

Emergency Department Pathway

Non Invasive Ventilation (BiPAP)

Patient Name / Addressograph Address..... Date of birth.....

BiPAP is suitable for COPD patients with type 2 respiratory failure

Note: If considering non-invasive ventilation, inform SENIOR CLINICIAN now

Inclusion Criteria

- Patient with acute exacerbation of COPD
- ABG showing acidosis pH<7.35
- Type II Respiratory Failure PaCO2 >6.0 kPa
- On maximal medical therapy
- Emergency Department Consultant (or MG out of hours) informed and has reviewed patient

Absolute Contraindications

- Cardio / Resp arrest or Peri-Respiratory arrest
- Airway obstruction
- Metabolic acidosis
- Untreated pneumothorax
- Recent upper GI or cranio- facial surgery
- Facial / airway burns
- Vomiting / aspiration risk

Relative Contraindications

- Excess bronchial secretions
- Confused and unco-operative
- GCS < 8
- Hypotension SBP < 90mmHg
- Bullae (known or seen on X-ray)

Time/date of arrival in Emergency Department: _____

Name of assessing clinician: _____

MG/consultant involved in patient's care: _____

Patient Name / Addressograph

.....
Address.....

.....
Date of birth.....

MEDICAL THERAPY

Prior to commencing on NIV, ensure that all appropriate medical therapy has been commenced using the following as a guide:

1. OXYGEN

Controlled oxygen via Venturi mask (aim for SpO₂ of 88-92%)

2. NEBULISERS

Salbutamol nebulisers 5 mg,

Atrovent nebulisers 500 mcg,

repeat as necessary, use air-driven nebuliser if retaining CO₂)

3. STEROIDS

IV Hydrocortisone 100 mg

4. ANTIBIOTICS

If indicated, see antimicrobial formulary

5. IV BRONCHODILATORS

if indicated use one of the agents below

a) Aminophylline:

Loading dose: 5 mg/kg If NOT on oral theophylline

Infusion: 500-700 mcg/kg/hour or 300mcg/kg/hour in elderly

b) Salbutamol

Infusion: 5 mcg/minute adjust to response, range 3-20 mcg/min

INITIAL INVESTIGATION RESULTS

Investigation	Time	Result
CXR		Pneumothorax excluded? Yes <input type="checkbox"/> No <input type="checkbox"/>
ECG		
Bloods (do not delay starting NIV for these)		Hb..... WCC..... PLT..... Na..... K..... Ur..... Cr.....

MANAGEMENT PLAN

If no contraindications, discuss and agree the management plan with ED Consultant (or ED middle grade out of hours), placing patient into 1 of 3 groups:

First you must decide:

- Is patient appropriate for BiPAP / NIV?
- Is the patient suitable for escalation of therapy and ICU?
- What is the patient's resuscitation status?

1. Patient is suitable for BiPAP and can escalate to intubation / ICU if needed

Consultant signature: _____

2. Patient is suitable for BiPAP but not for escalation of treatment

Maximal level of therapy: _____

Reason for limiting treatment: _____

Consultant signature: _____

3. Patient for maximal medical therapy only not for BiPAP

Maximal level of therapy : _____

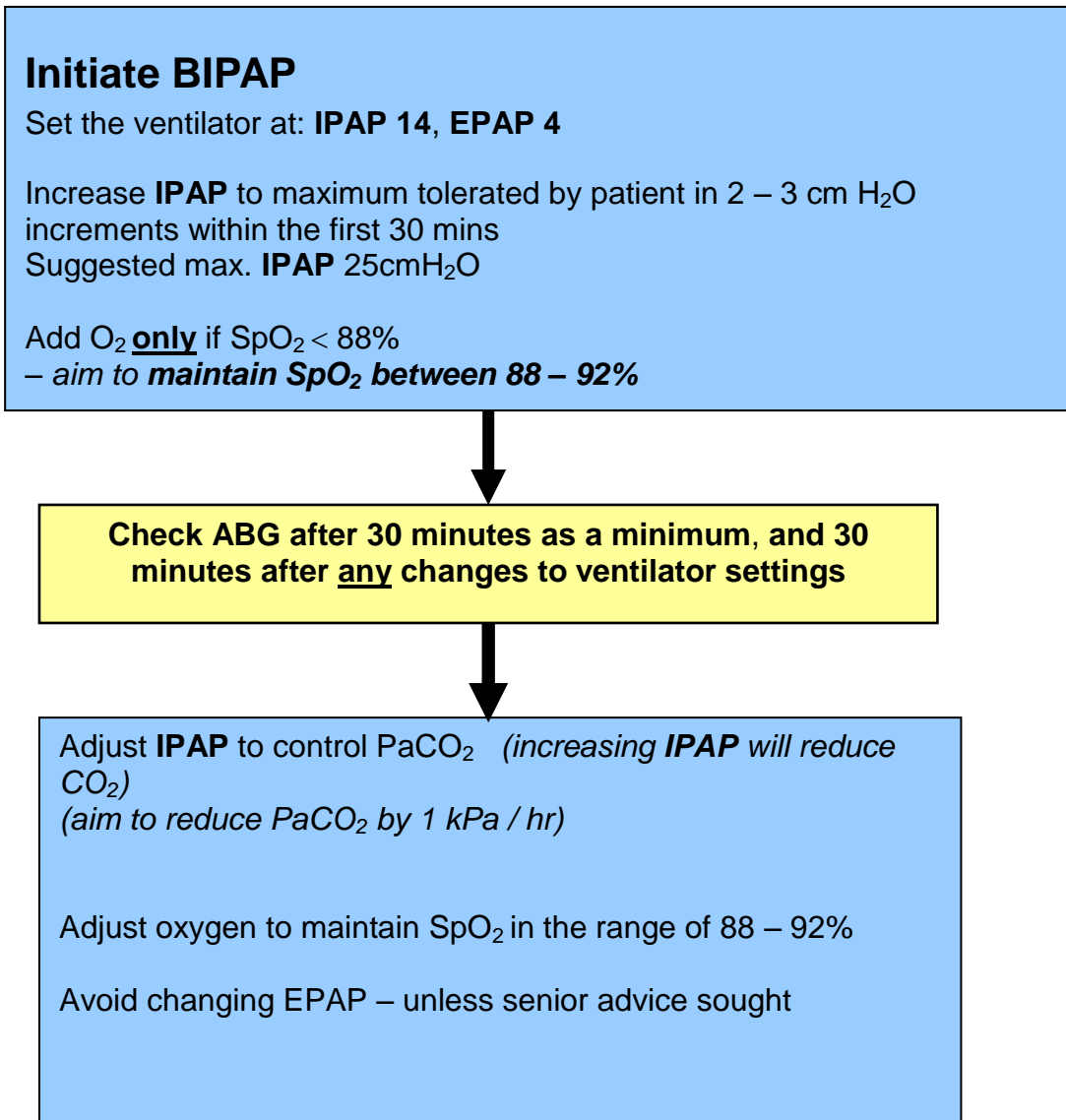
Reason for limiting treatment: _____

Consultant signature: _____

Patient Name / Addressograph Address..... Date of birth.....

CRITERIA FOR THE USE OF BIPAP IN ACUTE HYPERCAPNIC RESPIRATORY FAILURE

PaCO₂ > 6.0 pH < 7.35



TERMINOLOGY

- IPAP - Inspiratory positive airways pressure
- EPAP - Expiratory positive airways pressure
- Back up respiratory rate 14 - avoid adjusting unless senior advice sought (SpR or above)
- Rise Time - Length of time taken to reach IPAP, set to a short rise time in acute patients
- Timed Inspiration (T_i) - keep between 1.0 – 1.4 seconds for a back up rate of 14 bpm

PROFORMA FOR PATIENTS ON ACUTE NON INVASIVE VENTILATION (BiPAP) – To be completed for ALL patients

Patient Name: D.O.B.: RM2: <i>Patient label:</i>	Indication for NIV (BiPAP) Discussed with ED Consultant / Reg: Yes/No Name of Consultant:
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Decision if N.I.V. fails <i>(Circle as appropriate & document in notes)</i>	I.C.U.	Supportive Care	Doctors name, Grade & Signature:
D.N.R. decision? <i>(Circle as appropriate & document in notes)</i>	For Resuscitation	D.N.R. Form Completed Yes / No	Doctors name, Grade & Signature:

Arterial Blood Gases	Base line ABGs	30 mins post NIV set up	1 hour post NIV set up	Date:	Date:	Date:	Date:	Date:
	Date: Time:	Date: Time:	Date: Time:	Time:	Time:	Time:	Time:	Time:
pH								
P02								
pC02								
Base Excess								
Bicarbonate								
FiO2 (if required)								
IPAP								
EPAP								
Signature of Doctor:								

- **ABG's should be checked 30 minutes after initiating NIV,**
- **Check ABGs 30 mins after any changes in IPAP, EPAP or FiO2**
- **Repeat ABG's after 1 hour, in patients who are not improving clinically**

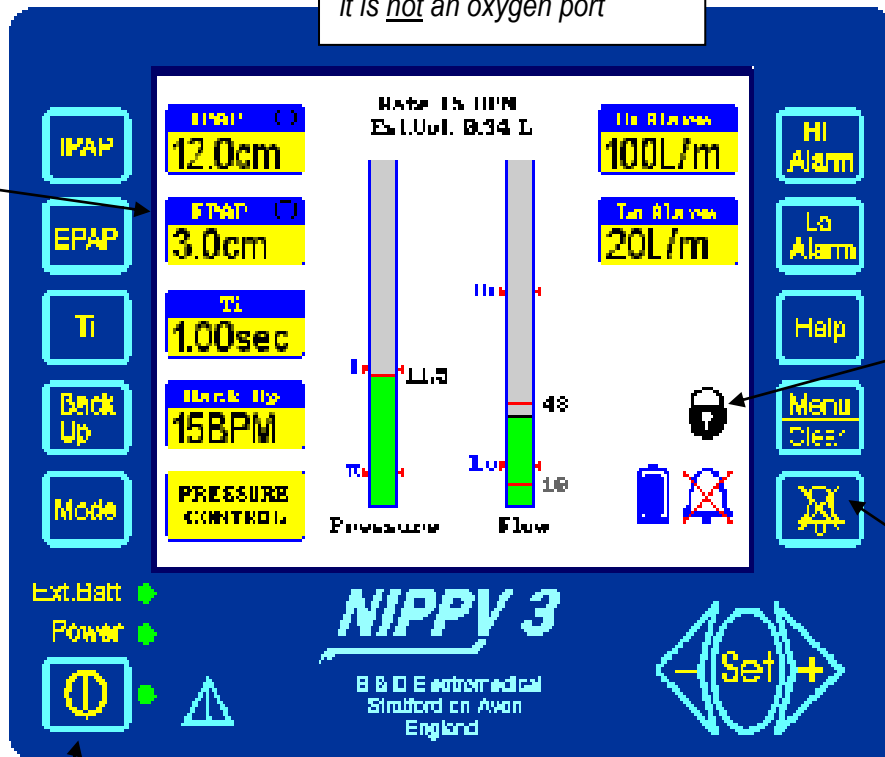
NIPPY 3

See diagram below for panel explanation.



Breathing hose & filter connects here

Do not connect anything here unless otherwise instructed – it is not an oxygen port



Ventilator settings displayed here.

Press button to highlight in pink you can change the settings by using + and - arrows

Press 'SET' when finished

To lock and unlock the Nippy:

Press and hold + & - for 4 seconds, the on screen padlock will 'open'

Alarm 'silence'

To turn on – press and hold the button for 3 seconds

To turn off – press and hold the button for 3 seconds, release and press again

Check vent. is unlocked.
Press required button, e.g. IPAP, it highlights in pink on the screen.
Use the + & - arrow buttons to alter the settings.
Press the **SET** button to register the new settings with the ventilator

INITIAL SETTINGS

Mode - pressure support .
IPAP – start at 14.0 cm
EPAP – start at 4 cm
Back up (BPM) – set at 14
Ti – set at 1.2

