

ASHP BEST PRACTICES AWARD

Implementation of a COPD Transitions of Care Service Integrating Clinical Pharmacists as Prescribers Within the Patient Centered Medical Home

Edward C. Portillo, PharmD
Molly R. Lehmann, PharmD, BCACP
M. Shawn McFarland, PharmD, FCCP, BCACP
Jordyn T. Kettner, PharmD Candidate 2022
Sonia D. Bhardwaj, PharmD Candidate 2022
David E. Goodrich, EdD, MA, MS
Nicholas W. Bowersox, PhD
Timothy L. Hagen, MBA
Michelle A. Chui, PharmD, PhD

William S. Middleton Memorial Veterans Hospital
University of Wisconsin-Madison School of Pharmacy
Madison, Wisconsin



Introduction

Healthcare System

Veterans Health Administration – U.S. Department of Veterans Affairs

- Largest integrated healthcare system in the United States (U.S)
- 171 VA Medical Centers
- 1,063 Outpatient Clinics
- Provides care to over 9 million Veterans
- 1.25 million Veterans with a COPD diagnosis in the United States

COPD Background

COPD Disease Impact

- COPD is the third leading cause of death globally and is projected to become the leading cause of death worldwide¹
- COPD impacts 16 million Americans and is the third leading cause of death and disability in the United States, leading to one death every 4 minutes²⁻⁴
- United States Veterans have a three-fold increase in prevalence of COPD as compared to the civilian population⁵

Treating COPD Exacerbations

- The Veteran mortality rate within 5-years of a COPD exacerbation is 50%⁶⁻⁸
- Evidence-based strategies exist to prevent COPD exacerbations and slow progression, however scaling such interventions remains a challenge
- To date, no single intervention has reliably reduced COPD readmissions nationally across healthcare settings

Purpose

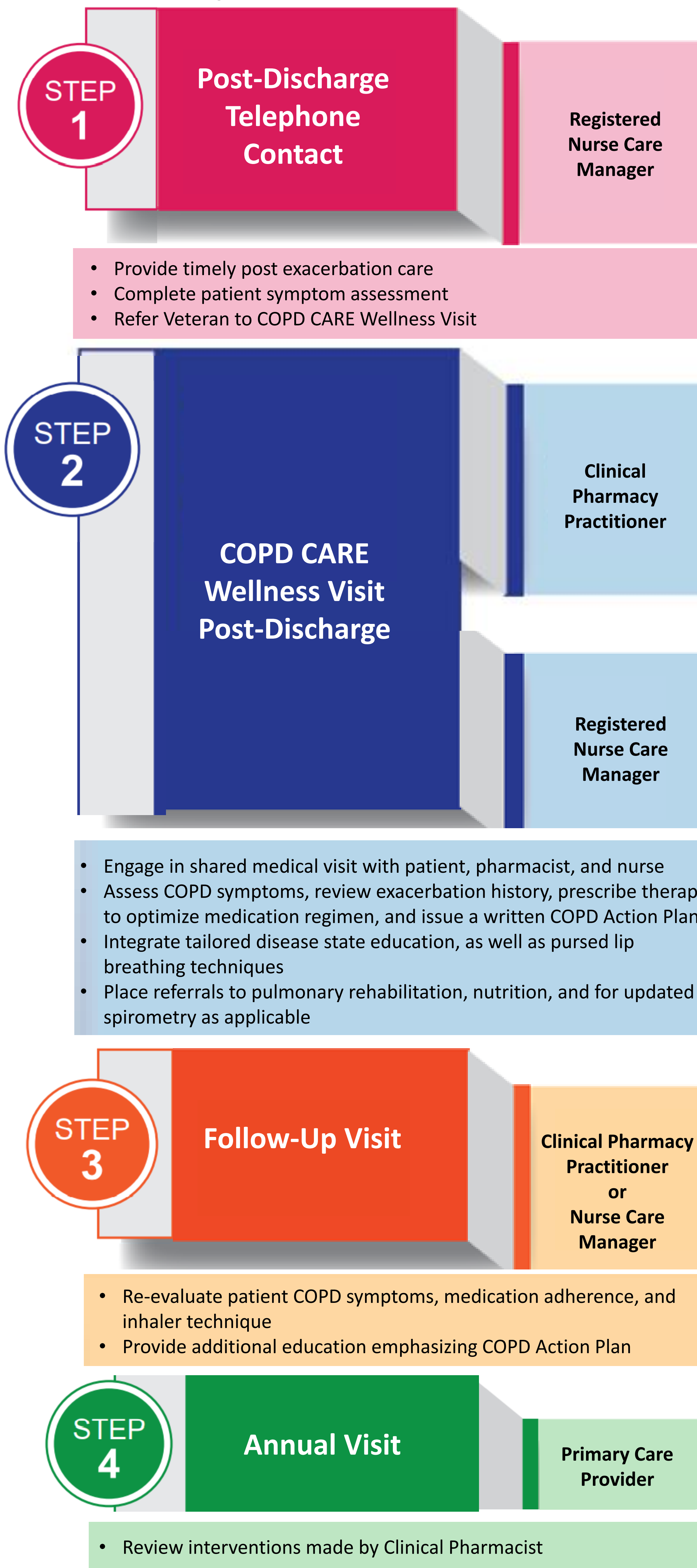
To expand and evaluate impact of a coordinated, team-based, care transition service titled **Chronic Obstructive Pulmonary Disease Coordinated Access to Reduce Exacerbations (COPD CARE)** across the Department of Veterans Affairs

Description of the Program

The COPD CARE service:

- Integrates pharmacists within the Patient Centered Medical Home (PCMH) to improve COPD care transitions
- Positions pharmacists as prescribers with credentialing and privileging to prescribe medications, order necessary labs and spirometry testing, place patient referrals, and coordinate patient follow-up
- Incorporates best practices detailed in the Global Initiative for Chronic Obstructive Lung Disease (GOLD) 2021 guideline into routine primary care delivery⁹

Service Components



Experience with the Program

Training Expansion leading to national rollout of COPD CARE from the initial program pilot at the William S. Middleton Memorial Veterans Hospital



- Amarillo VA Health Care System
- Central Texas Veterans Health Care System
- Captain James A. Lovell Federal Health Care Center
- Fort Detrick VA Clinic
- Kansas City VA Medical Center
- Leavenworth VA Medical Center
- North Texas Veterans Health Care System
- Robert J. Dole VA Medical Center
- San Francisco VA Health Care System
- South Texas Veterans Health Care System
- Southern Arizona Health Care System
- Tomah VA Medical Center
- VA Durham Medical Center
- VA Eastern Kansas Health Care System
- VA Pacific Islands Health Care System
- VA Puget Sound Health Care System
- VA Sierra Nevada Health Care System
- VA Southern Nevada Health Care System
- Veterans Health Care System of the Ozarks
- William S. Middleton Memorial Veterans Hospital

Evaluation Aims

Aim 1: Evaluate COPD CARE service impact on (1) patient access to primary care services and (2) 30-day readmission rates post-discharge

Aim 2: Compare integration of COPD best practices across a patient cohort that received the COPD CARE service and Treatment As Usual (TAU)

Methods

Prospective, multi-site evaluation of the COPD CARE service

- Two VA medical centers and five associated outpatient clinics in the Midwest and Southern US
- June 2019 to January 2020
- Data from VA Electronic Health Record
- Comparison of two patient cohorts, one including patients that received the COPD CARE service and a second Treatment As Usual (TAU) group including patients that received standard of care

Aim 1 Results: Access and Readmission

Bivariate Clinical Outcomes of COPD CARE versus Treatment As Usual (TAU)

Clinical Outcome	COPD CARE (N = 118)	Control (N = 122)	Relative Probability	F/Chi Square
All-Cause Hospital and ED Readmissions	17 (14%)	87 (27%)	0.52	0.0079
COPD-Related Hospital and ED Readmissions	9 (8%)	22 (18%)	0.44	0.0144
Death	0 (0%)	5 (4%)	--	0.0601
Patient Follow-Up Within 30 Days of Discharge by Pharmacist or Provider	109 (92%)	60 (49%)	1.88	< 0.0001

Experience with the Program (continued)

Aim 2 Results: Incorporation of Best Practices

Defined as interventions, proven as effective within the GOLD guideline, that occurred within 30-days of discharge during a primary care visit where COPD was addressed

Compared to patients that received Treatment As Usual, recipients of the COPD CARE service were:

12 times more likely to receive **inhaler technique correction**

24 times more likely to receive **inhaler dosing frequency correction**

5 times more likely to **experience a medication change**

3 times more likely to engage in **tobacco cessation counseling**

3 times more likely to be **willing to quit tobacco**

Conclusion

The COPD CARE service demonstrates the impact of a team-based coordinated care bundle integrating pharmacists as prescribers within the PCMH

Acknowledgements

Thank you to our partners who made this award possible:

- William S. Middleton Memorial Veterans Hospital
- Fayetteville VA Healthcare System of the Ozarks
- Clinical Pharmacy Practice Office (CPPO)
- Veterans Health Administration Diffusion of Excellence
- VA Academic Detailing
- Veterans Health Administration Employee Education System
- Quality Enhancement Research Initiative
- University of Wisconsin Institute for Clinical and Translational Research

Thank you to clinicians across the country who have taken the initiative to implement and provide care for our nation's Veterans through the COPD CARE service.

References

- Quaderi SA, Hurst JR. The unmet global burden of COPD. *Glob Heal Epidemiol Genomics*. 2018;3:21-23. doi:10.1017/ehg.2018.1
- Chronic Obstructive Pulmonary Disease Among Adults Aged 18 and Over in the United States, 1998–2009. Centers for Disease Control and Prevention National Center for Health Statistics. Published 2011. Accessed September 1, 2021. <https://www.cdc.gov/nchs/products/databriefs/db63.htm>
- Prevalence and most common causes of disability among adults in the United States. Centers for Disease Control Morbidity and Mortality Weekly Report (MMWR). Published 2009. Accessed September 2, 2021. <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm5815a2.htm>
- Frieden TR, Harold Jaffe DW, Rasmussen SA, et al. Morbidity and Mortality Weekly Report Centers for Disease Control and Prevention MMWR Editorial and Production Staff (Weekly) MMWR Editorial Board. *Rep*. 2015;64(11).
- Knutson K, Stebbins J, Vogler K, Whorley J, Holmes V, Harros I. Does COPD differ by veteran status in males 50-79 years of age? *Dis Disord*. 2018;21(1):1-5. doi:10.15761/didd.1000109
- Chung LP, Winship P, Phung S, Lake F, Waterer G. Five-year outcome in COPD patients after their first episode of acute exacerbation treated with non-invasive ventilation. *Respirology*. 2010;15(7):1086-1091. doi:10.1111/j.1440-1843.2010.01795.x
- McChan R, Radcliff T, Fish R, Sutherland ER, Welsh C, Make B. Predictors of rehospitalization and death after a severe exacerbation of COPD. *Chest*. 2007;132(6):1748-1755. doi:10.1378/chest.06-3018
- Ripley GC, Ahern JK, Litt ER, Wilson LK. *Chronic Obstructive Pulmonary Disease: A Rural Veterans Health Care Atlas Series*; 2014. www.vahealth.va.gov
- GOLD Committee. GOLD 2021 Global Report. Published online 2021:12-19. https://goldcopd.org/wp-content/uploads/2020/11/GOLD-REPORT-2021-v1.1-25Nov20_WMVP.pdf



Authors of this presentation have the following to disclose concerning possible financial or personal relationships with commercial entities that may have direct or indirect interest in the subject matter of this presentation: Ed Portillo has completed consultation work with AstraZeneca. Authors have no additional disclosures

