NewYork-Presbyterian
The University Hospital of Columbia and Cornell

Inclusion Criteria: COPD Diagnosis, Primary Reason for Hospitalization COPD Exacerbation, Any COPD Patient on Floor or Stepdown

Exclusion Criteria: Admission to ICU

>Clinical Pathways are tools to facilitate and guide multidisciplinary care, and do not replace physician assessment, clinical judgement or orders.
>Modifications to the clinical pathway may be made based on documented individual patient needs.

CLINICAL PATHWAY - COPD Exacerbation DRG 190, 191, 192 ***ELOS - 3 Days***

		PLEASE CIRCLE: DAY# HOUR# _____		PLEASE CIRCLE: DAY# HOUR# _____		PLEASE CIRCLE: DAY# HOUR# _____	
	Resp Disc	**Target Day/s _ED/ Day 1**	**Resp Disc**	**Target Day/s _2**	**Resp Disc**	**Target Day/s ____3__**	**Resp Disc**
PATIENT OUTCOMES/ CLINICAL INDICATORS (Patient must meet these to move to next phase) *Check off & initial/date when indicator has been met*	___ ___ ___ ___	☐ Patient reports some improvement in symptoms Init / Date ☐ Resp rate < 20 Init / Date ☐ Patient maintains min O2 Sat as determined by MD (88-92%) O2 sat to be:_____ Init / Date If indicators not met, consider: • Arterial blood gas indicated if tachypneic, increasing oxygen requirements to maintain sat> 90 or increased lethargy or confusion, or serum HCO3 (CO2) level on Chem 7 > 35. •Non-invasive positive pressure ventilation if Respiratory acidosis (arterial pH <= 7.35 and/or PaCO2 >= 6.0 kPa, 45mm Hg or severe dyspnea w. clinical signs of resp muscle fatigue, increased work of breathing, or both. • Transfer to ICU • Intubation and ventilator management if unable to tolerate NIVV or NIVV failure	___ ___ ___ ___	☐ Patient maintains min O2 Sat as determined by MD (88-92%) O2 sat to be:_____ Init / Date ☐ Patient reports some improvement in symptoms (dec cough, ☐ dec sputum) (Init / Date_ Return to pre-admission ambulation /mobility Init / Date_ (Parameter)_____ Init / Date_ If indicators not met, consider: • PT consult for mobility • Pulmonary Consult	___ ___ ___ ___	☐ Able to use long acting bronchodilators, either beta2-agonists and/or anticholinergics with or ☐ without inhaled corticosteroids ☐ Inhaled short-acting beta2-agonist therapy is required no more frequently than every 4 hrs. Init / Date_ If previously ambulatory, able to walk across room. Init / Date_ Patient (or home caregiver) fully understands correct use of medications and management of COPD at home .Init / Date_ If indicators not met, consider: • Echocardiogram to r/o cardiac dysfunction . • Leg USG to r/o DVT • VQ/ddimer to r/o pulmonary embolism??; BNP • CAT scan of chest??/ Sputum culture	___ ___ ___ ___
PATIENT EDUCATION Initial/date when completed.		☐ Orientation to unit Init / Date_____ ☐ Relaxation ; Pursed lip breathing Init / Date_____ ☐ Medication use Init / Date_____ ☐ Oxygen use Coughing and Deep Breathing Advance Directives/Health Care Proxy Smoking cessation COPD management		☐ Smoking cessation prn Init / Date_ ☐ Appropriate use of inhaler reinforced Init / Date_ ☐ Review & Reinforce: COPD Education guide Init / Date_ ☐ Instruction/guidelines for amount of oxygen to use at rest and with activity Init / Date_ Medication information and use of inhalers including technique Init / Date_ Management of COPD including s/s exacerbation (increased SOB, sputum or cough)		☐ Medication information and use of inhalers including technique Init / Date_ ☐ Management of COPD including s/s exacerbation ☐ (increased SOB, sputum or cough) Init / Date_ Home oxygen therapy / Date_ (Teaching)_____ Init / Date_	

	DISCHARGE PLANNING *Check and initial when completed. Enter dates if required.*		Social work consult to assess home situation including financial ability to pay for medication on discharge, oxygen, social support available.		Assess need for referral to outpatient pulmonary rehab. Home oxygen therapy. Discharge disposition determination. Home health care referral prn Evaluate need for referral to Hospice; Palliative care.		Referral to MD for post-discharge visit (10-14 days); Referral to Smoking cessation prn ; Referral to Outpatient Pulmonary Rehab. Home health care referral prn for medication and oxygen therapy compliance. Post discharge cal within 48 hours to evaluate compliance. COPD action plan . Validation of appropriate use of medications and oxygen.	
Physician orders as needed.	Assessments		• Determine severity of exacerbation: Chest assessment/chest auscultation including assessment of use of accessory respiratory muscles, paradoxal chest wall movements' worsening or new central cyanosis, peripheral edema, hemodynamic instability, deteriorated mental status • Vital signs, including oximetry q. 6h then q shift as per orders • History & Physical including severity of COPD based on degree of air flow limitation, duration of worsening/new symptoms, previous exacerbations and treatments, comorbidities, present treatment regimen and previous use of mechanical ventilation, review of inhaled medication technique and efficacy. •Monitor finger stick (FS) glucose before meals and at hour of sleep or as ordered, and PRN as indicated. •Assessment of Code Status • Monitor I&O q 8 hours, prn or as ordered •Assess sputum color, consistency, amount and ability to mobilize secretions		• Chest assessment/chest auscultation • Vital signs, including oximetry q shift as per orders • Secretion management & mobility • Oximetry with activity. Oxygen titrated to maintain sat>90%		• Home O2 prescription reassess. Need for home O2 if not established • _____ • _____ • _____	
	Diagnostics & Radiology		• **If not completed in Emergency Department** •Chest x-ray (PA & lat)_____ • CBC ;BMET; Electrolytes; hepatic function; •Theophylline level if on theophylline; •ABG if unable to maintain saturation over 90%, increased lethargy, confusion or use of accessory muscle • ECG		• _____ • _____ • _____ • _____		• _____ • _____ • _____ • _____	
	Nutrition/Diet		Nutrition consult if patient at risk. Dietary restriction as indicated.		Nutrition consult if glucose increased while patient on steroids.			
	Activity/Mobility/Safety		Activity as tolerated. OOB to chair every 4 hours as tolerated. Position patient to facilitate breathing		OOB to bathroom/hallway. Portable oxygen with ambulation.		Ambulate ad lib. Return to pre-hospitalization activity level without exacerbation of symptoms. Oxygen as prescribed.	

GUIDELINES FOR ASSESSMENT AND CARE: Obtain								
	Medication/Pain Control		Stop maintenance inhalers upon admission. Albuterol Inhal Solution 3.0ml (2.5 mg) & Ipratropium Bromide 2.5 ml (0.5 mg) via nebulizer every 4 hours. If failed oral steroids as outpatient or on high dose maintenance steroids, then **Methylprednisolone 40mg IV every 6 hours** until improved then move to Prednisone PO. Otherwise, If no recent steroid given then **Prednisone 40mg po every day for 10-14days (No taper needed).** **If no recent antibiotics**: Azithromycin 500mg PO on Day 1 followed by 250mg PO once daily on days 2-5 **If failed recent outpatient course of azithromycin, then**: Option A: doxycycline 100mg PO twice daily x 7 days Option B: cefuroxime 500mg PO twice daily +/- doxycycline100mg PO twice daily x 7 days **If failed recent outpatient course of azithromycin and PCN allergic, then:** Option A: doxycycline 100mg PO twice daily x 7 days Option B: levofloxacin 500mg PO daily x 7 days Tailor antibiotics as necessary if known history of multidrug-resistant organisms DVT prophylaxis Nicotine replacement prn.		Progress IV meds to PO meds Prednisone 40 mg PO every day Reassess need for DVT prophylaxis when ambulatory. Progress from nebulized medication to metered dose inhalers. Consider moving patient to at least one of the folllowing medications from COPD maintenance medication regimen : Tiotropium 18 microgram inhaled every day, Fluticasone/salmeterol 250 microgram/50 microgram - ONE inhalation BID (12 hours apart) **OR** Budesomide/formeterol 160 microgram/4.5 microgram - TWO inhalations BID ; If Tiotropium added then Discontinue Ipratropium and have Albuterol Inh Solution 3.0 mL (2.5 mg) via nebulizer every 4 hours prn.		Flu vaccine 0.5 IM x1 prior to discharge prn. Pneumonia Vaccine (if age < 60 then every 5-10 years; if > 60 then administer once.) Change Albuterol to Albuterol MDI (90 microgram/spray) 2 inhalation every 4 hours as needed. Discharge medication: Prednisone 40 mg PO every day for total of 14 days. Azithromycin 250mg PO every day for 2 days (total of 5 days) ; Resume COPD maintenance therapy Inhaler: Tiotropium 18mcg every day, Fluticasone/salmeterol 250/50 ONE inhalation BID, **OR** Budesomide/formeterol 160/4.5 TWO inhalations bid ; Albuterol MDI (90mcg/spray) TWO inhalations every 4 hours as needed. Oxygen prescriptions for rest, activity and sleep. COPD DISCHARGE BUNDLE	
	Treatments		O2 via nasal cannula. Titrate oxygen up to 6l via nasal canual to maintain Sat> 90% . Notify MD if unable to maintain sat>=90%. NIVV as indicated for Acute respiratory failure Suction patient as needed		O2 via nasal cannula. Titrate oxygen to maintain Sat> 90%		If patient unable to use inhaler then consider ordering Long acting beta 2 agonists for use with nebulizer to optimize treatment.	
	Therapy (PT, OT, Rehab)				Physical therapy prn for ambulation.			
	Other		Pulmonary or Critical Care Consult for any patinet requiring NIV or as indicated. ID Consult as needed Assess for referral to Palliative care for dyspnea					
	COPD Discharge Bundle						1. Smoking cessation referral 2. Pulmonary Rehab referral 3. Patient specific COPD action plan 4. Validation of appropriate use of medications including inhalation technique. 5. Home health care referral. 6. Call 48 hours post-discharge. 7. Follow-up visit scheduled 10-14 days after discharge. 8.Patient education: exacerbations, oxygen use, COPD.	

PROVIDER EVALUATION		**ON TRACK** 0700 ☐ YES ☐ NO ______________________ Initials ______________________ Unit 1900 ☐ YES ☐ NO ______________________ Initials ______________________ Unit		**ON TRACK** 0700 ☐ YES ☐ NO ______________________ Initials ______________________ Unit 1900 ☐ YES ☐ NO ______________________ Initials ______________________ Unit		**ON TRACK** 0700 ☐ YES ☐ NO ______________________ Initials ______________________ Unit 1900 ☐ YES ☐ NO ______________________ Initials ______________________ Unit	
SIGNATURES *Print name & sign initials only if initialing in other areas on pathway.*		Name Initials ______________________ _____ ______________________ _____ ______________________ _____ ______________________ _____ ______________________ _____ ______________________ _____ ______________________ _____		Name Initials ______________________ _____ ______________________ _____ ______________________ _____ ______________________ _____ ______________________ _____ ______________________ _____ ______________________ _____		Name Initials ______________________ _____ ______________________ _____ ______________________ _____ ______________________ _____ ______________________ _____ ______________________ _____ ______________________ _____	