



Chronic Obstructive Pulmonary Disease (COPD) Pathway

Patient details:	Height : Weight: Body Mass Index :
Past History: <input type="checkbox"/> Smoking H/o: <input type="checkbox"/> Cigarettes/ <input type="checkbox"/> E-Cigarettes/ <input type="checkbox"/> Cannabis <input type="checkbox"/> Exacerbation H/o: <input type="checkbox"/> Hospitalization H/o: <input type="checkbox"/> ICU Admission H/o: <input type="checkbox"/> Occupational H/o	InhalerType/ Dosage: [if available] <input type="checkbox"/> MDI +/-Spacer <input type="checkbox"/> DPI <input type="checkbox"/> Nebuliser Spirometry : <input type="checkbox"/> FEV1/FVC: <input type="checkbox"/> PEFR:
Previous lab investigations if any	

SPARSH CRITICAL CARE

SPARSH CRITICAL CARE

CO-MORBIDITIES	<input type="checkbox"/> Hypertension	<input type="checkbox"/> COPD	<input type="checkbox"/> Immunocompromised	<input type="checkbox"/> Post-Transplant
	<input type="checkbox"/> Type 2 Diabetes Mellitus	<input type="checkbox"/> CLD	<input type="checkbox"/> Malignancy / Chemo Tx	<input type="checkbox"/> Alcoholic
	<input type="checkbox"/> CAD	<input type="checkbox"/> CKD	<input type="checkbox"/> Steroids / Immuno suppressant Drugs	<input type="checkbox"/> Alpha1anti trypsin Deficiency
	<input type="checkbox"/> Pulmonary Tuberculosis	<input type="checkbox"/> Thyroid disorders	<input type="checkbox"/> Obstructive sleep Apnea	<input type="checkbox"/> SARS CoV2

COPD patient with suspected exacerbation

Confirm ECOPD Diagnosis and Episode severity

Determine etiology
& Rule out Differentials

Mild

- Dyspnea VAS <5
- RR < 24 Breaths /min
HR < 95bpm
- Resting Sao2 \geq 92%
breathing on ambient air
(or patient's usual oxygen
prescription) AND change
 \leq 3% (when known)
CRP < 10mg/l (if obtained)

Moderate (meets at least 3 out of 5)

- Dyspnea VAS \geq 5
- RR \geq 24 Breaths /min
HR \geq 95bpm
- Resting Sao2 < 92% breathing
on ambient air (or patient's
usual oxygen prescription)
AND/OR change > 3% (when
known)
- CRP \geq 10mg/l (if obtained)
- If obtained ,ABG may show
hypoxemia (PaO2 \leq 60mmhg)
and/or hypercapnia (PaCO2
> 45mmHg) but no acidosis.

Severe

- Dyspnea, RR, HR, SaO2 and
CRP same as moderate
- ABG show hypercapnia
and acidosis (PaCO2
> 45mmHg and pH < 7.35).

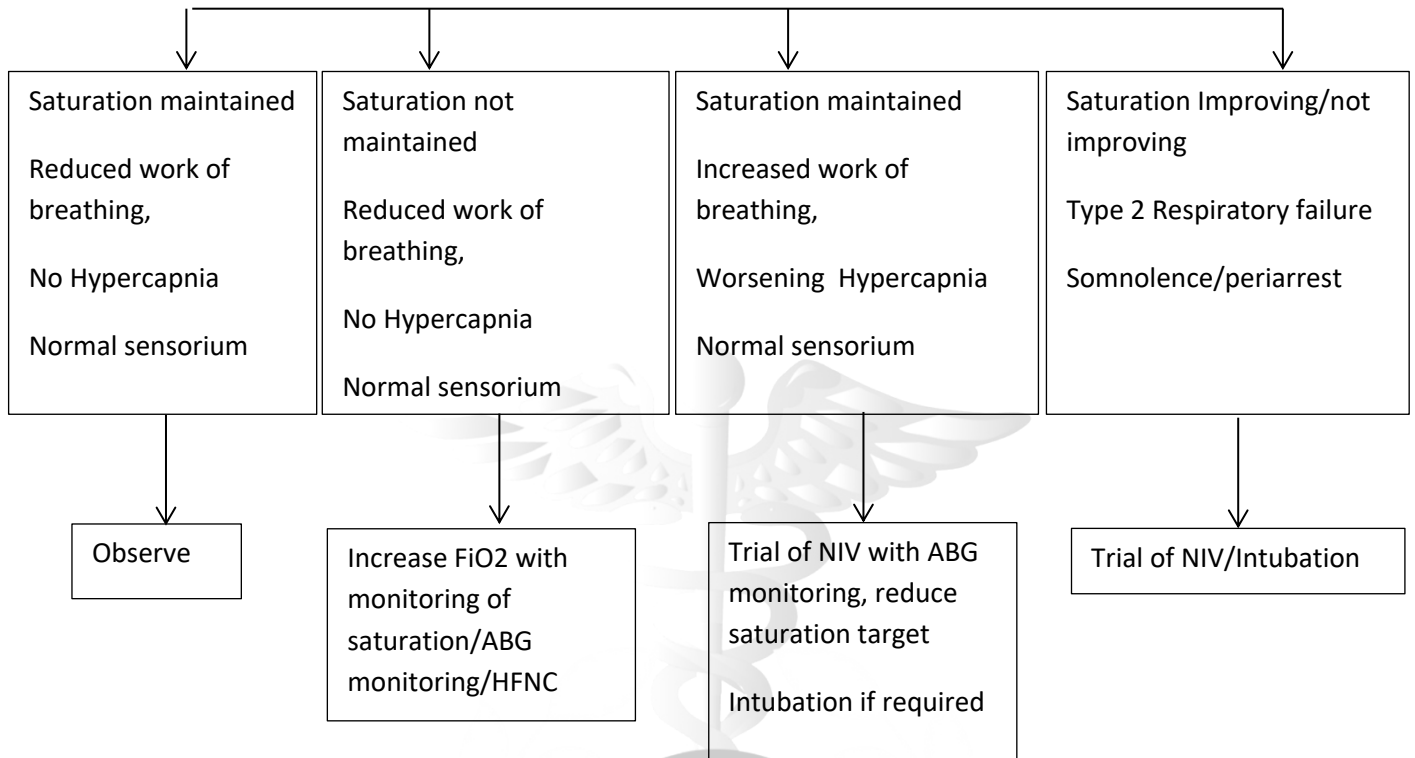
No Respiratory Failure [Mild]

Acute respiratory failure-Non life
threatening - Moderate/Severe

Acute respiratory failure-
life threatening

Initial medical management: Bronchodilators, Oxygen therapy, Steroids

- Assess Sensorium & work of breathing,
- Assess for worsening Hypercapnia
- Assess for Oxygenation



Management of Exacerbation:

Severity assessment, blood gases, chest radiograph

- Supplemental oxygen therapy
- **Bronchodilators:**
- Increase doses and/or frequency of SABAs
- **SABA +/- SAMA - initial bronchodilators**
- Consider use of LABAs when patient becomes stable
- Use spacers or air driven nebulizers when appropriate
- Systemic corticosteroids
- Antibiotics when signs of bacterial infections are present
- Methylxanthines are not recommended
- Non-Invasive ventilation [**Appendix 3**]
- Invasive mechanical ventilation [**Appendix 4**]
- **At all times:**
- Monitor fluid balance
- Subcutaneous Heparin or LWMA for thromboembolism prophylaxis
- Identify and treat associated conditions (e.g heart failure, arrhythmias, pulmonary embolism etc.)

Initial Ventilatory Settings:

- **Mode:** Control mode [Volume control alarm settings for high peak pressures; Pressure control alarm limits for minute ventilation]
- **TV:** 6-8 ml/predicted body weight
- **Respiratory rate:** 10-12 breaths/min
- **Fio₂:** titrate to SpO₂ 90-92%
- **PEEP:** 5-10 Cm H₂O OR 80% of PEEP_i
- **I:E Ratio:** 1:4 or more



SPARSH CRITICAL CARE

ICU Days	EVENTS / SUPPORTS
1	<input type="checkbox"/> MV <input type="checkbox"/> RRT <input type="checkbox"/> Vasopressors <input type="checkbox"/> Organ dysfunction <input type="checkbox"/> Others
2	<input type="checkbox"/> MV <input type="checkbox"/> RRT <input type="checkbox"/> Vasopressors <input type="checkbox"/> Organ dysfunction <input type="checkbox"/> Others
3	<input type="checkbox"/> MV <input type="checkbox"/> RRT <input type="checkbox"/> Vasopressors <input type="checkbox"/> Organ dysfunction <input type="checkbox"/> Others
4	<input type="checkbox"/> MV <input type="checkbox"/> RRT <input type="checkbox"/> Vasopressors <input type="checkbox"/> Organ dysfunction <input type="checkbox"/> Others
5	<input type="checkbox"/> MV <input type="checkbox"/> RRT <input type="checkbox"/> Vasopressors <input type="checkbox"/> Organ dysfunction <input type="checkbox"/> Others
6	<input type="checkbox"/> MV <input type="checkbox"/> RRT <input type="checkbox"/> Vasopressors <input type="checkbox"/> Organ dysfunction <input type="checkbox"/> Others
7	<input type="checkbox"/> MV <input type="checkbox"/> RRT <input type="checkbox"/> Vasopressors <input type="checkbox"/> Organ dysfunction <input type="checkbox"/> Others
>7 days Course of illness	

Outcome

- I. APACHE II/IV Score: _____ 2. SOFA Score at the time of admission: _____ , 48hr: _____
at the time of transfer out / LAMA / Discharge: _____ 3. Length of ICU Stay: _____
4.Length of Hospital stay: _____
- II. Organ Failure : AKI Liver failure Coagulopathy Encephalopathy
Myocardial Dysfunction CIPNM MV dependent
- III. Renal replacement therapy _____ day from CRRT / SLED
- IV. MV _____ duration Proning ECMO Tracheostomy
- V. Outcome: Death Survived (Discharged from ICU / Transfer out to stepdown / HDU/
Room) LAMA
- Ambulated Bed ridden (with support / without support)

Doctor Name: _____, Sign: _____

Appendix 1: Indications for hospitalization

- Severe symptoms such as sudden worsening of resting dyspnea ,high respiratory rate, decreased oxygen saturation, confusion, drowsiness.
- Acute respiratory failure
- Onset of new physical signs (e.g., cyanosis, peripheral edema)
- Failure of an exacerbation to respond to initial medical management.
- Presence of serious comorbidities.
- Insufficient home support

Appendix 2: Indications for RICU or MICU admission

- Severe dyspnea that responds inadequately to initial emergency therapy
- Changes in mental state (confusion, lethargy, coma)
- Persistent or worsening hypoxemia($\text{PaO}_2 < 5.3\text{kPa}$ or 40 mmHg) and/or severe/worsening respiratory acidosis($\text{pH} < 7.25$) despite supplemental oxygen and NIV.
- Need for Invasive mechanical ventilation
- Hemodynamic instability – need for vasopressors

Appendix 3: Indications for Noninvasive mechanical ventilation (NIV)

Atleast one of the following:

- Respiratory acidosis ($\text{PaCo}_2 \geq 6.0\text{ kPa}$ or 45mmHg and arterial $\text{pH} \leq 7.35$).
- Severe dyspnea with clinical signs of respiratory muscle fatigue, increased work of breathing, or both, such as use of respiratory muscles, paradoxical motion of the abdomen, or retraction of the intercostal spaces.
- Persistent hypoxemia despite supplemental oxygen therapy.

Appendix 4: Indications for Invasive Mechanical ventilation

- Unable to tolerate NIV or NIV failure
- Status post – respiratory or cardiac arrest
- Diminished consciousness , psychomotor agitation inadequately controlled by sedation.
- Massive aspiration or persistent vomiting
- Persistent inability to remove respiratory secretions
- Severe hemodynamic instability without response to fluids and vasoactive drugs
- Severe ventricular or supraventricular arrhythmias
- Life threatening hypoxemia in patients unable to tolerate NIV

Long term oxygen Therapy [LTOT]: Indicated for stable patients

Arterial hypoxemia defined as:

- Pao₂ at or below 55mmHg [7.3kpa] or SaO₂ at or below 88%,with or without hypercapnia confirmed twice over a three week period; or
- Pao₂ between 55mmHg[7.3kpa] and 60 mmHg[8 kpa], or SaO₂ of 88%,if there is evidence of pulmonary hypertension, peripheral edema suggesting congestive cardiac failure, or polycythemia(hematocrit >55%).

Prescribe supplemental oxygen and titrate to keep Sao₂> 90%

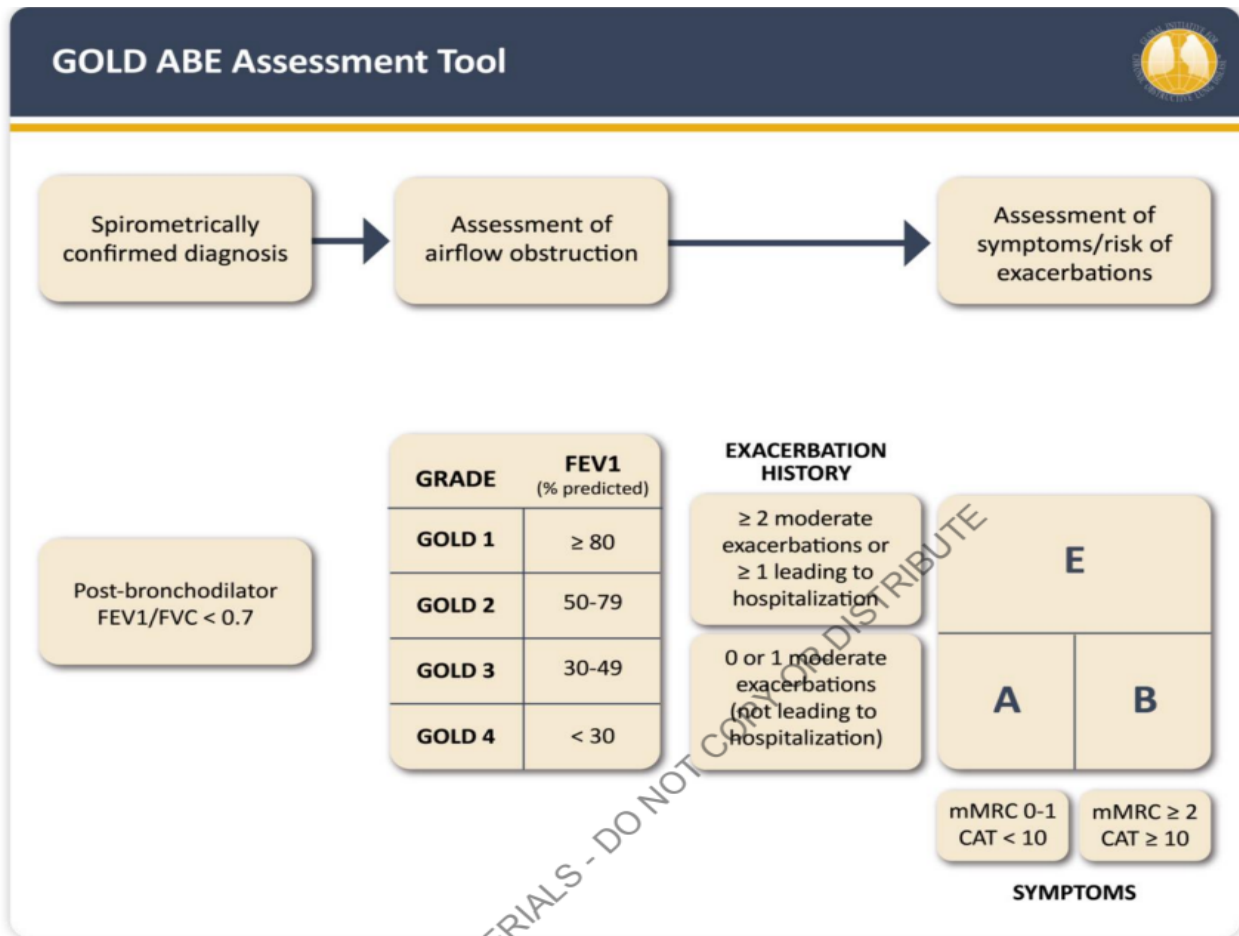
Recheck in 60-90 days to assess

- If supplemental oxygen is still indicated
- If prescribed supplemental oxygen is effective

Vaccination in COPD

- Flu Vaccination
- Pneumococcal vaccination
- Pertussis vaccination
- COVID -19 vaccination
- Shingles vaccination

I. Source: GOLD 2023 Guidelines



Reference:

https://goldcopd.org/wp-content/uploads/2023/01/GOLD-2023-ver-1.2-7Jan2023_WMV.pdf

[Last accessed on 2023 Feb 28]

Author	Supervised by	Version/Date	Review Date
Dr. Ch. Sundeep MD, IDCCM	Dr. Masood Mohammed MD, MRCP(UK), EDIC, FICCM(UK)	1.0/28-02-2023	28-02-2025