascial or tight closure
- Major trauma/burns
- Prone position
- Increased intra-luminal contents
- Gastroparesis and ileus
- Colonic pseudo obstruction
- Haemoperitoneum/pneumoperitoneum
- Ascites/liver dysfunction
- Capillary leak/fluid resuscitation
- Hypothermia core ( temperature < 33deg. Celsius)
- Polytransfusion (>10 units blood/ 24 hours)
- Massive fluid resuscitation (>5L/ 24hours)
- pancreatitis

Indications for measuring IAP are any two risk factors or at the discretion of the Consultant Intensivist.

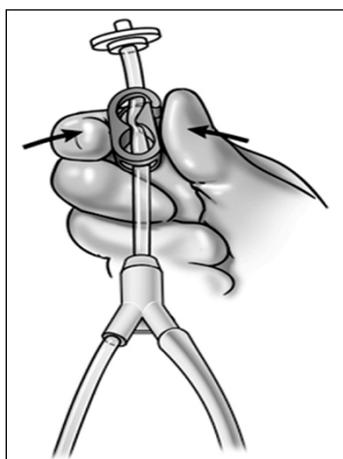
## 2.2 Measuring IAH

### Equipment

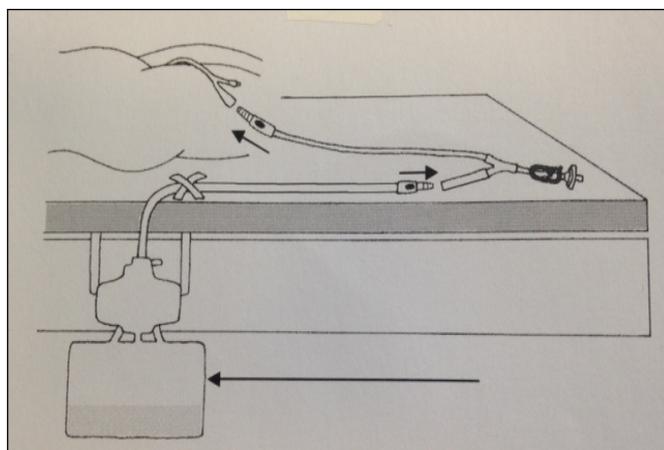
- Personal Protective Equipment (PPE)
- appropriate sized indwelling urine catheter
- urine collection bag
- intra-abdominal pressure measuring device
- 20ml non-leak syringe and 20ml 0.9% NaCl sterile
- Sterile gloves, dressing pack and chlorhexidine antiseptic solution

### Procedure

- Open intra-abdominal pressure measuring pack and **close the red tube clamp** below the air vent. Place the urine meter under the patient's bladder and tape the drainage tube to the bed sheet



- Place sterile dressing towel under indwelling urine catheter and drainage bag connection and clamp indwelling catheter
- Using aseptic technique don sterile gloves, prep the drainage bag/indwelling urine catheter bag connection with antiseptic solution then disconnect
- Attach indwelling catheter and drainage bag to intra-abdominal pressure measuring device

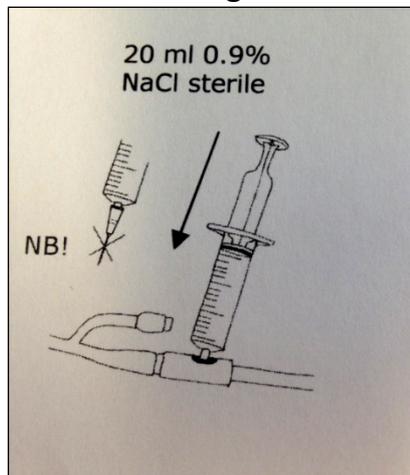


## WACHS Bunbury Hospital Intensive Care Unit - Intra-Abdominal Pressure Measurement Guideline

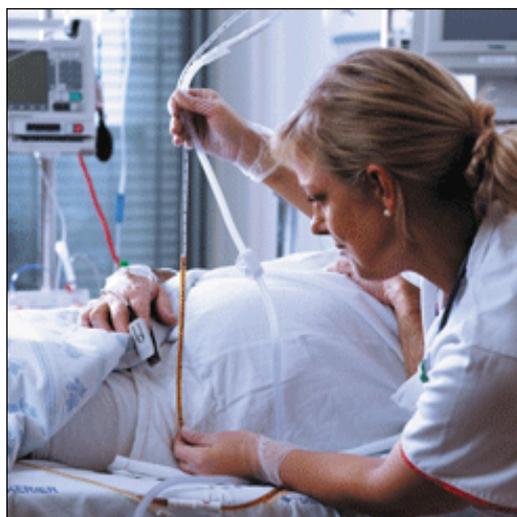
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- Prime the intra-abdominal pressure measuring device with 20ml sterile Sodium Chloride 0.9% through the needle free sample port

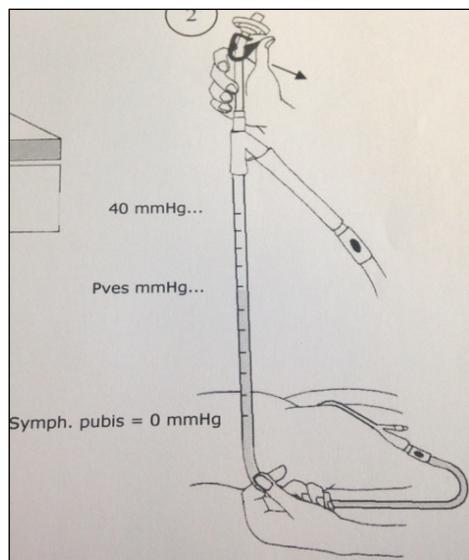
**Note: prime ONLY once i.e. at initial set up OR to remove any air in the abdo pressure monitoring device tubing.**



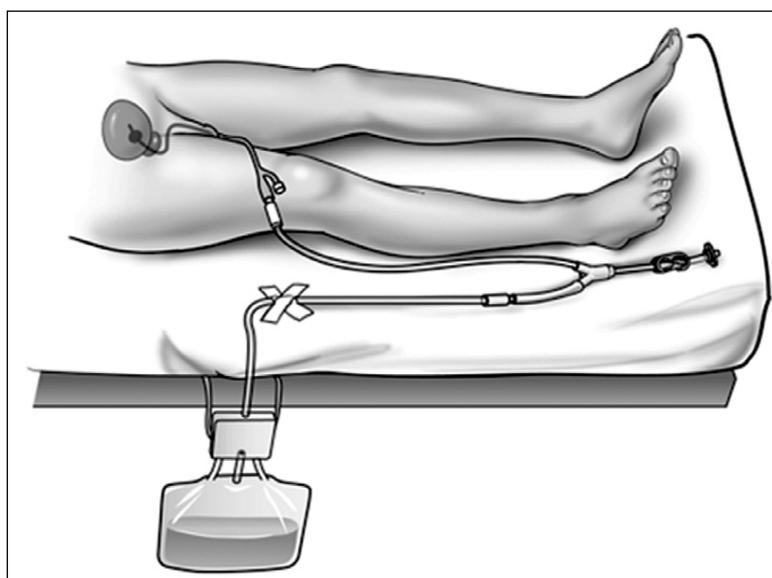
- Mark an “X” on the hip of the patient (level of the iliac crest mid auxiliary line) Measure IAP by placing the zero point of the tubing where the mid auxiliary line crosses the symphysis pubis



- **Lay the patient flat (supine position).** Open the **red tube clamp** and read the level of the urine in the pressure monitoring tubing at end expiration **and lowest value** when the urine level has stabilised (usually takes less than 10seconds)



- Close the **red tube clamp** and place the intra-abdominal pressure measuring system around the patients legs without 'hoops'



**IAP Pressures should be:**

- Documented on the [SW MR146A](#) in mmHg
- Measured at end expiration
- Performed in the supine position
- Measured at the level of the iliac crest mid auxiliary line
- Should **NOT** be used on paediatric patients weighing less than 10kg

- For aneuric patients, if no liquid is present the system may be primed each time to obtain a reading. To maintain a closed system product literature recommends should not be primed more than 10 times

#### **NOTE**

Replace the intra-abdominal pressure measuring device when the indwelling catheter or urine meter is replaced.

Never use the system for **more** than 7 days.

### **2.3 Management IAH and ACS**

Appropriate medical interventions are dependent on patient condition and risk factors and may include surgical, pharmacological, technical and medical interventions.

#### **2.3.1 Evacuate intraluminal contents**

- Nasogastric/rectal tube
- Prokinetic agents (increase gastric motility)
- Enemas/aperients

#### **2.3.2 Evacuate intra-abdominal space occupying lesions**

- Imaging
- Draining of ascites
- +/- surgical evacuation of blood/hematoma/lesion/abscesses

#### **2.3.3 Improve abdominal wall compliance**

- Adequate sedation/analgesia
- Remove constrictive dressings/bandages
- Neuromuscular blockade (muscle relaxants)

#### **2.3.4 Nursing Management**

Patients with elevated intra-abdominal pressure require focused nursing assessment and interventions.

Nursing management includes monitoring of organ function and early identification of organ failure, pain and anxiety management.

Assessment of peripheral perfusion particularly the lower extremities, wound assessment and management, and careful fluid administration i.e. do not over resuscitate, avoid unneeded fluid boluses and aim for a neutral to negative fluid balance.

Do not position prone try repositioning bed in reverse Trendelenburg without flexion at the hips.

**If IAP > 25mmHg with new organ dysfunction and is refractory to medical management, consider Surgical review to plan decompressive laparotomy if all other interventions fail.**

### 3. Definitions

<b>Intra-abdominal pressure (IAP)</b>	Steady state pressure concealed within the abdominal cavity.
<b>Intra-abdominal hypertension (IAH)</b>	Sustained or repeated pathological elevation in IAP > or = to 12mmHg.
<b>Abdominal compartment syndrome (ACS)</b>	Sustained IAP > 20mmHg that is associated with new organ failure/dysfunction.

<b>IAH Grading</b>	
<b>Grade I</b>	IAP 12-15mmHg
<b>Grade II</b>	IAP 16-20mmHg
<b>Grade III</b>	IAP 21-25mmHg
<b>Grade IV</b>	IAP > 25mmHg

### 4. Roles and Responsibilities

All ACHS clinicians are accountable for their own practice and are to provide care:

- Within their registration status
- In accordance with the codes and guidelines approved by their relevant National Board supported by AHPRA
- Within their prescribed responsibilities and duties as defined in their Job Description Form (JDF)
- Within the context of practice that they are operating.

### 5. Compliance

Failure to comply with this policy document may constitute a breach of the WA Health Code of Conduct (Code). The Code is part of the [Integrity Policy Framework](#) issued pursuant to section 26 of the [Health Services Act 2016](#) (WA) and is binding on all WACHS staff which for this purpose includes trainees, students, volunteers, researchers, contractors for service (including all visiting health professionals and agency staff) and persons delivering training or education within WACHS.

WACHS staff are reminded that compliance with all policies is mandatory.

### 6. Records Management

All WACHS clinical records must be managed in accordance with [Health Record Management Policy](#).

### 7. Evaluation

Monitoring of compliance with this document is to be carried out by the Clinical Nurse Specialist Intensive Care Unit, every two years.

## 8. Standards

### National Safety and Quality Health Service Standards

Clinical Governance Standard: 1.7, 1.27

Preventing and Controlling Healthcare-Associated Infection Standard: 3.8, 3.9, 3.10

Communicating for Safety Standard: 6.11

Recognising and Responding to Acute Deterioration Standard: 8.4, 8.6

## 9. Legislation

Health Practitioner Regulation National Law (WA) Act 2010

## 10. References

1. Alfred Health. Intra-abdominal Pressure Measurement Guideline.
2. Critically Ill Patient Management in Intensive Care Unit NPS. 21<sup>st</sup> February, 2019.
3. Convatec. Product Brochure 'Determine the risk of IAH and ACS- before the life-threatening complications begin'. Copyright 2009.
4. Convatec. Product poster. 'Instructions for use UnoMeter™ Abdo-Pressure™'. Copyright November 2014.
5. Gestring M. Abdominal compartment syndrome in adults. Up to Date, January 2018. Accessed from internet 13<sup>th</sup> August 2018.
6. Western Nurse. "Update: intra-abdominal pressure monitoring. January- February 2016.

## 11. Related Forms

SW MR146A Bunbury Hospital – ICU 24 Hour Flow Chart (Intensive Care Unit)

## 12. Related Policy Documents

WACHS Aseptic Technique Policy

## 13. Related WA Health System Policies

Nil

## 14. Policy Framework

Clinical Governance, Safety and Quality

**This document can be made available in alternative formats  
on request for a person with a disability**

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