Guideline

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)

Document details

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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.

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[2].

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 OSA6.

7. Recommendations for specific surgery grades and ASA grades

7.1 Surgical grades

Surgical Grade	Examples
Minor	Excision of skin lesion Myringotomy tubes Hysteroscopy Endoscopy/Colonoscopy
Intermediate	Hernia Repair Laparoscopic Cholecystectomy Arthroscopy Tonsillectomy
Major/Complex	Total abdominal hysterectomy TURP Thyroidectomy Joint replacement Colonic resection

7.2 ASA grades

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

7.3 Minor surgery

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

7.4 Intermediate surgery

Test	ASA 1	ASA 2	ASA 3
Complete Blood Count	Not Routinely	Not Routinely	Consider for people with cardiovascular or renal disease if any symptoms not recently investigated
Coagulation Screen (If clotting status needs to be tested prior to surgery, consider using point of care testing)	Not Routinely	Not Routinely	Consider in patients with chronic liver disease
Renal Function	Not Routinely	Consider in patients at risk of AKI	Yes

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

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

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[3].

9.2 Maximum surgical blood order schedule (MBOS)4

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

1. Committee on S, Practice P, Apfelbaum JL, Connis RT, Nickinovich DG, American Society of Anesthesiologists Task Force on Preanesthesia E, et al. Practice advisory for preanesthesia evaluation: an updated report by the American Society of Anesthesiologists Task Force on Preanesthesia Evaluation. Anesthesiology. 2012;116(3):522-38.

2. Fleisher LA, Fleischmann KE, Auerbach AD, Barnason SA, Beckman JA, Bozkurt B, et al. 2014 ACC/AHA guideline on perioperative cardiovascular evaluation and management of patients undergoing noncardiac surgery: a report of the American College of Cardiology/American Heart Association Task Force on practice guidelines. J Am Coll Cardiol. 2014;64(22):e77-137.
3. Chen CL, Lin GA, Bardach NS, Clay TH, Boscardin WJ, Gelb AW, et al. Preoperative medical testing in Medicare patients undergoing cataract surgery. N Engl J Med. 2015;372(16):1530-8.
4. Scientific Subcommittee ANZSoBTL. Guidelines for Pretransfusion laboratory practice. Sydney Australian & New Zealand Society of Blood Transfusion Ltd; 2007.
5. Routine preoperative tests for elective surgery; NICE Guidelines (April 2016)
6. International Anesthesia Research Society (2016), *Society of Anaesthesia and Sleep Medicine Guidelines on Preoperative Screening and Assessment of Adult Patients with Obstructive Sleep Apnea,* Volume 123, Issue 2 <http://journals.lww.com/anesthesia-analgesia/Fulltext/2016/08000/Society_of_Anesthesia_and_Sleep_Medicine.22.aspx>, accessed 1/2/17.

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

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

14. Policy custodian

Deputy Director-General, Clinical Excellence Division

Effective from: 1 October 2017