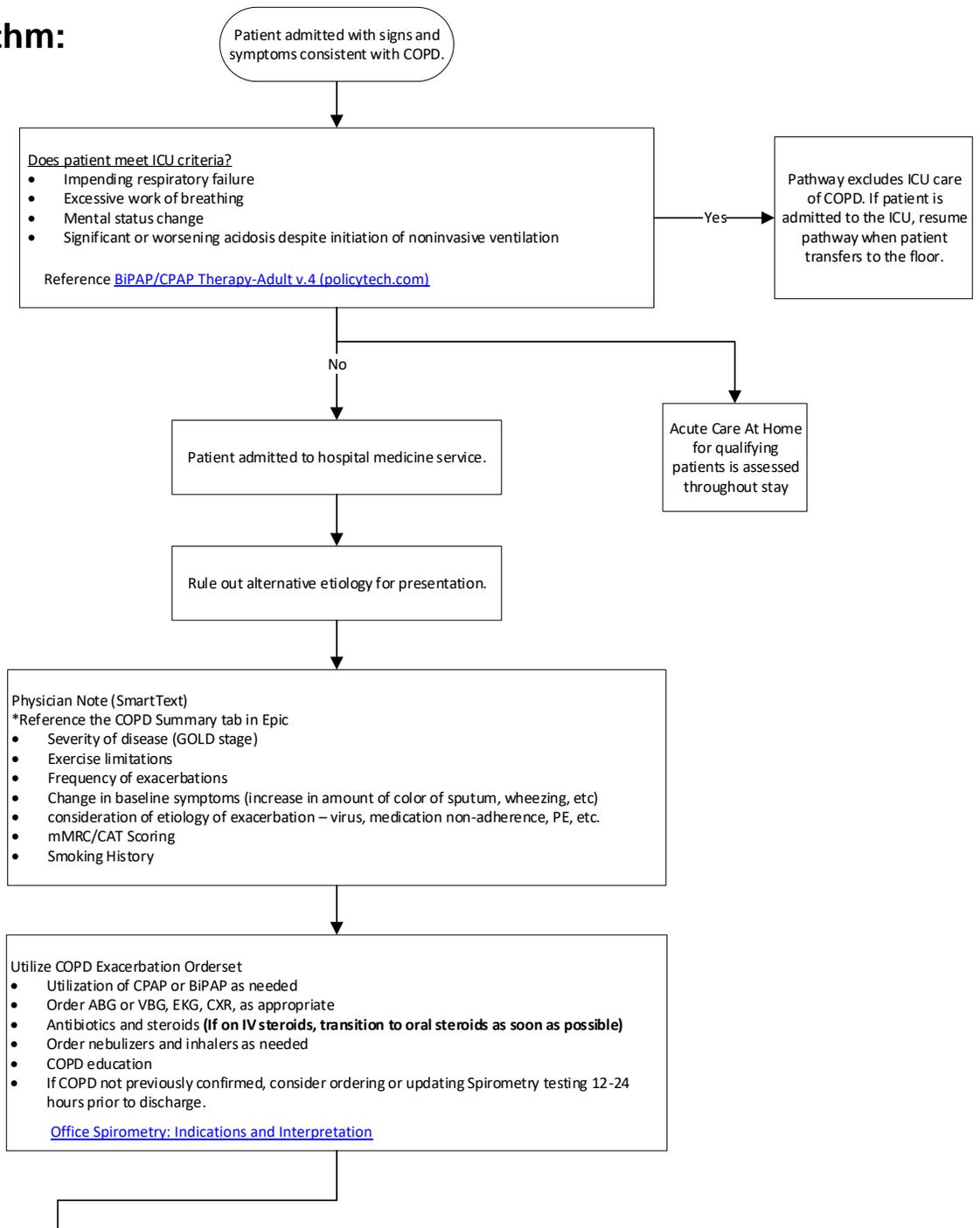
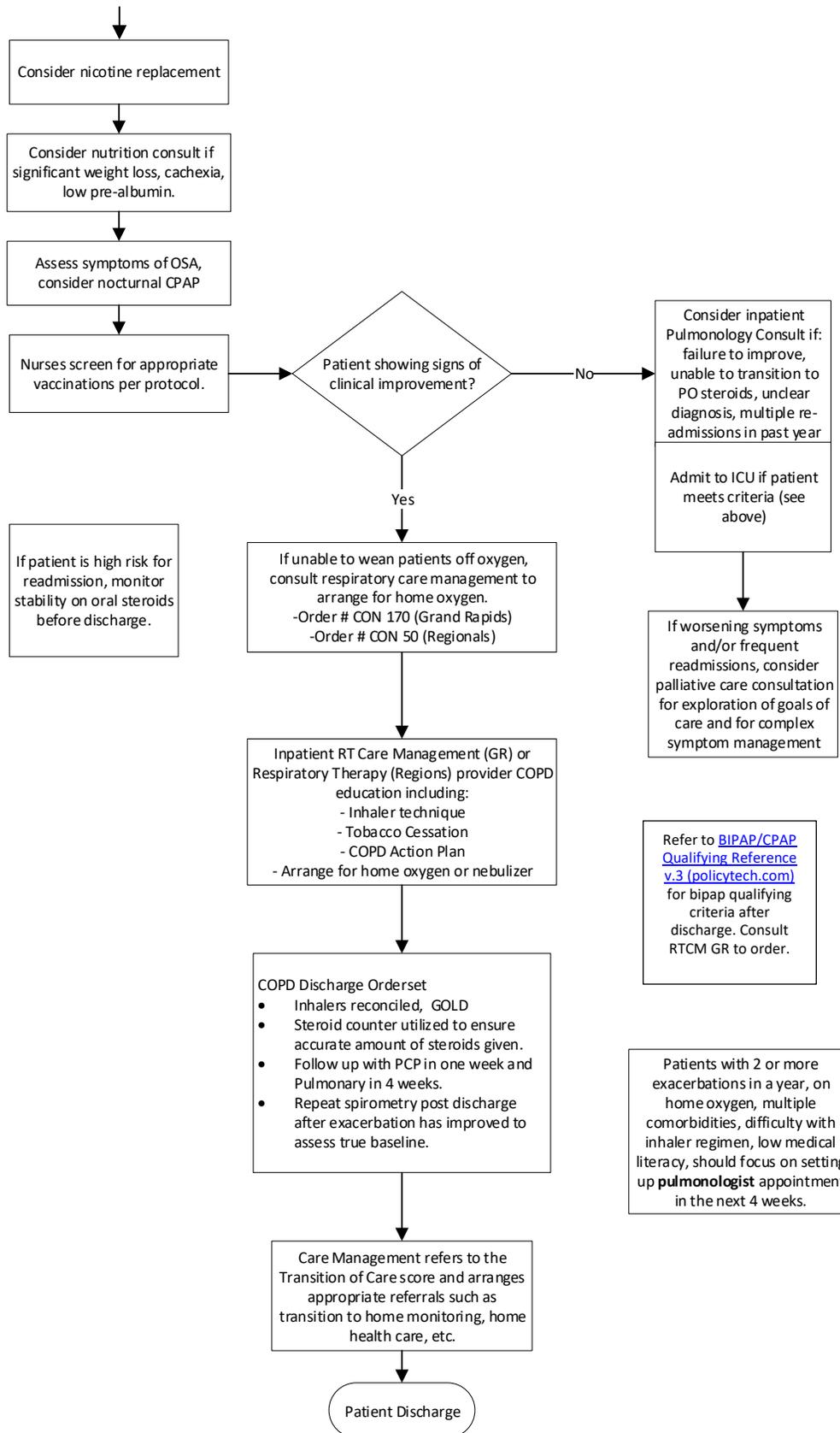


CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD), INPATIENT, PATHWAY

Updated: November 14, 2022

Clinical Algorithm:





Clinical Pathway Summary

CLINICAL PATHWAY NAME: COPD, Inpatient

PATIENT POPULATION AND DIAGNOSIS: Adult patients admitted for COPD exacerbation.

APPLICABLE TO: All SHWM inpatient hospitals.

BRIEF DESCRIPTION: This is a care guideline for patients admitted with a COPD exacerbation. The key elements of this pathway include admission and discharge ordersets which allows for standard assessment, testing, medications, breathing treatments, and respiratory device utilization. The goal of this pathway is to standardize the approach to treatment, ensure access to variety of resources while admitted, ensure follow-up appointments are created, and reduce 30-day readmissions.

OPTIMIZED EPIC ELEMENTS (if applicable):

UPDATED COPD Exacerbation Orderset

UPDATED COPD Discharge Orderset

UPDATED COPD Summary in Epic

NEW COPD inhaler order panel (included in COPD Discharge Orderset)

LAST REVISED: October 13, 2022

Clinical Pathways Clinical Approach

TREATMENT AND MANAGEMENT:

Chronic Obstructive Pulmonary Disease (COPD) is a common disease characterized by airflow obstruction generally due to exposure to tobacco or inhalation of other noxious particles (GOLD 2022 Report). This causes significant respiratory symptoms and morbidity that can be debilitating for patients, remains a leading cause of mortality in the US, and large source of healthcare costs with significant healthcare utilization evidenced by over twenty thousand admissions in Michigan alone in 2018 for primary diagnosis of COPD exacerbation (Murphy et al., 2021; CDI 2022). Severe exacerbations of COPD do require steroids and antibiotics for treatment, as well as, significant supportive care, including oxygen or positive pressure devices, frequent use of inhalers/nebulizers, and if worsening, may require attention in the medical intensive care unit (GOLD 2022 Report). Medication optimization is crucial in aiding reduction of readmissions, but recurrent COPD readmissions are likely markers of other healthcare and social needs, which necessitates care by non-provider staff to address social and non-medical barriers to care (Press et al., 2019).

Hospital management of COPD exacerbations requires treatment with steroids and antibiotics. Shorter courses of oral steroids for COPD exacerbations are as effective, without significant difference in treatment failure, nor significant relapse or time to relapse, compared to prolonged steroids (Walters et al., 2018). The transition to oral steroids allows for reduction in side effects and worsening of comorbid conditions. While there is some mixed data for inpatient use of antibiotics for COPD exacerbations, the overall trend favors their use as treatment failure within 4 weeks is reduced, non-ICU mortality is unchanged, ICU mortality is reduced, and time to next exacerbation is extended (Vollenweider et al., 2018). Hence, the admission orderset in this

pathway creates options for oral steroids and specific respiratory antibiotics with defined timeframes to standardize therapy and allow shorter planned length of stay.

Observational data suggests that generalized efforts to reduce re-admissions has reduced all-cause 30-day re-admissions after CMS began implementing penalties for excess hospital readmissions (Puebla Neira et al., 2021). However, a meta-analysis that studied a variety of interventions like pulmonary rehabilitation referrals, smoking cessation, outpatient referrals, and education - mostly aimed at discharge efforts - have reduced re-admission rates and non-significant trend toward reduction in mortality (Ospina et al., 2017). Scoring systems to predict re-admissions have been developed, but have not provided significant modifiable factors for clinicians to intervene upon (Echevarria et al., 2017). Programs that combine admission and discharge bundles, in addition to the education, smoking cessation, and individualized care, created improved reduction in length of stay, re-admissions, and the combined efforts improve long-term results (MacDonell et al., 2020). Therefore, this pathway stresses multiple interventions: an assessment of symptoms/inhaler usage/common reasons for exacerbation, paired with an admission orderset, education, smoking cessation, vaccinations, with a discharge orderset and discharge planning to include follow-up with primary providers and pulmonologists, enrollment in pulmonary rehabilitation, medication reconciliation, and inhaler adherence. Plans for COPD navigator are in discussion, and may allow further coordination of care, ensure follow-up, and adherence to medications as the introduction of a COPD nurse navigator to a large tertiary care hospital system in Canada led to reduced respiratory cause ED visits, admissions, and had significant healthcare utilization savings (Dajczman et al., 2018).

In summary, the combined efforts of this pathway will allow for standardized treatment of patients with acute exacerbations of COPD, combined with multi-disciplinary actions, specific efforts with discharge planning, and education to effectively treat, reduce length of stay, and reduce re-admission rates.

Key topics addressed by the COPD clinical pathway:

1. Address true COPD exacerbation versus mimic and treat accordingly
2. Assess respiratory status and appropriateness of floor admission, transfer to ICU, or Acute Care at Home
3. Assessment of COPD severity, baseline symptoms compared to current symptoms, tobacco history, etc
4. Utilization of COPD Admission Orderset, including need for positive pressure, further lab/imaging needs, medications, inhaler treatments, and education
5. Ancillary treatments including smoking cessation, nutrition consultation, OSA screening, and vaccinations
6. Ongoing re-assessment for improvement or worsening and direction for each
7. Discharge planning, with COPD Discharge Orderset, oxygen assessments, follow-up appointments with PCP or Pulmonologist if meets criteria, spirometry if not previously completed, and appropriate inhaler and medication reconciliation.

Pathway Information

OWNERS(S): Dr. Balaji Vutla, Dr. Kevin Patterson, Dr. Max Tamae Kakazu

CONTRIBUTOR(S): Dr. Chethan Kalhalli Rajappa, Dr. Stephanie Burdick, Caroline Maass, Kathleen Gilbert, Kim Plant, Joan Kronlein, Brian Perez, Jessica Sturgill

EXPERT IMPROVEMENT TEAM (EIT): COPD

CLINICAL PRACTICE COUNCIL (CPC): Specialty

CPC APPROVAL DATE: 10/17/22

OTHER TEAM(S) IMPACTED Pharmacy, Nursing, Respiratory Therapy, Care Management

References

1. Global strategy for the diagnosis, management, and prevention of chronic obstructive pulmonary disease 2022 report. https://goldcopd.org/wp-content/uploads/2021/12/GOLD-REPORT-2022-v1.1-22Nov2021_WMV.pdf
2. Mortality in the United States, 2020. Murphy S, et al. NCHS Data Brief No. 427, December 2021.
3. Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Population Health. Chronic Disease Indicators (CDI) Data [online]. [accessed Oct 10, 2022]. URL: <https://nccd.cdc.gov/cdi>.
4. Reducing Chronic Obstructive Pulmonary Disease Hospital Readmissions, An Official American Thoracic Society Workshop Report. Press, et al. *Ann Am Thorac Soc*. 2019 Feb;15(2):161–170. doi: 10.1513/AnnalsATS.201811-755WS.
5. Different durations of corticosteroid therapy for exacerbations of chronic obstructive pulmonary disease. Walters J, et al. *Cochrane Database Syst Rev*. 2018 Mar 19;3(3):CD006897. doi: 10.1002/14651858.CD006897.pub4.
6. Antibiotics for exacerbations of chronic obstructive pulmonary disease. Vollenweider D, et al. *Cochrane Database Syst Rev*. 2018 Oct 29;10(10):CD010257. doi: 10.1002/14651858.CD010257.pub2.
7. Readmissions Reduction Program: Mortality and Readmissions for Chronic Obstructive Pulmonary Disease. Puebla Neira DA, et al. *Am J Respir Crit Care Med*. 2021 Feb 15;203(4):437-446. doi: 10.1164/rccm.202002-0310OC.
8. A systematic review of the effectiveness of discharge care bundles for patients with COPD. Ospina M, et al. *Thorax*. 2017 Jan;72(1):31-39. doi: 10.1136/thoraxjnl-2016-208820.
9. The PEARL score predicts 90-day readmission or death after hospitalisation for acute exacerbation of COPD. Echevarria, et al. *Thorax* 2017;72:686–693. doi:10.1136/thoraxjnl-2016-209298.
10. Interventions to standardise hospital care at presentation, admission or discharge or to reduce unnecessary admissions or readmissions for patients with acute exacerbation of chronic obstructive pulmonary disease: a scoping review. MacDonell R et al. *BMJ Open Respir Res*. 2020; 7(1): e000733. doi: 10.1136/bmjresp-2020-000733.
11. Integrated Interdisciplinary Care for Patients with Chronic Obstructive Pulmonary Disease Reduces Emergency Department Visits and Admissions: A Quality Assurance Study. Dajczman et al. *Can Respir J*. 2013 Sept/Oct;20(5). doi.org/10.1155%2F2013%2F187059.