Statewide Anaesthesia and Perioperative Care Clinical Network (SWAPNet)

Preoperative investigations guideline

1. Statement

Preoperative investigations should not be ordered routinely\(^1\). Perioperative investigations should be tailored to the individual patient’s needs and the surgery they are undergoing.

The implementation of guidelines requires planning and a well thought out process to gain compliance. A change management and communication plan may also be necessary to achieve uptake. The SWAPNet guideline on ‘Pre-anaesthetic Evaluation Framework Implementation Guideline’ has been developed to assist hospital and health services in the implementation process.

2. Purpose

- To provide guidance in the management of preoperative investigations
- To ensure an individual approach to preoperative management
- To reduce unnecessary ordering of tests and investigations where not indicated.

3. Scope

This guideline applies to perioperative testing for all adult patients undergoing elective surgery in a Queensland Health facility. The guideline is based on patient’s co-morbidities and the complexity of the surgical procedure being undertaken.

4. Related documents

SWAPNet Pre-anaesthetic Evaluation Framework Implementation Guideline
SWAPNET Triage Guidelines for Pre-anaesthetic Evaluation
Adult Integrated Pre-Procedure Screening Tool
Australian and New Zealand Society of Blood Transfusion Ltd, Royal College of Nursing Australia, Guidelines for the Administration of Blood Products
ANZCA guidelines on Pre-Anaesthesia Consultation and Patient Preparation (PS07)
Guideline - 2 -

Document details

Document title: Perioperative Investigations Guideline
Publication date: 1 October 2017
Review date: 30 September 2020 (or as required)
Amendments: Full version history is detailed on page
Author: Statewide Anaesthesia and Perioperative Care Clinical Network
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Disclaimer:
These guidelines have been prepared to promote and facilitate standardisation and consistency of practice, using a multidisciplinary approach. Information in this guideline is current at time of publication.

Queensland Health does not accept liability to any person for loss or damage incurred as a result of reliance upon the material contained in this guideline.

Clinical material offered in this guideline does not replace or remove clinical judgement or the professional care and duty necessary for each specific patient case.

Clinical care carried out in accordance with this guideline should be provided within the context of locally available resources and expertise.

This Guideline does not address all elements of standard practice and assumes that individual clinicians are responsible to:

• Discuss care with consumers in an environment that is culturally appropriate and which enables respectful confidential discussion. This includes the use of interpreter services where necessary
• Advise consumers of their choice and ensure informed consent is obtained
• Provide care within scope of practice, meet all legislative requirements and maintain standards of professional conduct
• Apply standard precautions and additional precautions as necessary, when delivering care.
• Document all care in accordance with mandatory and local requirements.

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For further information contact the Statewide Anaesthesia and Perioperative Care Clinical Network (SWAPNet), PO Box 128, RBWH Post Office, Herston Qld 4029, email SWAPNET@health.qld.gov.au, phone (07) 3328 9164. For permissions beyond the scope of this licence contact: Intellectual Property Officer, Queensland Health, GPO Box 48, Brisbane Qld 4001, email ip_officer@health.qld.gov.au, phone (07) 3234 1479.
5. **Guideline for pre-operative investigations**

Pre-operative evaluation is an important component of the peri-operative management of elective surgery patients and ideally should occur following referral for surgery. Ordering of preoperative tests occurs before surgical procedures to check for conditions that may affect treatment. This can assist the anaesthetist and surgeon to make decisions regarding the course of treatment and pre and/or post-operative management. Perioperative tests can sometimes be ordered unnecessarily, this can cause delays in treatment and inefficiency in planning surgical care. Inappropriate ordering of routine preoperative tests can also lead to high costs of health care.

This guideline covers routine preoperative tests for adults who are having elective surgery. It aims to reduce unnecessary testing by providing guidance on which tests to offer before minor, intermediate and major or complex surgery.

6. **Recommendations relevant to all patients**

6.1 **Pregnancy testing**

All women of childbearing age should be sensitively questioned on the day of surgery as to whether there is a possibility that they could be pregnant.

Women who could possibly be pregnant should be informed of the risks and a pregnancy test should be discussed.

Pregnancy tests should be carried out on all women who may be pregnant with their consent. Any relevant discussions should be documented in the clinical notes.

There should be locally agreed policies on the administration and checking of pregnancy tests prior to surgery.

6.2 **HBA1c**

Should not be carried out on patients without known diabetes.

Should be checked in patients with diabetes HBA1c (if their diabetes is stable) and it hasn’t been checked in the last 6 months.

Should be checked in patients with diabetes HBA1c (if their diabetes is unstable) and it hasn’t been checked in the last 3 months.

6.3 **Chest X-ray**

Should not be routinely performed prior to surgery.

6.4 **Resting 2D Echocardiography**

Should not be ordered routinely.

Recommended in patients with clinically suspected moderate or greater degrees of valvular heart disease as well as known or suspected moderate to severe pulmonary hypertension, if an Echo has not been performed within the past 12 months or a significant change clinical status or physical examination as occurred. Should be discussed with a medical practitioner before an investigation is ordered.

6.5 **Polysomnography/sleep studies**

Surgery should not be delayed or cancelled to formally diagnose OSA in patients identified as high risk of OSA preoperatively unless there is evidence of uncontrolled systemic disease or additional problems with ventilation or gas exchange.

Screening tools such as STOP-Bang, P-SAP, Berlin and ASA checklist can be used as preoperative screening tools to identify patients with suspected OSA.
7. Recommendations for specific surgery grades and ASA grades

7.1 Surgical grades

<table>
<thead>
<tr>
<th>Surgical Grade</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minor</td>
<td>Excision of skin lesion, Myringotomy tubes, Hysteroscopy, Endoscopy/Colonoscopy</td>
</tr>
<tr>
<td>Intermediate</td>
<td>Hernia Repair, Laparoscopic Cholecystectomy, Arthroscopy, Tonsillectomy</td>
</tr>
<tr>
<td>Major/Complex</td>
<td>Total abdominal hysterectomy, TURP, Thyroidectomy, Joint replacement, Colonic resection</td>
</tr>
</tbody>
</table>

7.2 ASA grades

<table>
<thead>
<tr>
<th>ASA 1</th>
<th>A normal healthy patient</th>
<th>No medical co-morbidities</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASA 2</td>
<td>A patient with mild systemic disease</td>
<td>Eg. Controlled hypertension, Diabetes without end organ damage, well controlled asthma</td>
</tr>
<tr>
<td>ASA 3</td>
<td>A patient with severe systemic disease</td>
<td>Eg. Poorly controlled diabetes, Severe COPD, Morbid Obesity, CVA</td>
</tr>
<tr>
<td>ASA 4</td>
<td>A patient with severe systemic disease that is a constant threat to life</td>
<td>Eg. Recent CVA/MI, Severe valvular heart disease</td>
</tr>
</tbody>
</table>

7.3 Minor surgery

<table>
<thead>
<tr>
<th>Test</th>
<th>ASA 1</th>
<th>ASA 2</th>
<th>ASA 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete Blood Count</td>
<td>Not Routinely</td>
<td>Not Routinely</td>
<td>Not Routinely</td>
</tr>
<tr>
<td>Coagulation Screen (If clotting status needs to be tested prior to surgery consider using point of care testing)</td>
<td>Not Routinely</td>
<td>Not Routinely</td>
<td>Not Routinely</td>
</tr>
<tr>
<td>Renal Function</td>
<td>Not Routinely</td>
<td>Not Routinely</td>
<td>Consider in patients at risk of AKI</td>
</tr>
<tr>
<td>ECG</td>
<td>Not Routinely</td>
<td>Not Routinely</td>
<td>Yes if not done in last 12 Months</td>
</tr>
<tr>
<td>Spirometry</td>
<td>Not Routinely</td>
<td>Not Routinely</td>
<td>Not Routinely</td>
</tr>
</tbody>
</table>

7.4 Intermediate surgery

<table>
<thead>
<tr>
<th>Test</th>
<th>ASA 1</th>
<th>ASA 2</th>
<th>ASA 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete Blood Count</td>
<td>Not Routinely</td>
<td>Not Routentially</td>
<td>Consider for people with cardiovascular or renal disease if any symptoms not recently investigated</td>
</tr>
<tr>
<td>Coagulation Screen (If clotting status needs to be tested prior to surgery, consider using point of care testing)</td>
<td>Not Routentially</td>
<td>Not Routentially</td>
<td>Consider in patients with chronic liver disease</td>
</tr>
<tr>
<td>Renal Function</td>
<td>Not Routentially</td>
<td>Consider in patients at risk of AKI</td>
<td>Yes</td>
</tr>
<tr>
<td>ECG</td>
<td>Not Routentially</td>
<td>Not Routentially</td>
<td>Yes</td>
</tr>
<tr>
<td>Spirometry</td>
<td>Not Routentially</td>
<td>Not Routentially</td>
<td>Not Routentially</td>
</tr>
</tbody>
</table>
**ECG** | Not Routinely | Consider in patients with diabetes, cardiovascular or renal co-morbidities | Yes
---|---|---|---
**Spirometry** | Not Routinely | Not Routinely | Yes if respiratory disease contributing to ASA status

### 7.5 Major or complex surgery

<table>
<thead>
<tr>
<th>Test</th>
<th>ASA 1</th>
<th>ASA 2</th>
<th>ASA 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete Blood Count</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Coagulation Screen (If clotting status needs to be tested prior to surgery consider using point of care testing)</td>
<td>Not Routinely</td>
<td>Not Routinely</td>
<td>Consider in patients with chronic liver disease</td>
</tr>
<tr>
<td>Renal Function</td>
<td>Consider in patients at risk of AKI</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>ECG</td>
<td>Consider for people aged over 65 if no ECG in last 12 Months</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Spirometry</td>
<td>Not Routinely</td>
<td>Not Routinely</td>
<td>Yes if respiratory disease contributing to ASA status</td>
</tr>
</tbody>
</table>

### 8. Patients at risk of AKI
Increased risk of acute kidney injury is associated with:

- Intra peritoneal surgery
- Chronic kidney disease
- Diabetes
- Heart failure
- Age greater than 65
- Liver disease

### 9. Other

#### 9.1 Cataract surgery under topical/regional anaesthesia

No investigations indicated.

#### 9.2 Maximum surgical blood order schedule (MBOS)

The Australian & New Zealand Society of Blood Transfusion Ltd has published guidelines on blood ordering for specific surgical procedures. This is intended as a guide only. Local hospitals will need to assess the usual red cell requirement for each procedure, in conjunction with the surgeons.

### 10. Clinical references


5. Routine preoperative tests for elective surgery; NICE Guidelines (April 2016)


11. Hospital and health service responsibilities and processes

When ordering pre-operative testing, hospital and health service staff should consider:

- Time relevance and cost implications associated with completing perioperative testing
- Minimum requirements for perioperative testing
- Adequate coordination of patients

12. Compliance monitoring and outcome evaluation

In the outpatient environment, audits / evaluations should be completed on an annual basis or as required to:

- Identify the deviations in compliance with the guideline and monitor preoperative testing prescribing

13. Version control

<table>
<thead>
<tr>
<th>Version No.</th>
<th>Modified by</th>
<th>Amendment schedule</th>
<th>Approved by</th>
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<tbody>
<tr>
<td>v0.1</td>
<td>Dr Owain Evans and Ms Corrina Green</td>
<td>Initial draft</td>
<td>Ivan Rapchuk and Sandra Lenehan, Co-Clinical Chairs, SWAPNet</td>
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<tr>
<td>v0.2</td>
<td>Dr Owain Evans</td>
<td>Revised following consultation</td>
<td>Ivan Rapchuk and Sandra Lenehan, Co-Clinical Chairs, SWAPNet</td>
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<tr>
<td>v0.3</td>
<td>Ms Karen Hamilton</td>
<td>Reviewed for editing and compliance with Queensland Health policy / guidelines</td>
<td>Ivan Rapchuk and Sandra Lenehan, Co-Clinical Chairs, SWAPNet</td>
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<tr>
<td>v1.0</td>
<td>Ms Karen Hamilton</td>
<td>Endorsed on 1 September 2017</td>
<td>SWAPNet Steering Committee</td>
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14. Policy custodian

Deputy Director-General, Clinical Excellence Division
Effective from: 1 October 2017