Local Guideline

Health
Hunter New England
Local Health District

Document number: JHH_0453

Referrals for rapid respiratory review before elective surgery

Sites where Local Guideline applies	**John Hunter Hospital**
Target audience	Perioperative doctors and nurses, respiratory doctors and nurses.
This Local Guideline applies to:	
1. Adults	Yes
2. Children up to 16 years	No
3. Neonates – less than 29 days	No
Description	This guideline seeks to streamline the process for referral of patients with severe respiratory disease before elective surgery.
Keywords	Perioperative, respiratory rapid access, postoperative pulmonary complications

Go to Guideline

Replaces existing document?	No

Relevant or related Documents, Australian Standards, Guidelines etc:

- NSW Health Policy Directive PD2017_032 Clinical Procedure Safety
- HNELHD Policy Compliance Procedure PPM Consent:PCP 3 Consent for Clinical Treatment and Care
- NSW Health Policy Directive PD 2017_013 Infection Prevention and Control Policy
- Work Health and Safety Act 2011 no. 10
- NSW Health Policy Directive PD2012_069 Health Care Records – Documentation and Management
- HNE Health Policy Compliance Procedure PD2009_060: PCP1 Clinical Handover – ISBAR
- HNELHD Policy Pol 18_03 Aseptic Technique for Level 1 to Level 2 Procedures Conducted in Clinical Settings
- Local procedure JHH_JHCH_BH_0193 Standard Aseptic Technique
- NSW Health Policy Directive 2013_049 Recognition and management of Patients who are Clinically Deteriorating
- HNE LHD Policy Compliance Procedure Recognition and Management of Patients who are Clinically Deteriorating PD2013_049:PCP 1
- HNE LHD PD2013_049 PCP2 Vital Sign Observations & Monitoring Frequency 16 Years and Over
- See Reference Section on page 4

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Local Guideline note	This document reflects what is currently regarded as safe and appropriate practice. This guideline does not replace the need for the application of clinical judgment in respect to each individual patient. If staff believe that the guideline should not apply in a particular clinical situation they must seek advice from their unit manager/delegate and document the variance in the patient's health record. If this document needs to be utilised outside of the John Hunter Hospital please liaise with the local Perioperative and Respiratory Services to ensure the appropriateness of the information contained within the Guideline and Procedure.
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Authorised by:	Clinical Quality Patient Care Committee
This document contains advice on therapeutics	No
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Position responsible for review:	Perioperative Co-Director
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PURPOSE AND RISKS

Respiratory disease is common in our community and severe respiratory disease has been identified as an independent predictor of adverse outcomes after surgery, specifically postoperative pulmonary complications (POPC).[1] Even mild POPC are associated with adverse perioperative outcomes such as mortality, length of stay and intensive care admission.[2]

Delays to surgery to optimise respiratory health are sometimes necessary but can lead to inadvertent costs to the patient and healthcare system, and should be considered in terms of the surgical pathology, patient age, comorbidities and expected improvements of their baseline lung disease and function.

This document provides guidance as to how to assess a patient with respiratory disease preoperatively and advises on which patients should be referred for urgent Respiratory Team review prior to surgery.

The diagnosis and management of sleep disordered breathing is not addressed in this guideline.

Risk Category*:* Clinical Care & Patient Safety

GLOSSARY

Acronym or Term	Definition
Abx	Antibiotics
COPD	Chronic obstructive pulmonary disease
DLCO	Diffusing capacity for carbon monoxide
FEV_1	Forced expiratory volume in 1 second
GP	General practitioner
ICU	Intensive care unit
PO	Per oral
LRTI	Lower respiratory tract infection
mMRC	Modified Medical Research Council
OT	Operating theatre
PFTs	Pulmonary function testing
SOB	Shortness of breath

John Hunter Hospital / Service Manager Responsibility

- Ensure that the principles and requirements of this procedure are applied, achieved and sustained
- Ensure effective response to, and investigation, of alleged breaches of this procedure.
- Ensure all staff have completed My Health Learning online module Introduction to Safety and Quality (course number 42189807)
- Notify staff of all new and revised local procedures and guidelines through the JHH Newsletter

Line management responsibility

- Notify staff of new and revised policies, procedures and guidelines relevant to the workplace / unit / clinical specialty.
- Post the JHH newsletter (with policy, procedure and guideline updates) in staff rooms
- Identify high clinical risks relevant to patient population of unit/specialty and undertake audits of compliance with relevant policies, procedures or guidelines.

Employee responsibility

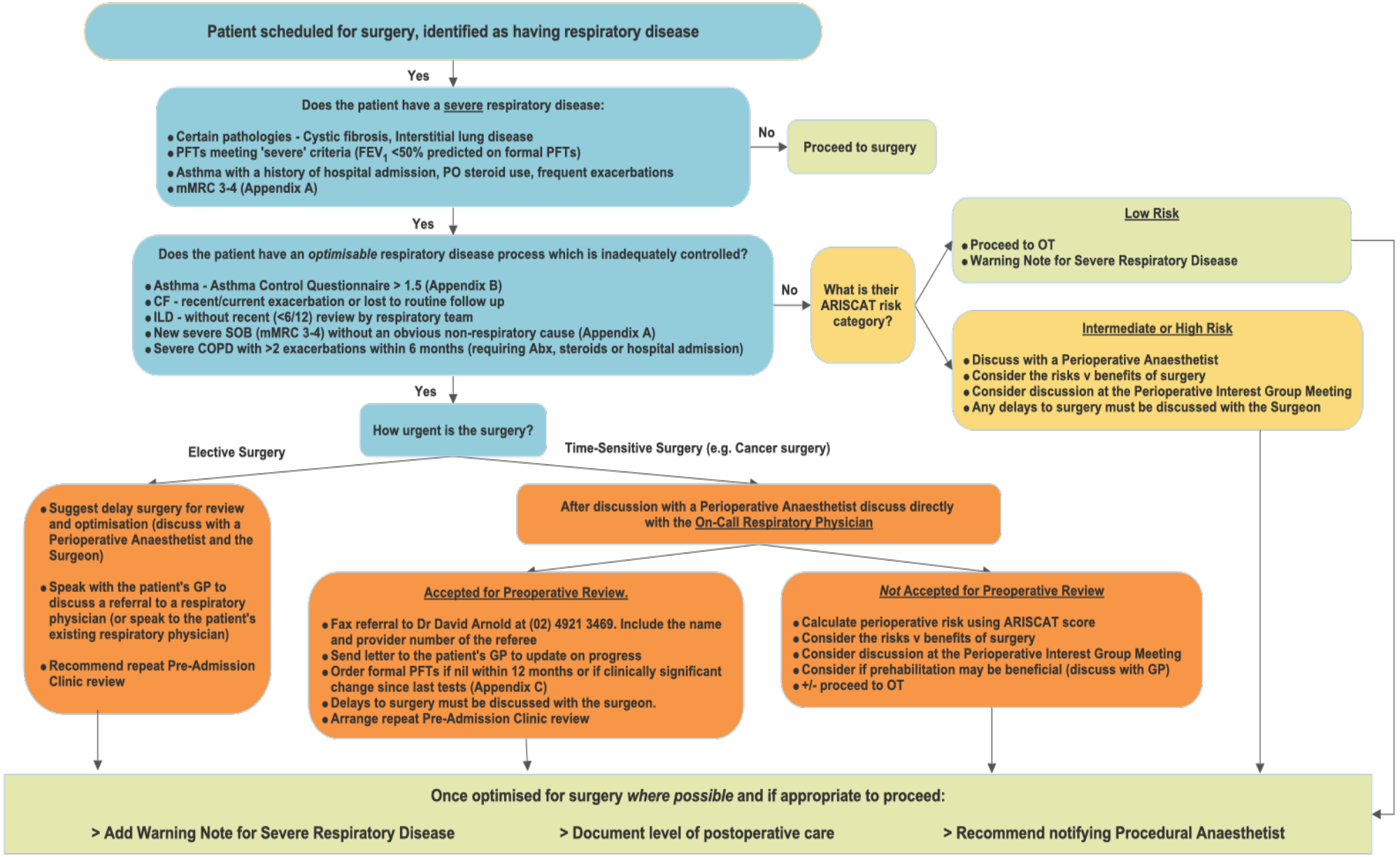
Staff must:

- Comply with policies, procedures and guidelines applying to their workplace / unit / specialty
- Report unsafe practices, equipment or environment to line manager
- Escalate any patient safety concerns to line manager, including if it is assessed that policies, procedures or guidelines do not reflect contemporary practice

GUIDELINE

This Guideline does not replace the need for the application of clinical judgment in respect to each individual patient.

Preoperative Assessment of the Patient with Respiratory Disease



Additional points for consideration:

- **Pulmonary Functional Testing**
  - There is a limited range of indications for bedside spirometry in the Pre-Admission Clinic, if formal PFTs are not already available within the past 12 months (see the JHH Perioperative Spirometry Local Guideline for more detailed information)
    - **Surgery type:** Intrathoracic surgery; Major open intra-abdominal surgery (e.g. Oesophagectomy, AAA)
    - **Patient factors:** Patients with COPD or smokers having intermediate or major surgery; Patients with known respiratory disease who may not be at their baseline; Diagnosis and categorisation of respiratory disease.
  - For patients with severe disease having major intraabdominal or intrathoracic surgery, and before review by the Respiratory Physicians, formal pulmonary functional tests are recommended.
  - Nb. If the patient meets the severe criteria on bedside spirometry, formal PFTs are recommended.
  - See the Respiratory Function Testing form at Appendix D. *Note that lung volume studies are not required in this setting.*

- **Medication changes:**
  - Excluding the provision of NRT, other medication changes should usually be made by the patient's GP (or respiratory physician), who has a more comprehensive knowledge of previously attempted management strategies and who will remain the patient's central point of contact.
  - If you believe a medication change is indicated, contact the GP by phone or letter to discuss this with them, and ask the patient to make an appointment to see them.

- **Smoking cessation:**
  - Evidence suggests reductions to perioperative risks can be achieved within several weeks of smoking cessation[3] and there is no evidence of harm from smoking cessation in the short-term preoperative period.[4]
  - Patients should be encouraged to quit smoking as the perioperative period represents a teachable moment where the patient is attuned to positive health messaging.
  - Nicotine replacement therapy can be distributed from clinic.
  - The patient may be directed towards resources to assist with quitting smoking at www.quit.org.au

For all patients:

- Document a comprehensive care plan in consultation with patient/family including patient goals and preferences, including advance care preferences.
- Ensure patient/family is aware of agreed goals and plan of care and that this is reviewed with patient/family at clinical handover.

APPENDICES

Appendix A – Modified Medical Research Council Dyspnoea Scale

Appendix B – Asthma Control Questionnaire

Appendix C – ARISCAT risk prediction for postoperative pulmonary complications

Appendix D – Respiratory Function Request Form

REFERENCES

1. Gupta H, et al. Impact of COPD on postoperative outcomes: results from a national database. *Chest*. 2013 Jun; 143(6):1599-1606. doi: 10.1378/chest.
2. Fernandez-Bustamante A, et al. *JAMA Surg*. 2017 Feb;152(2):157–166. doi:10.1001/jamasurg.2016.4065
3. Wong J, et al. Short-term preoperative smoking cessation and postoperative complications: a systematic review and meta-analysis. *Can J Anaesth.* 2012;59:268-279 DOI 10.1007/s12630-011-9652-x
4. Myers K, et al. Stopping smoking shortly before surgery and postoperative complications. *Arch Intern Med* 2011;171(11):983-989 doi:10.1001/archinternmed.2011.97
5. Juniper E, et al. Development and validation of a questionnaire to measure asthma control. *Eur Respi J.* 1999;13:902-907 DOI: 10.1034/j.1399-3003.1999.14d29.x
6. Mazo V, et al. Pospective external validation of a predictive score for postoperative pulmonary complications. *Anesth.* 2014;121:219-231 doi.org/10.1097/ALN.0000000000000334

Useful Links

John Hunter Hospital - Lung Foundation Australia

www.quit.org.au

Appendix A – Modified Medical Research Council Dyspnoea Scale

Grade	Description of breathlessness
0	I only get breathless with strenuous exercise
1	I get short of breath when hurrying on level ground or walking up a slight hill
2	On level ground, I walk slower than people of the same age because of breathlessness, or have to stop for a breath when walking at my own pace
3	I stop for breathing after walking about 100 yards of after a few minutes on level ground
4	I am too breathless to leave the house or I am breathless when dressing

Appendix B - Asthma Control Questionnaire[5]

ASTHMA CONTROL QUESTIONNAIRE©
(ENGLISH VERSION FOR AUSTRALIA)

PATIENT ID:_____

DATE:_____

Page 1 of 1

Please answer questions 1 - 5.

Circle the number of the response that best describes how you have been in the last week.

1.	On average, in the last week, how often were you **woken by your asthma** during the night?	0 Not at all 1 Hardly ever 2 A few times 3 Several times 4 Many times 5 A great many times 6 Unable to sleep because of asthma
2.	On average, in the last week, how **were your asthma symptoms when you woke up** in the morning?	0 No symptoms 1 Very mild symptoms 2 Mild symptoms 3 Moderate symptoms 4 Quite severe symptoms 5 Severe symptoms 6 Very severe symptoms
3.	In general, in the last week, how **limited were you in your day-to-day activities** because of your asthma?	0 Not at all limited 1 Very slightly limited 2 Slightly limited 3 Moderately limited 4 Very limited 5 Extremely limited 6 Totally limited
4.	In general, in the last week, how much **shortness of breath** did you experience because of your asthma?	0 None 1 Very little 2 A little 3 A moderate amount 4 Quite a lot 5 A great deal 6 An extreme amount
5.	In general, in the last week, how often did you **wheeze**?	0 None of the time 1 Hardly any of the time 2 A little of the time 3 A moderate amount of the time 4 A lot of the time 5 Most of the time 6 All the time

ACQ-5 - Australia/English - Version of 22 Sep 2017 - Mapi.
ID058553 / ACQ-5_AU1.0_eng-AU.doc

Sum of all answers =	Sum of all answers ÷ 5 = (score)

Note that a score of > 1.5 is the cut point which indicates inadequately controlled asthma.

Appendix C – ARISCAT risk prediction for postoperative pulmonary complications

ARISCAT is a scoring system to predict postoperative pulmonary complications including respiratory failure, respiratory infection, pleural effusion, atelectasis, pneumothorax, bronchospasm and aspiration pneumonitis.[6]

Consider using ARISCAT scoring (available at mdcalc.com) and stratify into low versus moderate/high risk. This information can be used to guide shared decision making with patients about appropriateness and invasiveness of surgery, and level of postoperative care.

Available from ARISCAT Score for Postoperative Pulmonary Complications - MDCalc

Factor for consideration	**Responses (points allocated)**		
Age, years	≤50 (0)	51-80 (3)	>80 (16)
Preoperative SpO_2	≥96% (0)	91-95% (8)	≤90% (24)
Respiratory infection in the last month (either upper or lower, with fever and antibiotic treatment)	No (0)	Yes (17)	
Preoperative anaemia (Hb ≤100g/L)	No (0)	Yes (11)	
Surgical incision	Peripheral (0)	Upper abdominal (15)	Intrathoracic (24)
Duration of surgery	<2 hours (0)	2-3 hours (16)	>3 hours (23)
Emergency procedure	No (0)	Yes (8)	

Total points (risk stratum)	**< 26 (Low risk)**	**26-44 (Intermediate risk)**	**≥ 45 (High risk)**

Appendix D – Respiratory Function Request

Respiratory Function Request

Fax to: (02) 4921 3469 Phone: (02) 4921 3462

Appt date: ____/____/____

Appt time: _____

Pulmonary Function Laboratory
Department of Respiratory & Sleep Medicine
John Hunter Hospital, Lookout Road, New Lambton, NSW 2305
Drs M Hensley, N Saltos, P Gibson, D Arnold, P Wark & S Pradeepan

Indicate tests required – please circle
(PTO for test information and contraindications)
Tests 1-8 take 15 minutes per test; tests 9-13 take 45 minutes per test

1. Spirometry / Flow-volume Curves Pre and/or post BD **(see note A)**
2. TLCO (Transfer factor, diffusing capacity)
3. Plethysmographic Lung Volumes
4. Exhaled Nitric Oxide (eNO)
5. Maximal Respiratory Pressures
6. 6-Minute Walk Test ☐ On and off O_2 comparison **(see note B)**
7. Arterial Blood Gases
8. Skin Prick Testing **(see note C)**
9. Hypertonic Saline Challenge **(see notes C and D)**
10. Sputum induction (using hypertonic saline)
11. Cardiopulmonary Exercise Test (CPX) **(see note B)**
12. Exercise Provocation Testing **(see notes B, C and D)**
13. Altitude Simulation Testing
14. Overnight Oximetry ☐ Room air ☐ Other_____
15. Other, specify:

PATIENT INSTRUCTIONS

A. On the day of these tests, inhaled medications should be avoided unless absolutely necessary.

B. Tests 6, 11 & 12 involve either walking or cycling exercise – clothes suitable for exercise should be worn (i.e. comfortable shoes and no skirts/dresses)

C. Antihistamines should be avoided for 5 days prior

D. Inhaled medications should be avoided for length of action

Surname: MRN:

Other names:

Address:

DOB: Sex: Male/Female

Phone:

Referring MO (print):

Report to:

Cc:

Clinical Notes/Reason for Referral:

Signed:_____ ___/___/___