




**NHS**

**The Queen Elizabeth  
Hospital King's Lynn**  
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## Overnight pulse oximetry direct from pre-assessment clinic

Dr Jake Suett, Specialty Doctor in Anaesthetics

7<sup>th</sup> May 2024



**EXCELLENCE  
STARTS HERE**  
*with you*



**Table 4**

**Unadjusted incidence rates and adjusted odds ratios (OR) of postoperative cardiopulmonary complications for treated and untreated obstructive sleep apnoea patients (Treatment= CPAP)**

Outcome	No OSA	OSA Untreated	OSA Treated	Adjusted OR
Any cardiopulmonary complication	4.9%	6.4%	4.2%	1.8
Postoperative myocardial infarct	0.6%	1.4%	0.6%	2.6
Unplanned reintubation	1.8%	2.7%	1.4%	2.5
Postoperative arrhythmia	1.5%	1.6%	1.4%	1.4
Postoperative cardiac arrest	0.6%	0.9%	0.4%	2.5

Adjusted OR compares patients with OSA who are treated and untreated.

Abdelsattar ZM, Hendren S, Wong SL, Campbell DA Jr, Ramachandran SK. The Impact of Untreated Obstructive Sleep Apnea on Cardiopulmonary Complications in General and Vascular Surgery: A Cohort Study. *Sleep*. 2015 Aug 1;38(8):1205-10. doi: 10.5665/sleep.4892. PMID: 25761980; PMCID: PMC4507725.

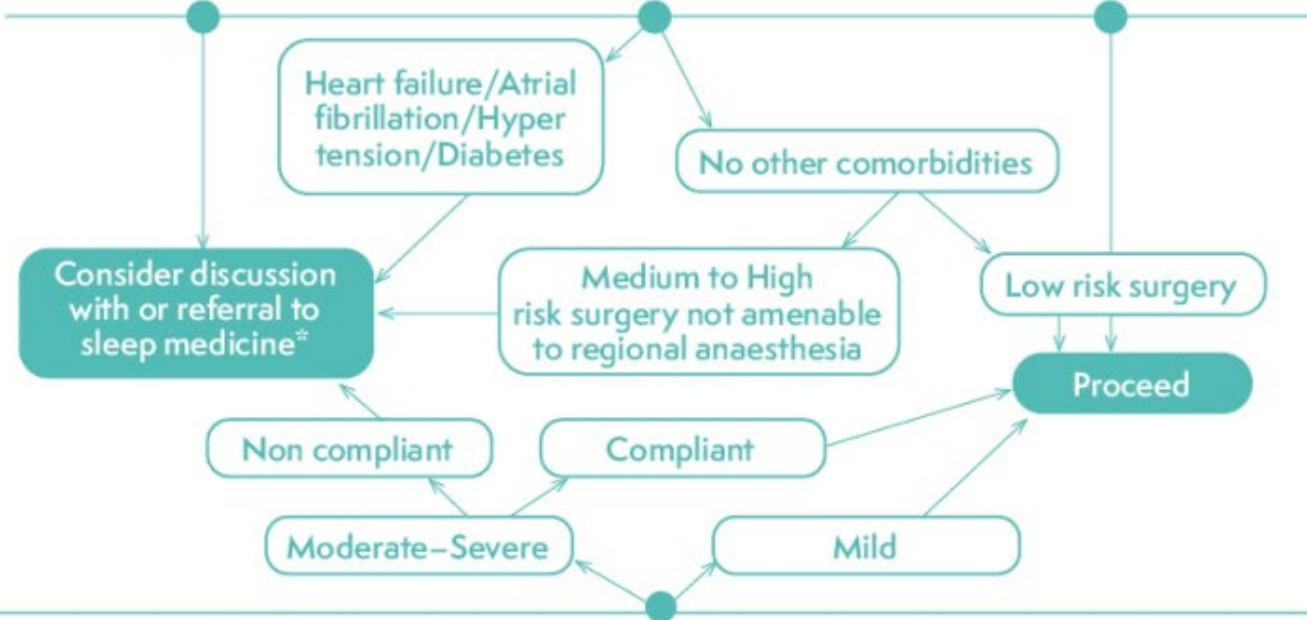
## Preoperative Phase 2

Patients without an existing diagnosis of OSA should be screened via the STOP-BANG questionnaire and risk stratified according to risk score:

STOP-BANG SCORE:  $\geq 5$

3-4 (Moderate risk)

$\leq 2$  (Low risk)



For patients with a diagnosis of OSA, assess disease control and compliance with treatment

\*Develop streamlined pathways between perioperative services and sleep medicine Establishing home oximetry testing from perioperative clinic can improve screening accuracy and pathway efficiency

## July 2023: Issues

Patient complaints and reduced satisfaction

Risk of cancellation on day, reduced theatre efficiency and associated costs

Longer waits for surgery

Medical inpatients not able to access overnight oximetry as devices being used by pre-assessment patients resulting in increased length of stay

Increased booking of HDU beds and associated costs



# Financial implications

£2514 over just a few months (HDU bed is £1173/night)

Plus time taken to respond to complaints

2 medical inpatient bed nights used by medical patients awaiting sleep studies after weaning from NIV as no devices available

Respiratory nurse time phoning patients following referral from pre-assessment to arrange time to pick up device etc approx. 1-2 hours/week

Refer to respiratory nurse by email



Call from respiratory nurse to arrange collection of device



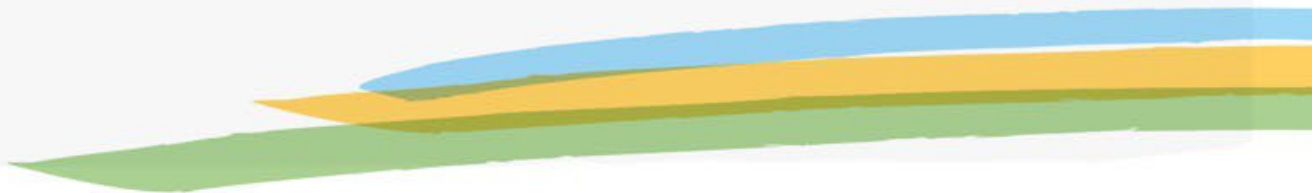
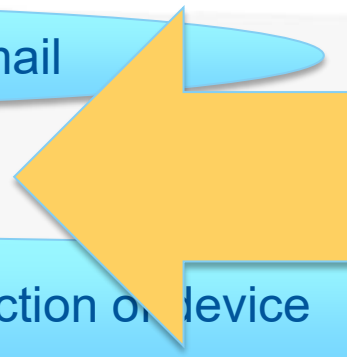
Wear for two nights



Respiratory team analyse and report the results



Referral to Papworth sleep clinic if AHI suggestive of moderate or severe OSA





# Cost estimate

Stock Code UDI (GTIN-14)	Description	Unit of Sale	Qty.	List Price (£)	Disc.	Offer Price (£)	VAT Rate	Line Total (£) Line VAT
3150BLE 00849686052367	Nonin WristOx 2 3150BLE Wearable Pulse Oximeter with Adult Soft SpO2 Sensor	Single	4	645.00	15.0%	548.25	20.0%	2,193.00 438.60
8000SL-WO2	Nonin Soft Sensor, Large Adult for Nonin 3150 WristOX2 Monitor (0.3m Cable)	Single	4	169.00	10.0%	152.10	20.0%	608.40 121.68
3150WB-SU	Nonin Wristband for 3150 Monitor, Single Use, Universal	Single	1	15.00	10.0%	13.50	20.0%	13.50 2.70
DEL-FOC	Delivery via Next Day Courier - Free of Charge for Orders over £100.00	Single	1	0.00	0.0%	0.00	20.0%	0.00 0.00

Please find your quotation as requested.

Lead Time: Delivery within 1-2days from receipt of order.

Office Contact: Chanel Cummings, 01536 461981

Area Sales Manager: Will Thomas, 07738 486640

Unless specified above, this quotation is valid for a period of 30-days.

**Currency:** Pounds Sterling  
**Value:** 2,814.90  
**VAT:** 562.98  
**Total: £ 3,377.88**

# Overnight pulse oximetry direct from pre-assessment clinic

5 pulse oximeters for pre-assessment clinic

Given directly to patients at high risk of OSA at clinic





Refer to respiratory nurse by email



Call from respiratory nurse to arrange collection of device



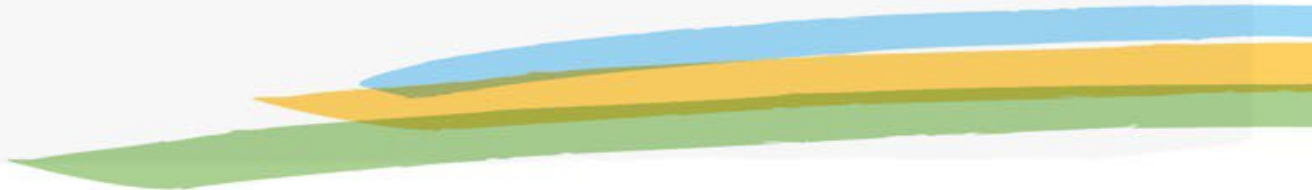
Wear for two nights



Respiratory team analyse and report the results



Referral to Papworth sleep clinic if AHI suggestive of moderate or severe OSA



Patient given device directly from PAC



Wear for two nights



Respiratory team analyse and report the results



Referral to Papworth sleep clinic if AHI suggestive of moderate or severe OSA

# Overnight pulse oximetry direct from pre-assessment clinic

48 tests in 2024, up to 10<sup>th</sup> April:

Apnoea Hypopnoea Index consistent with:

10 negative

16 mild

11 moderate

11 severe



## Benefits

Patients may no longer need an HDU bed (Cost of HDU bed is £1173/night)

Avoids additional journeys to hospital- benefits re: parking spaces, fuel, environment, time

Increased clinical time for respiratory nurse

Increased patient satisfaction, reduced complaints

More devices available for medical inpatients

Multidisciplinary working between pre-assessment, anaesthetics and respiratory

Increased theatre efficiency – not aware of any patients cancelled on the day of surgery since roll out

## With thanks to...

Kelly Beattie, Lead Nurse for Pre-Assessment Clinic

Dr Alistair Steel, Consultant Anaesthetist

Mandy Rye, Respiratory Nurse Specialist

Dr Thirumalai Naicker, Consultant in Respiratory Medicine

The entire dedicated team in the Pre-Assessment Clinic

The Room for Improvement Fund and Improvement Team members, especially Felicity Macaulay and Lucie Allan

