PROTOCOL TITLE:
THE PROJECT EPIC RANDOMIZED CONTROLLED TRIAL

Study Protocol & Statistical Analysis Plan

Date of Last Protocol Approval: July 17, 2024

NCT05040386

Principal Investigator: Anand S. Iyer, MD, MSPH

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UAB IRB Protocol Number: IRB-300007901

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Sites: University of Alabama at Birmingham, Cooper Green Mercy Health Services

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CONFIDENTIALITY STATEMENT

This document is confidential communication. Acceptance of this document constitutes agreement by the recipient that no unpublished information contained herein will be published or disclosed without prior approval of the Principal Investigator or other participating study leadership.

STATEMENT OF COMPLIANCE

The trial will be carried out in accordance with International Council on Harmonisation Good Clinical Practice (ICH GCP) and the following: United States (US) Code of Federal Regulations (CFR) applicable to clinical studies (45 CFR Part 46, 21 CFR Part 50, 21 CFR Part 56, 21 CFR Part 312, and/or 21 CFR Part 812).

Investigators and clinical trial site staff who are responsible for the conduct, management, or oversight of this clinical trial have completed Human Subjects Protection and ICH GCP Training.

The protocol, informed consent form(s), recruitment materials, and all participant materials will be submitted to the IRB for review and approval. Approval of both the protocol and the consent form(s) must be obtained before any participant is consented. Any amendment to the protocol will require review and approval by the IRB before the changes are implemented to the study. All changes to the consent form(s) will be IRB approved; a determination will be made regarding whether a new consent needs to be obtained from participants who provided consent, using a previously approved consent form.

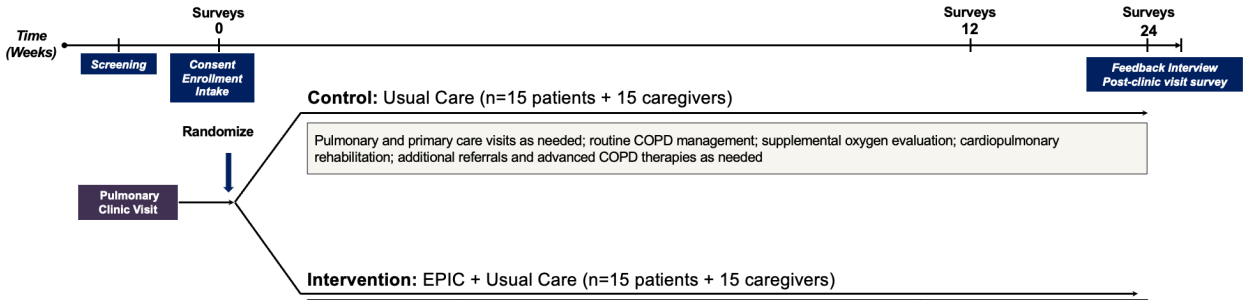
1 PROTOCOL SUMMARY

1.1 SYNOPSIS

Title:	**Project EPIC Randomized Controlled Trial**
Grant Number:	K76AG064327 (National Institute on Aging)
Study Description:	Project EPIC (Empowering People with Independence in COPD) is a multiphase study to advance the science of palliative care and geriatrics for people living with COPD and their caregivers. Embedded in Project EPIC is a multiphase intervention development program to refine and pilot test the EPIC early palliative care intervention in older adults with COPD and their caregivers informed by the ENABLE (Educate, Nurture, Advise Before Life Ends) model for early palliative care. EPIC is a 6-month early palliative care intervention that uses palliative care-trained nurse coach interventionists to deliver the *Charting Your Course* curriculum by phone to patients and their caregivers. In a formative evaluation, the EPIC intervention was refined to meet the needs older adults and their caregivers. This study seeks to summatively evaluate the refined EPIC intervention for feasibility and acceptability through a hybrid type-1, effectiveness-implementation pilot randomized controlled trial (RCT) of EPIC + usual COPD care (intervention) versus usual COPD care (control).
Aims:	**Aim 1**: Explore feasibility and acceptability of the EPIC intervention. **Hypothesis 1**. Participants can feasibly complete the EPIC intervention (>80% of intervention components completed) and will report high acceptability (*primary outcome*). **Aim 2**: Determine the feasibility of a hybrid-type 1 effectiveness-implementation trial in older adults with COPD and their caregivers. **Hypothesis 2**. It is feasible and not burdensome to recruit, randomize, retain, and survey older adults with COPD and their caregivers (*primary outcome*). **Exploratory Aim**: Explore mean and variance estimates on secondary outcomes to inform a fully-powered trial (*secondary outcome*).
Outcomes:	**Primary outcome**: Intervention and trial feasibility and acceptability **Secondary outcomes**: Life-Space mobility, quality of life, emotional symptoms, cognitive impairment, functional status, loneliness palliative care uptake, and caregiver burden
Study Population:	30 older adults with COPD and 30 caregivers
Phase:	Early Phase I
Enrollment Sites:	**2 sites:** Pulmonary Clinic at The Kirklin Clinic (**University of Alabama at Birmingham, Birmingham, AL**) (primary site) and Cooper Green Mercy Health Services-UAB Health Authority (**Birmingham, AL**)

Description of Study Intervention:	**ENABLE** (Educate, Nurture, Advise, Before Life Ends) is a theory-based, rigorously tested, and multicomponent early palliative care intervention that improved quality of life and emotional symptoms in patients with advanced cancer. In Phase 1 of Project EPIC, we conducted a formative evaluation from a diverse group of stakeholders to adapt ENABLE for adults with COPD and pilot tested the prototype EPIC intervention in patients and their caregivers. We then used nominal group technique to identify priority care needs of older adults with COPD and used these data to further refine the intervention. **EPIC** includes a series of weekly telephone-based, nurse coach-led sessions for patients (six) and their caregivers (four) aided by a manualized curriculum and followed by monthly check-in calls up to 6 months. Participants also complete activities focused on solving problems, improving self-care, eliciting values, making difficult decisions, and completing Advance Directives.
Study Duration:	6 months
Participant Duration:	Enrollment to 6 months

1.2 SCHEMA: HYBRID TYPE-1, EFFECTIVENESS-IMPLEMENTATION PILOT RANDOMZIED CONTROLLED TRIAL



Dyad Participant	Charting Your Course Telephone Sessions (weekly)						Telephone Follow-up (monthly)
Patients	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6	Follow-up Call (x3)
Caregivers	Session 1	Session 2	Session 3	Session 4	Follow-up Call (x3)		
Activities Booklet, Supportive Care Clinic visit (in-person or virtual)							

1.3 STUDY TIMELINE

Key Targets	Pre-Award	Year 1		Year 2		Year 3		Year 4		Year 5	
	-2020	(Sept 2020 - May 2021)		(June 2021- May 2022)		(June 2022 - May 2023)		(June 2023 - May 2024)		(June 2024 - May 2025)	
IRB approval and registration											
Database preparation											
Focus groups, thematic analysis, qualitative manuscript (Aim 1), trial protocol manuscript											
Coach training, intervention mapping, refine EPIC, print materials, prepare for trial (REDCap, IRB, clinical trials.gov, etc)											
Trial recruitment (2 dyads/month)											
R01 development and submission											1st Submit Feb 2024
Data analysis publish trial manuscripts											
Implementation of R01											

1.4 SCHEDULE OF ACTIVITIES

Measures	Pre-screening (Phone)	Approach, screen, & consent (Phone / In-person)	Baseline questionnaires; Randomization (Phone)	Weeks 2-24 (Phone)	Week 12 (Phone)	Week 24 (Phone)
EMR Review Eligibility, Screening (PTs)	X					
Informed Consent (PTs/CGs)		X				
Demographic/Clinical Intake (PTs/CGs)			X			
Randomization (after intake)			X			
CYC Sessions + follow-up calls (PTs/CGs)				X		
Patients (For all measures, see Section 12.1)						
Trial feasibility						X
Intervention feasibility (intervention arm)						X
Acceptability Interview (Qual)						X
Acceptability Survey (Quant)						X
Supportive Care Clinic Visit Survey (Quant)						X
Life-Space Mobility (LSA)			X		X	X
Quality of Life (CRQ)			X		X	X
Quality of Life (PROMIS Global Health 10)			X		X	X
Mood (HADS)			X		X	X
Cognitive Function (mTICS)			X		X	X
Loneliness (De Jong Gierveld Loneliness Scale)			X		X	X
Functional Status (Katz Index of ADLs)			X		X	X
Functional Status (Lawton IADLs)			X		X	X
Palliative care utilization			X			X
Caregivers (For all measures, see Section 12.1)						
Trial feasibility						X
Intervention feasibility (intervention arm)						X
Acceptability Interview (Qual)						X
Acceptability (Quant)						X
Supportive Care Clinic Visit Survey (Quant)						X
Life-Space Mobility (LSA)			X		X	X
Quality of Life (PROMIS Global Health 10)			X		X	X
Mood (HADS)			X		X	X
Loneliness (De Jong Gierveld Loneliness Scale)			X		X	X
Functional Status (Katz Index of ADLs)			X		X	X
Functional Status (Lawton IADLs)			X		X	X
Burden (Montgomery-Borgatta)			X		X	X
Abbreviations: Patient: PT; Caregiver: CG; LSA: Life Space Assessment; CRQ: Chronic Respiratory Questionnaire; HADS: Hospital Anxiety and Depression Scale; ADLs: Activities of Daily Living; IADLs: Instrumental ADLs; TICS: Telephone Interview for Cognitive Status						

2 INTRODUCTION

2.1 STUDY RATIONALE AND BACKGROUND

Chronic obstructive pulmonary disease (COPD) is the third leading cause of death among older Americans and contributes to significant global disability. Lung function declines with age, and over half of all COPD patients will be ≥75-years old in the next decade. COPD accelerates loss of quality of life and functional independence, and in the last two years of life, nearly all older adults with COPD have significant acute care utilization with widely variable hospice use across the country. Our **overall hypothesis** is that older COPD patients and their caregivers could benefit from a proactive geriatrics-palliative care approach ("GeriPal") to improve health and well-being before the end of life.

Specialist and nurse-led early, palliative care in advanced cancer improve quality of life and reduce healthcare utilization by integrating comprehensive supportive care and outlook planning alongside standard disease management at the time of diagnosis of a serious illness. The support for early palliative care extends to heart failure. GeriPal expands on this approach by delivering comprehensive, person-centered care directed at older adults and their families. Compared to cancer and heart failure, COPD is an under-recognized epidemic in older Americans. Unrecognized physical and emotional symptoms in COPD can be more severe than those experienced in advanced cancer and yet people with COPD rarely receive GeriPal. Research priorities of the National Institute on Aging (NIA) and the American Geriatrics Society (AGS) identify a critical need for GeriPal models. However, no GeriPal interventions have been systematically developed and tested in community-dwelling older adults with COPD. Despite improved access to palliative care across the US, the growing population of older adults with COPD will outpace GeriPal workforce trends. There is an especially desperate need for innovative GeriPal-COPD models for community-dwelling older adults from rural areas in the southeastern US, where COPD is prevalent and only one-third of hospitals report palliative care access.

Project EPIC (Empowering People with Independence in COPD) is a multiphase study to advance the science of palliative care and geriatrics for people living with COPD and their caregivers. Embedded in Project EPIC is a multiphase intervention development program to refine to refine and pilot test the EPIC early palliative care intervention in older adults with COPD and their caregivers, informed by the **ENABLE (Educate, Nurture, Advise Before Life Ends)** model for early palliative care, which improved quality of life and mood for patients with advanced cancer. ENABLE has been iteratively refined and tested over decades to deliver the essential elements of palliative care. Mixed methods research evolved the original ENABLE intervention from in-person to a telephone-based model to meet the needs of underserved rural and older populations, in whom COPD is frequent. ENABLE was the first palliative care intervention to successfully apply the Chronic Care Model (CCM) in advanced cancer and now heart failure populations to provide specificity and definition to disease-focused self-management. CCM has been successfully applied in COPD to improve disease-focused self-management. A systematic review of CCM in COPD concluded that patients who received interventions with ≥2 CCM components had lower healthcare utilization. The CCM also ensures that programs, such as EPIC, activate patients to develop effective relationships between the care team, system, and the community to improve COPD outcomes.

Informed by ENABLE, the EPIC intervention utilizes palliative care-trained nurse coaches to deliver the manualized "*Charting Your Course"* curriculum over the phone to patients and their caregivers. The curriculum can be completed in 6 weeks for patients and 4 weeks for caregivers. The entire intervention including monthly follow up phone calls is completed over 6 months. Sessions 1-3 are founded on

MacMillan's COPE (Creativity, Optimism, Problem-solving, Expert information) model. Sessions 4-6 are guided by the OUTLOOK model for life review and leaving a legacy. Palliative nurse coaches begin each CYC session with distress screening and identification of potential barriers. Coaches then engage participants in learning how to care for themselves and teach family caregivers how to be active partners in their loved one's care. In Phase I of Project EPIC, we formatively evaluated EPIC in a diverse and multidisciplinary group of stakeholders and refined the intervention for adults with COPD. In Phase II, we pilot tested the potential feasibility of EPIC in patients with COPD and their caregivers. Our preliminary work found that the intervention was acceptable and potentially feasible in this population. We then used nominal group technique to identify priority care needs of older adults with COPD and refined the intervention even further, tailored to needs of older adults.

The theoretical framework guiding our study is **Baltes' Theory of Successful Aging** which posits three domains of successful aging: 1) selection (S) of relevant goals; 2) optimization (O) of means to achieve those goals; and, 3) compensation (C) for losses due to COPD. The SOC framework shifts from coping with disability to adapting to disability, addresses barriers to activities of daily living, defines goals in the context of aging, and recruits social networks. Interventions that implemented the SOC framework resulted in greater self-efficacy, improved mastery and motivation, greater sense of purpose and well-being, and less restricted Life-Space mobility. However, the SOC framework has not yet been applied to COPD.

The current study continues to summatively evaluate EPIC through a hybrid type-1 effectiveness-implementation pilot randomized controlled trial (RCT) in 30 dyads of community-dwelling older adults with moderate to very severe COPD and their caregivers. Consistent with our prior research, we will summatively evaluate EPIC using the **RE-AIM** (Reach, Effectiveness, Adoption, Implementation, and Maintenance) framework. The primary implementation outcomes are feasibility and acceptability. Secondary GeriPal outcomes will be measured at baseline, 12 weeks, and 24 weeks. Data on secondary outcomes will inform the R01. Other secondary GeriPal outcomes include: 1) quality of life by the Chronic Respiratory Questionnaire and the PROMIS Global Health 10 instruments; 2) emotional symptoms by the Hospital Anxiety and Depression Scale; 3) cognitive impairment using the modified Telephone Interview for Cognitive Status; 4) Loneliness using the De Jong Gierveld Loneliness Scale; 5) functional status (activities of daily living and instrumental activities of daily living), 6) Caregiver burden using the Montgomery Borgotta scale; and, 7) palliative care uptake.

2.2 RISK/BENEFIT ASSESSMENT

2.2.1 KNOWN POTENTIAL RISKS

There is no risk of physical harm in this study; participants will not be ingesting agents or receiving medical treatments. There are two general risks associated with study participation. First, participants may become distressed after reflecting on their symptoms, mood, and quality of life during survey completion and/or during the intervention. In our experience of providing palliative care interventions, this risk is quite low. The surveys and intervention also offer the opportunity to reflect upon strengths and resilience, and participants often express gratitude for the chance to respond to the surveys and share their experiences. See Section 12.2 for our Emotional Distress/Suicide Protocol. The second risk concerns a loss of confidentiality regarding the data (i.e., the chance that participant answers to surveys will be seen by people not associated with the study). Plans to minimize these risks are described below.

2.2.2 KNOWN POTENTIAL BENEFITS

There may be no direct benefit to study participants. However, participants may benefit from the skills and information in the intervention and may experience better quality of life and less depressive and anxiety symptoms. Participants may also benefit from knowing that their participation in the study may help other patients with COPD and caregivers caring for persons with COPD by leading to more effective geriatrics-palliative care for this population. Participants may benefit from knowing they were able to provide feedback into the implementation and dissemination of this novel intervention for COPD.

2.2.3 ASSESSMENT OF POTENTIAL RISKS AND BENEFITS

The PI will be directly available 24 hours/day and 7 days/week to provide direct oversight and supervision of the study. During eligibility screening, we will use the 6-item screener for cognitive impairment to identify potentially eligible patients who may have severe cognitive impairment (score ≤3) and are therefore are not eligible. We are measuring distress symptoms at the beginning of each CYC session using the National Comprehensive Cancer Network's Distress Thermometer. For participants with clinically-significant distress at the beginning of the CYC sessions (≥4 on the National Comprehensive Cancer Network's Distress Thermometer), the nurse coach will notify the PI and the patient's primary provider. In the event the PI is not available, the participant will be immediately referred to Emergency Psychiatric Services Department at UAB which is available 24 hours/day, 7 days/week. Participants will also have the opportunity to discuss any distress with the nurse coaches who have extensive expertise in managing distress as part of their palliative care training. If the nurse coach identifies care needs beyond those they feel comfortable with addressing during the telephone sessions (eg, increased COPD symptoms of shortness of breath, cough, or wheezing), they will encourage the patient to address these issues with his or her primary provider and notify the PI. If needs are deemed severe by the nurse coach, such as poor social support, severe physical or emotional symptoms, polypharmacy, or difficulty establishing goals of care, the nurse coach will discuss these concerns with the PI and engage the clinicians at the Supportive Care clinic at The Kirklin Clinic. If a participant has significant cognitive impairment on the screening tool and is not eligible for the study (≤3 on the Callahan Screen), the study staff will notify the PI, the patient, and their primary clinician for further discussion. The PI will host weekly meetings with nurse coaches and will be directly available for questions the nurse coach may have and for guidance and will host once weekly team meetings to discuss any concerns or questions. The PI will be notified immediately in the event any participant

expresses suicidal ideation to the nurse coach or study coordinator. During normal business hours the participant will be immediately referred to the PI so that he may perform a risk assessment and develop an appropriate management plan with the participant. In the event the PI is not available, the participant will be immediately referred to Emergency Psychiatric Services Department which is available 24 hours/day, 7 days/week.

Regarding risks related to loss of confidentiality, all participants' contact information will be stored in the password protected REDCap database that exists within the firewalled network of the School of Medicine and School of Nursing. Each participant will be assigned an identification number so that survey data will not be labeled with the participant's name. All paper data will be stored in locked cabinets and password protected computers within the offices and laboratories at the School of Nursing. Only study personnel will be allowed to access the data. Transcripts from interviews will be reviewed by the PI and identifiable information such as names and places will be removed from the transcript. Post-intervention interviews of participants who completed the intervention arm will be conducted by the PI or trained study coordinator in their private offices to minimize any risk of overheard conversations. The study coordinator will ask participants if this is a good time to talk and will remind the participant that the interviews are audio recorded and transcribed. The study coordinator will allow the participant to skip any questions if needed. The electronic audio file will be stored on a password-protected computer by the study coordinator and uploaded to the secure website of Landmark Associates for verbatim transcription.

3 AIMS AND OUTCOMES

TRIAL OUTCOMES - SUMMATIVE EVALUATION	
RE-AIM Implementation Framework (Aims 1 & 2)	
Reach *Trial feasibility*	Rates of screening, enrollment, retention, reasons for exclusion and refusals, randomization, and attrition.
Adoption *Intervention feasibility*	Mean rates of completion of core EPIC components out of possible 10 for patients and 8 for caregivers. **Feasibility: Overall average completion of ≥8 sessions for patients ≥6 sessions for caregivers.**
Acceptability	***Quantitative*** *(Patients/Caregivers)*: Post-intervention survey on intervention acceptability. **Acceptability: Overall average score ≥8 of 10.** ***Qualitative*** *(Patients/Caregivers)*: Post-intervention semi-structured, in-depth interviews by telephone to explore acceptability, barriers, facilitators, and survey burden.
Implementation *Intervention fidelity*	A random sample of **50%** of palliative nurse coach sessions will be reviewed monthly using a rigorous fidelity checklist. Palliative nurse coaches who exhibit a pattern of non-adherence on **three consecutive ratings** will receive additional supervision and training.
Survey completion	***Quantitative***: Survey completion rates. **Feasibility: ≥80% of participants complete all surveys**
Define usual care arm	Review electronic medical record to capture elements of "usual COPD care".
Maintenance	Nurse coaches check in monthly to reinforce EPIC. Interviews explore barriers to maintenance.
"Effectiveness" (Exploratory Aim; Secondary Outcomes at Baseline, 12 weeks, and 24 weeks, where indicated)	
Life-Space Mobility (*Target Secondary Outcome*; *R01 outcome*)	**UAB Life Space Assessment (LSA)** *(Patients/Caregivers):* 15-item measure of community mobility; frequency, distance, and independence of movement in the 4 weeks prior to administration; LSA<60 (restricted Life-Space mobility) Lower scores → more restricted; MCID=5 points (α=0.80).
Quality of Life	**Chronic Respiratory Questionnaire** (*Patients*): 20-item measure of quality of life in COPD; domains of dyspnea, fatigue, emotional function, and mastery. Higher scores → better. MCID=0.5 (α=0.70) **PROMIS Global Health 10** (*Patients/Caregivers*): 10-item measure; physical and mental health domains; 9 questions rated on a 5-point Likert-scale, and 10th question rates pain on a scale of 0 to 10. Raw scores converted to standardized t-scores ranging from 0 to 100, with lower scores → worse QOL.
Caregiver Burden	**Montgomery Borgatta Caregiver Burden** (*Caregivers*): 14-item measure of caregiver burden along domains of objective burden (α=0.87-0.90), subjective demand burden (α=0.68-0.82), and subjective stress burden (α=0.81-0.88); higher scores → greater burden
Emotional Symptoms	**Hospital Anxiety and Depression Scale (HADS)** (*Patients/Caregivers*): 14-item measure of emotional symptoms has a 7-item anxiety and 7-item depression subscale with 4-point Likert scale per item; validated in COPD. Higher scores → more severe symptoms; MCID 1.5 points on subscale (α=0.82-0.83)
Cognitive Impairment	**Modified Telephone Interview for Cognitive Status (mTICS)** (*Patients/Caregivers*): 11-item measure, which has been validated in COPD. Higher scores associated with more cognitive impairment and validated over telephone (alpha=0.80).
Loneliness	**De Jong Gierveld Loneliness Scale** (*Patients/Caregivers)*: 6-item scale, 3 statements about 'emotional loneliness' and 3 about 'social loneliness' (alpha=0.88).
Functional Status	**Katz Index of Activities of Daily Living** *(Patients/Caregivers)*: 6-item measure of independence in activities. Range 0-6. Higher scores → more independence (MCID=0.47) **Lawton Instrumental Activities of Daily Living** *(Patients/Caregivers)*: 8-item measure of functioning in independent living. MCID=0.47; Higher scores → higher functioning (α=0.85).
Palliative Care Uptake	***Patients only*** (*across study period*): Advance Directive completion, code status, identified surrogate decision maker, goals of care documentation
Intake Survey (Baseline only; *Demographic, clinical characteristics*)	***Patients/Caregivers***: Age, race/ethnicity, gender, living situation, marital status, income, education, employment, smoking/alcohol history; spiritual history (religion, attendance at religious services, pray for one's health, pray for others' health), health literacy ***Patients only***: Charlson Comorbidity Index, number of medications, spirometry data, oxygen use, non-invasive ventilation, cardiopulmonary rehabilitation, home health, vaccinations; history of, falls, weight loss, dizziness, vision impairment, hearing impairment, vision/hearing/mobility aids, incontinence

4 STUDY DESIGN

4.1 OVERALL DESIGN

This hybrid type-1 effectiveness-implementation pilot RCT is designed to answer the question "Is EPIC feasible and acceptable in older adults with COPD and their caregivers?". The primary aims are to assess implementation feasibility and acceptability (intervention and trial) over 24 weeks (*Aims 1 and 2*). We will also explore means and variance estimates of the secondary GeriPal outcomes to guide future R01 development (*Exploratory Aim*). We will recruit 30 dyads of older adults with moderate to very severe COPD (FEV_1 <80%) from pulmonary clinic and their caregivers. Half of the dyads will be randomized to EPIC + usual care (n=30 patients and n=30 caregivers). To reflect current clinical realities and uphold the pragmatic design, the other half of dyads (n=30 patients and n=30 caregivers) will be assigned to usual care alone (**see Section 1.2 for Design Schema**). Participants will complete assessments at enrollment (T1), week 12 (T2), and week 24 (T3). The T2 assessment captures the short-term outcomes of the most intensive part of the intervention. The T3 assessment will capture the long-term outcomes of the intervention. Assessments will be administered by phone and entered into the REDCap database system by a data collector blinded to study arm. For non-responders after 2 weeks, assessments will be additionally attempted by the data collector.

4.2 SCIENTIFIC RATIONALE FOR STUDY DESIGN

Guided by the NIH Stage Model for the Behavioral Health Interventions, this study implements a hybrid type-1 effectiveness-implementation pilot RCT trial in NIH Stage 1 of intervention generation and refinement. We determined that a usual care condition was the optimal comparator to best serve the aims of this pragmatic trial. We considered an alternative control condition with equal attention by telephone (i.e. attention control); however, this could threaten the pragmatic trial design that is meant to reflect clinical realities for older COPD patients. Part of the design consideration of Aim 2 is also to better define "usual care". Usual COPD care at UAB consists of pulmonary clinic visits, illness education, medications (inhalers, nebulizers), vaccinations, advanced COPD therapies, imaging, treatment of COPD exacerbations, cardiopulmonary rehabilitation, and specialist referral. All of this is predominantly focused on the patient; no specific direct caregiver services exist to support their needs. To further examine and describe usual care, we collect information from participants in both conditions on accessed services. The information collected on secondary GeriPal outcomes will guide future R01 study and trial design.

4.3 JUSTIFICATION FOR INTERVENTION

COPD is an under-recognized epidemic in older Americans. Research priorities of NIA and AGS identify a critical need for GeriPal models. However, GeriPal integration is rare in COPD, and no GeriPal interventions have been systematically developed and tested in community-dwelling older adults with COPD. This study is innovative in the following ways: **First**, the ENABLE model for early, concurrent palliative care in oncology is successful in patients with advanced cancer to improved quality of life and survival. **Second**: EPIC's palliative nurse coaches guide both patients and their caregivers, and its telephone delivery model is primed to reach isolated older adults from rural settings. **Third**, eligibility will not be limited to end-stage COPD as in other studies; instead, we will include participants with less severe COPD who also have significant COPD symptoms such as breathlessness, use oxygen, or have been hospitalized in the prior year, which are associated with high emotional burden and reduced and

quality of life in adults with COPD. **Fourth**, our multiphase study is the first to use Baltes' Theory of Successful Aging to refine the geriatrics content of ENABLE to meet specific care needs of the old-old. **Fifth**, we will measure critical data on feasibility, acceptability, and GeriPal secondary outcomes to inform the R01.

4.4 END-OF-STUDY DEFINITION

Participants are considered to have completed the study if they have completed week 24 questionnaires.

5 STUDY POPULATION

5.1 INCLUSION CRITERIA

In order to be eligible to participate in this study, potential participants must meet all of the following criteria:

Patient Participant Inclusion Criteria (must meet all of the following):

1. ≥60 years;
2. COPD on routinely collected spirometry ($FEV_1/FVC < 0.70 + FEV_1 < 80\%$);
3. Able to speak English;
4. At least one of the following:
    - 4a) Severe breathlessness as defined by a documented modified Medical Research Council (mMRC) Dyspnea Scale Score >2 in the medical record or any of the following levels of severe breathlessness by medical review: breathless after walking about 100 yards, breathless after a walking few minutes on level ground, or too breathless to leave the house or when dressing); OR,
    - 4b) ≥1 hospitalization in the year prior but >30 days from enrollment; OR,
    - 4c) On supplemental oxygen (exertional or continuous).

Caregiver Participant Inclusion criteria:

1. ≥18 years;
2. Self-reporting as "an unpaid spouse or caregiver, relative, or friend who knows [the patient] well and is involved in their medical care";
3. Able to speak English.

5.2 EXCLUSION CRITERIA

An individual who meets any of one of the following criteria will be excluded from participation in this study:

Patient Participant Exclusion Criteria (can be excluded for ANY of the following):

1. No access to a dedicated telephone service;
2. Recent hospitalization for any reason or exacerbation of COPD in the past 30 days or ongoing exacerbation symptoms requiring treatment with antibiotics and steroids;
3. Treated within the past 60 days for an advanced cancer defined as metastatic and/or recurrent/progressive stage III/IV cancer, including brain, lung, breast, gynecologic, head and neck, gastrointestinal, genitourinary cancer, and hematologic malignancies by self report or chart review;
4. Active schizophrenia, major depressive disorder, bipolar disorder, suicidal ideations, or substance abuse by self-report or chart review (Active means currently being treated for schizophrenia, bipolar disorder, or suicidal ideations or having active and untreated major depressive disorder, i.e. not under the care of a clinician or not on medications such as antidepressants or mood stabilizers, or having active and untreated substance abuse, i.e. not on medication or enrolled in a substance abuse program)
5. Non-correctable hearing impairment (i.e. hearing impairment despite hearing aids);
6. Severe cognitive impairment (score ≤3 points on 6-item Callahan Screener): a) Correctly identify current year (1 point); b) Correctly identify current month (1 point); c) Correctly identify current day (1 point); d) Correctly recall "apple" after 5 minutes (1 point); e) Correctly recall "table" after 5 minutes (1 point); f) Correctly recall "penny" after 5 minutes (1 point)

Caregiver Exclusion Criteria:

1. No access to a dedicated telephone service;
2. Active schizophrenia, major depressive disorder, bipolar disorder, suicidal ideation, or substance abuse by self-report (Active schizophrenia, major depressive disorder, bipolar disorder, suicidal ideation, or substance abuse by self-report or chart review (Active means currently being treated for schizophrenia, bipolar disorder, or suicidal ideations or having active and untreated major depressive disorder, i.e. not under the care of a clinician or not on medications such as antidepressants or mood stabilizers, or having active and untreated substance abuse, i.e. not on medication or enrolled in a substance abuse program)
3. Non-correctable hearing impairment (i.e. hearing impairment despite hearing aids);
4. Severe cognitive impairment (score ≤3 points on a 6-item Callahan screener): a) Correctly identify current year (1 point); b) Correctly identify current month (1 point); c) Correctly identify current day (1 point); d) Correctly recall "apple" after 5 minutes (1 point); e) Correctly recall "table" after 5 minutes (1 point); f) Correctly recall "penny" after 5 minutes (1 point)

5.3 LIFESTYLE CONSIDERATIONS

N/A

5.4 SCREEN FAILURES

Screen failures are defined as participants who consent to participate in this study but are not subsequently randomized. Reasons for screen failure include:

1) Failure of the patient and/or the caregiver to complete baseline measures within 14 days of signing informed consent.
2) Death of the patient and/or caregiver prior to completing baseline measures.

5.5 STRATEGIES FOR RECRUITMENT AND RETENTION

Duration of Humans Subjects Involvement: Participant enrollment will begin in study year 2 (Tentatively: June 2022) and last until the study year 4 (Tentatively: June 2024). Some participant activity may extend into study year 5 depending on recruitment.

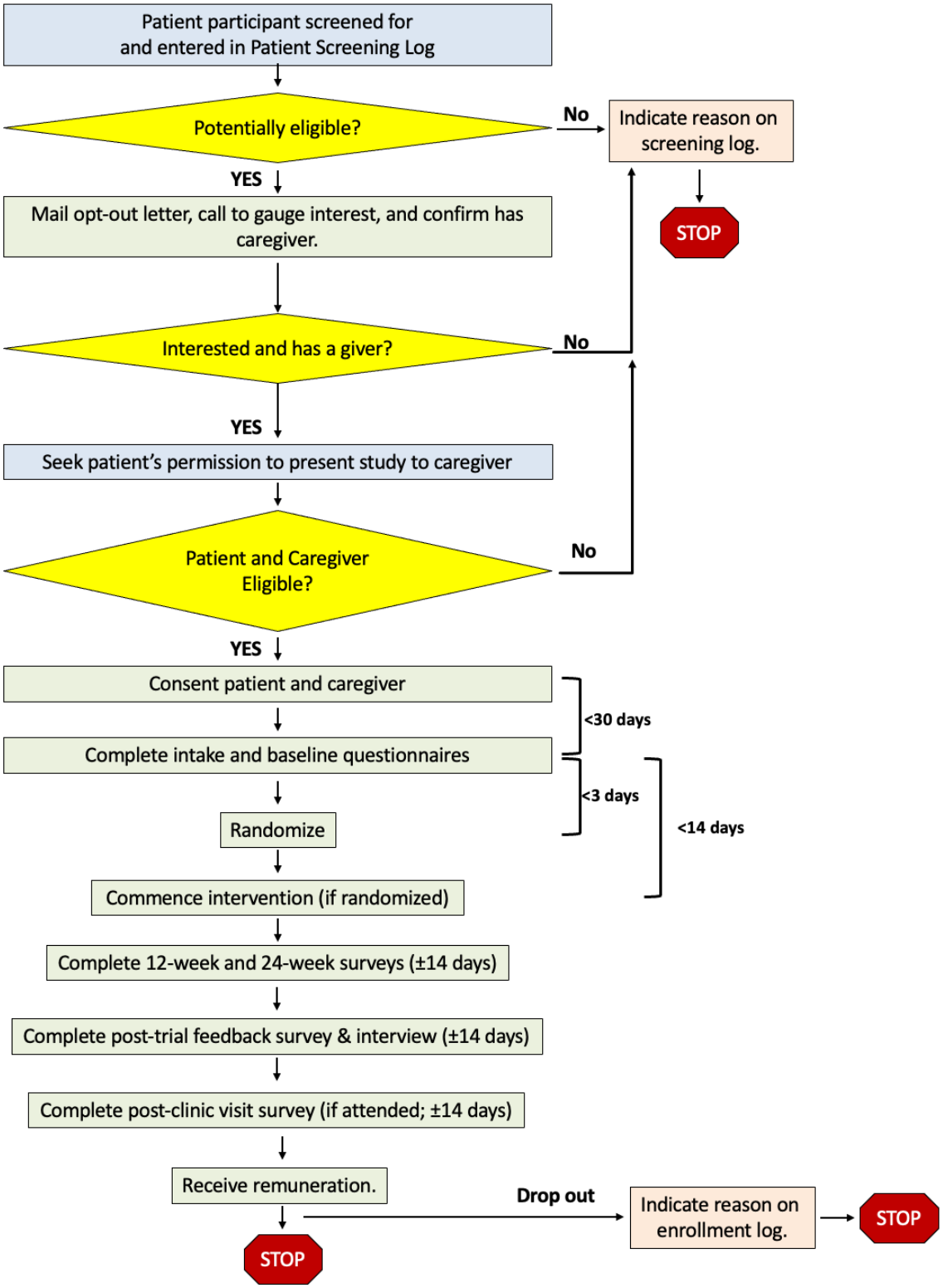
Length of Active Enrollment: We will recruit 2 dyads per month during study years 2 through 4 (2022-2024), to reach our target sample size of 30 dyads by study year 4.

Loss to Follow-Up: We are considering an estimated 20% attrition rate based on the nature of serious illness and have accounted for this loss to follow up by inflating the sample size from 24 to 30 patient participants.

Referral Sources and Estimated Enrollment Rate. The study population will be recruited from the pulmonary clinics at The Kirklin Clinic (UAB). Depending on recruitment goals, we may also include recruitment from Cooper Green Mercy Health Services (UAB Health Authority). We aim to recruit 30 dyads over 3 years. The UAB Pulmonary program saw nearly 800 older adults with COPD in 2018. Our benchmark is 2 dyads per month

Recruitment and Enrollment Procedures. Study staff identify potential patients and their caregivers with a COPD diagnosis in the electronic medical record (UAB IMPACT system; after gaining HIPAA waiver) who have a planned office visit at study recruitment sites in the next 1-2 weeks. After gaining opt out permission from the patient's attending pulmonologist, the study coordinator calls the patient at home. The coordinator informs the patient about the study, answers any questions, invites those interested and eligible to participate, and asks permission from the patient to present the study to the caregiver. Patients and their caregivers (with permission) are screened at this time for eligibility, and agreeable and eligible patients and caregivers complete consent.

Figure. Flow diagram of study procedures.



Procedures to Monitor Enrollment and Track and Retain Participants. The study coordinator who is based at UAB, will prepare weekly enrollment reports that are reviewed at weekly team meetings. The reports will summarize the number of patients and caregivers identified, screened, and enrolled.

Strategies to Promote Retention. Numerous retention strategies are being used to maximize participant intervention and questionnaire completion rates, consistent with best practices:

- Participants will each receive remuneration for each survey assessment completed: $40 for baseline, $50 for 12 weeks, $60 for 24 weeks. Participants will also receive $50 for completing a post-trial feedback session and $25 for completing a post-supportive care clinic visit feedback survey for those who complete that visit.
- Use of a trained, experienced study coordinator at UAB who has familiarity with the university, a PI with established relationships with the pulmonologists and their staff, a study team with training in cultural sensitivity and who follow study-team developed recruitment scripts, and who have prior experience recruiting from the cancer population.
- Telephone-based intervention delivery, allowing for flexible scheduling with participants at a day and time that maximizes convenience.
- Participants will be mailed a welcome letter with information about UAB and resources.
- Because lag time between study activities can result in participants not remembering what they have been asked to do for the study, protocol windows consistent with our prior studies will be instituted to ensure timely contact between steps in the procedures.

Contingency Plans. Our pulmonary clinics at UAB see on average 800 adults who are 60 years or older with COPD each year and could potentially meet eligibility criteria. This is sufficiently large enough to target our goal recruitment. If enrollment falls significantly below the accrual benchmarks, defined as less than 2 participants per month, we will consult with the Recruitment and Retention Shared Facility of the UAB Division of Preventive Medicine to identify alternative strategies. These may include face-to-face recruitment by the study coordinator or expansion to include primary care clinics at UAB and Cooper Green Mercy Health Services (UAB Health Authority).

Potential Study-Related Barriers. We have identified that attendance at a separate palliative care clinic visit may be burdensome for some older adults with COPD due to transportation needs, mobility issues, supplemental oxygen, and severe dyspnea. We also identified that some electronic We will continue to explore this barrier in the current study and consider switch to telehealth visits. Our qualitative data reveal that the telephone delivery model of the EPIC intervention resonates with older adults from rural and underserved areas where COPD is prevalent, that the weekly phone calls are not burdensome, and that completion of all patient and caregiver telephone sessions is feasible.

6 STUDY INTERVENTION

6.1 STUDY INTERVENTION

6.1.1 STUDY INTERVENTION

The basic **delivery elements** of the EPIC intervention are as follows:

- **Initiation across COPD severity stages:** The intervention is administered to patients across COPD severity stages (moderate to very-severe COPD)
- **Nurse coach-led:** The intervention is led by trained nurse coaches with weekly and as needed supervision by the PI and specialist palliative care clinicians.
- **Charting Your Course (CYC) Curriculum:** ***An Intervention for Patients with COPD and their Caregivers:*** The CYC curriculum is a reproducible and scalable telephone-based coaching curriculum informed by prior ENABLE trials with telephone scripts and patient and caregiver guidebooks.
    - **Patients complete six sessions, and caregivers complete four weekly sessions, followed by monthly check-in calls** and **homework assignments**.
    - Sessions 1-3 are founded on **MacMillan's COPE** (Creativity, Optimism, Problem-solving, Expert information) model. Sessions 4-6 are guided by the **OUTLOOK model** for life review and leaving a legacy.
    - Palliative nurse coaches begin each CYC session with distress screening and barrier identification.
- **Telephone coaching sessions:** These sessions cover specific topics every 1 to 2 weeks. Each last 20 minutes/session [or up to 1 hour if needed] and are followed by monthly telephone follow-up. Coaches engage participants in learning how to care for themselves and teach caregivers how to be active partners in their loved one's care.
- **Distress screening and individualized problem solving support:** Each encounter begins with distress screening (based on the NCCN distress thermometer) to identify potential problems that may need assistance with and to help customize core sessions.
- **EPIC Toolkit:** Participants receive an EPIC toolkit (hereafter "Toolkit"), a packet that contains educational information pertaining to the coaching sessions. The Toolkit also serves as a tool to organize intervention materials and as a resource guide for the participant. The Toolkit is hand delivered at the first session or mailed prior to initiation of core sessions.

6.1.2 SUMMARY OF PROTOCOL

Training of Study Team Members

The intervention requires two nurse coaches who are hired and trained by the PI and co-investigator, Dr. Wells. Advanced training specific to EPIC consists of independent readings, review of all intervention materials and the protocol, in-depth discussions on COPD and its management, and thorough review of the protocol. The PI will chair weekly nurse coach meetings to review progress and intervention receipt.

Enrollment Procedures.

All agreeable and eligible patient participants who consent to participate in the study complete an intake form that includes demographic data (all participants), clinical data (patients only), and symptom surveys (patients and caregivers). We are measuring Life-Space mobility, quality of life, caregiver burden, functional status, mood symptoms, loneliness, and cognitive impairment. If time allows for participants, baseline surveys will be completed immediately after consent. If time does not permit in the patient's schedule, the intake surveys will be completed by telephone at a mutually-agreed upon time. Agreeable and eligible caregivers who consent to participate in the study will also be provided a short intake form of their demographic and background information as well as intake symptom surveys. If the time does not permit in the caregiver's schedule, the intake surveys will be completed by telephone at a mutually agreed upon time.

Summary of Randomization Procedures.

Randomization will take place after the informed consent and intake are obtained from both the patient and the caregiver. We will randomize 30 patient-caregiver dyads in a 1:1 fashion to the study arms: 1) EPIC + usual care (n=15 dyads); and 2) usual care alone (n=15 dyads). A randomization table will be generated to allocate all 30 dyads to the study arms. Randomization procedures will be supervised by the biostatistician, Dr. Kim (Co-I and trial statistician) at UAB. The randomization scheme will be executed using an Excel randomization table and recorded in REDCap. The study coordinator complete the randomization procedure and record study group in REDCap. The study coordinator will inform the usual group participants of their group assignment and will also alert the interventionists to initiate intervention activities with the intervention group participants.

6.1.3 SUMMARY OF TRIAL PROCEDURES

Control Arm

The control arm of the study will be usual care for COPD in pulmonary clinic (**Table 1**) which includes symptom management, inhalers, advanced COPD therapies as needed, illness education, informal tobacco cessation counseling, supplemental oxygen testing, and referral to cardiopulmonary rehabilitation and other services as appropriate per the clinician.

Table 1. Control Arm Procedures and Timeline (Usual Care)

Study Week	Type of Session	Investigator	Participant	Estimated Participant Time (minutes)	Description
1	In-person/ Phone	Coordinator	Patient + Caregiver	60	Study introduction, informed consent, intake surveys
2-24	N/a	N/a	Patient + Caregiver	N/a	Usual COPD care
12	Phone	Data Collector	Patient + Caregiver	60	Midpoint surveys
24	Phone	Data Collector	Patient + Caregiver	60	Exit surveys
24	Phone	Coordinator	Patient + Caregiver	30	Post-intervention acceptability survey Post-intervention feedback interview

Intervention Arm

Dyads randomized to the intervention arm will receive EPIC along with usual care (**Table 2**). EPIC includes weekly, telephone-based palliative care nurse coaching aided by the manualized curriculum, "*Charting Your Course (CYC): An Intervention for Patients with COPD and their Caregivers"*. This is followed by brief telephone follow-up calls monthly until study completion. Patient participants are also scheduled for a visit with the Supportive Care Clinic at The Kirklin Clinic, where trained clinicians complete a comprehensive palliative care assessment, virtually if preferred. Current intervention materials for EPIC and nurse coach CYC phone scripts are being edited and refined. Final copies of all intervention materials and phone scripts will be submitted as an amendment at a later date.

Table 2. Intervention Arm Procedures and Timeline (EPIC + Usual Care)

Study Week	Type of Session	Investigator	Participant	Estimated Participant Time (minutes)	Description
1	**In-person/ Phone**	**Coordinator**	**Patient + Caregiver**	**60**	**Study introduction; consent; intake surveys**
2-12	In-person/ Virtual	N/A	Patient + Caregiver	60	Supportive Care Clinic visit; comprehensive palliative care assessment
3	Phone	Nurse coach	Patient + Caregiver	45	*CYC Session 1*: Problem solving
4	Phone	Nurse coach	Patient +	45	*CYC Session 2*: Self-care management

			Caregiver		
5	Phone	Nurse coach	Patient + Caregiver	45	*CYC Session 3*: Assessing, prioritizing, and managing symptoms
6	Phone	Nurse coach	Patient + Caregiver	45	*CYC Session 4*: Communication skills, decision-making, and advance care planning.
7	Phone	Nurse coach	Patient only	30	*CYC Session 5*: Life review, supportive counseling
8	Phone	Nurse coach	Patient only	30	*CYC Session 6*: Leaving a legacy
12	**In-person or Phone**	**Data Collector**	**Patient +** Caregiver	**60**	**Midpoint surveys**
12-24	Phone	Nurse coach	Patient + Caregiver	20	Monthly telephone check-in call
24	**In-person or Phone**	**Data Collector**	**Patient + Caregiver**	**60**	**Exit surveys**
24	**Phone**	**Coordinator**	**Patient + Caregiver**	**30**	**Post-intervention acceptability survey + phone feedback interview**
24	**Phone**	**Coordinator**	**Patient + Caregiver**	**30**	**Post-supportive care clinic visit survey**
CYC sessions refer to the chapters in the patient and caregiver guidebooks. The coordinator and nurse coaches record completion of the sessions in REDCap. Patient participants complete CYC Sessions 1-6, while caregiver participants complete CYC Sessions 1-4.					

Materials

Participants randomized to the intervention arm will be mailed a study packet consisting of the following: 1) EPIC introductory materials including an introduction of the study team; and 2) EPIC toolkit for patients and caregivers consisting of CYC materials, blank activities sheets, resources, and a blank Advance Directive.

Charting Your Course Curriculum

The project coordinator will notify the nurse coaches of participant enrollment and randomization to the intervention arm to schedule the CYC sessions at home by telephone. Patients randomized to the intervention arm will receive telephone calls by a trained nurse coach guided by telephone scripts. Caregivers will receive separate telephone calls by a different nurse coach following the same procedures. In the first telephone call, the nurse coach will introduce themselves and will describe the overall EPIC intervention. Patient participants will then begin 6 weekly intervention telephone sessions with the nurse coach. The nurse coach will call the patient at home for each session at a time that is convenient for the patient. The sessions cover the materials found in the CYC guidebook and follow telephone scripts. All CYC sessions will be audio-recorded as conducted in previous trials for fidelity monitoring. The PI will conduct fidelity monitoring on at least 50% of all audio-recordings as described below.

Figure. EPIC CYC Sessions for Patients and Caregivers							
Sessions	**1**	**2**	**3**	**4**	**5**	**6**	**Follow-Up**
Patient	COPE, Problem Solving	Self-care	Symptom Management	Communication, Support, Decision-Making	Life Review, Accomplishments	Forgiveness, Regrets, Creating a Legacy	Monthly Follow-Up (*Telephone*)
Caregiver	COPE, Problem Solving, Role	Self-care	Being a Partner in Symptom Management	Communication, Support, Decision-Making	Monthly Follow-Up (*Telephone*)		
Activities	Medications and Symptom List, Activity Log, Communicating with Providers Checklist, Ottawa Personal Decision Guide, and Advance Directive						

Each telephone session with the nurse coach begins by asking if the time is convenient for the participant, a reminder that the calls are audio-recorded for fidelity monitoring and quality assurance, and an assessment of the patient participant's level of distress using the National Comprehensive Cancer Network's Distress Thermometer included in the guidebooks. The nurse coach uses the telephone script to guide conversation with the participant. The nurse coach will call back monthly after completing the last CYC session to review any needs of the patient participant per the nurse coach telephone script and to assess maintenance of practices. Caregiver participants will separately complete 4 intervention telephone sessions using their own guidebook. Phone calls will be scheduled at a day and time that is convenient for the caregiver participant, and the nurse coach.

Post-intervention Interviews

Post-intervention interviews of participants will be conducted by the trained project coordinator using an interview guide to seek participant feedback and experiences of the intervention for those randomized to intervention and the overall project for all participants. The study coordinator will conduct the interviews by telephone. He or she will ask participants if this is a good time to talk and will remind the participant that the interviews are audio recorded and transcribed. The study coordinator will allow the participant to skip any questions if needed. The electronic audio file will be stored on a password-protected computer by the study coordinator and uploaded to the secure website of Landmark Associates for verbatim transcription. The PI will review every 5 transcripts for fidelity monitoring and to refine the interview. The transcription text will be coded with the participant's study identification number and reviewed by the PI to remove any protected health information from the text, including names, places, and affiliations. The digital file of the audio recording will be deleted after review of the transcript.

6.2 FIDELITY MONITORING

6.2.1 INTERVENTIONIST TRAINING AND TRACKING

Training. We have a structured orientation checklist and treatment manual that will be used to train interventionists. Drs. Iyer (PI) and Wells (Co-I) will train two nurse coaches (one for each participant type) to deliver the intervention. Nurses are well suited to learn EPIC as it builds upon their expertise in therapeutic relationship building, distress screening, and resource referral. The training program is approximately 70 hours in length and is modeled on procedures developed by our study team over the course of several clinical trials of behavioral interventions and our current pilot trial. The training consists of independent readings, interactive online modules, videos including demonstration of coaching techniques (e.g., active listening, single and double-sided reflections), review of all study protocols and procedures, provision of the treatment manual, and role play of six training cases.

Supervision. Throughout the study, interventionists will have weekly supervisory meetings with Drs. Iyer and Wells to review calls and sessions with all active intervention-group participants. In addition, nurse coaches will have 24-7 access to Drs. Iyer and Wells for any participant issues that arise.

Fidelity. Consistent with our prior trial procedures, all palliative care coach phone sessions will be audio recorded, and a random sample of at least 50% of these audio recordings will be scored quarterly using a checklist to ensure that treatment is being administered reliably over time and across palliative care coach. For each scored session, feedback will be reviewed with the palliative care coach in order to maximize performance and expertise. A palliative care coach who exhibits a pattern of non-adherence on three consecutive ratings will be required to receive additional training and supervision. The PI and study coordinator will also randomly sample 50% of the geriatric-palliative care assessments from the supportive care clinic visits at least quarterly to ensure the elements of the assessment were completed.

6.3 MEASURES TO MINIMIZE BIAS: RANDOMIZATION AND BLINDING

The randomization scheme will be executed via REDCap, a clinical trials management software program used for randomization and data tracking. Participants will be randomly assigned to group in a 1:1 fashion using a computer-generated program overseen by Dr. Kim (Co-I and trial statistician) at UAB. The study coordinator will be alerted to the assignment in REDCap. The study coordinator will inform the usual group participants of their group assignment and will also alert the interventionist to initiate intervention activities with the intervention group participants. Data collectors will remain blind to group assignment, and participants will be instructed not to discuss their assignment with the UAB data collector facilitating questionnaire completion over the telephone.

6.4 STUDY INTERVENTION/EXPERIMENTAL MANIPULATION ADHERENCE

Four strategies (consistent with NIH and TIDieR guidelines) will ensure intervention fidelity: 1) Interventionist training will be standardized and overseen by Drs. Iyer and Wells; 2) Nurse coaches will follow study-team developed intervention scripts for each of the core sessions and monthly follow-up; 3) For each intervention contact, charting templates will be used by interventionists to further ensure that essential topics are addressed; and, 4) During the study, 50% of nurse coach sessions will be

randomly selected for treatment fidelity monitoring by Dr. Iyer using a fidelity checklist developed in our pilot trial. Of the sessions chosen for fidelity checks, audio-recorded sessions of the CYC sessions will be randomly selected for ratings. If ratings are below 80% adherence, supervision will focus on necessary techniques to improve the score.

6.5 CONCOMITANT THERAPY

6.5.1 RESCUE THERAPY

N/A

7 INTERVENTION DISCONTINUATION AND PARTICIPANT DISCONTINUATION/WITHDRAWAL

7.1 DISCONTINUATION OF STUDY INTERVENTION

Participants may withdraw or voluntarily stop their intervention sessions at any time. The reason(s) for discontinuing the intervention will be documented (e.g., intervention too burdensome, repeated missed intervention sessions, too busy, patient too ill, etc.), and the participant will be invited to continue with data collection at 12 and 24 weeks and beyond.

7.2 PARTICIPANT DISCONTINUATION/WITHDRAWAL FROM THE STUDY

Participants are free to withdraw from participation in the study at any time upon request. Reasons for participant discontinuation or withdrawal from the study will be recorded. The PI may discontinue a participant from the study for the following reasons:

- Significant study intervention non-adherence
- Lost-to-follow up; unable to contact participant (see **Section 7.3, Lost to Follow-Up**)
- Any event or medical condition or situation occurs such that continued collection of follow-up data would not be in the best interest of the participant

7.3 LOST TO FOLLOW-UP

A participant will be considered lost to follow-up if he or she fails to show up for **3 scheduled appointments** with the nurse coach, and study staff are unable to contact the participant after **at least 3 attempts.** All lost-to-follow up decisions will be made by the PI as special circumstances may warrant additional study contact attempts. The following actions are taken if a participant fails to complete intervention sessions or data collection time points:

- Research staff will attempt to contact the participant, reschedule the missed component (eg. CYC session), counsel the participant on the importance of adhering to the assigned schedule and ascertain if the participant wishes to and/or should continue in the study
- Before a participant is deemed lost to follow-up, the research team will make every effort to regain contact with the participant. Contact attempts will be documented in the study's tracking system.
- Should the participant continue to be unreachable, he or she will be considered to have withdrawn from the study with a primary reason of lost to follow-up. Withdrawal letters are found in the Appendices section.

8 STUDY ASSESSMENTS AND PROCEDURES

8.1 ENDPOINT AND OTHER NON-SAFETY ASSESSMENTS

Patient and caregiver participants are asked to complete baseline surveys and follow-up questionnaires at 12 and 24 weeks by phone. Baseline surveys are collected by the trained study coordinator after consent and prior to randomization. For the baseline, 12-week, and 24-week surveys, a blinded data collector will call the participant at home to complete.

- There is a 14-business day window on either side of the due date for participants to complete their follow-up questionnaires. Participants can complete study questionnaires within a 28-business day timeframe from 14 days before the time point to 14 days after.
- Participants have 30 business days to complete baseline questionnaires after completing informed consent. Caregivers will complete follow-up questionnaires as per the timeline (i.e., even if the patient baseline is completed three weeks after the caregiver baseline, both parties will complete the first follow-up questionnaire 12 weeks after the patient baseline questionnaire completion date).
- Data collected outside of these time points will not be evaluable.
- To minimize missing data, a postcard reminder of an upcoming questionnaire window will be sent 1-2 weeks prior to opening of the data collection window (**Survey Reminder Postcard: Section 12.4.9**). Data collectors will also begin calling participants within 14 days of the study window to ascertain if they would like to complete questionnaires by phone or web.

A screening and tracking log will be used to track whose follow-up questionnaires are due, and when the windows open and close.

If a participant refuses to complete a questionnaire or says it is too much, attempts will be made to try to have them at least complete the mood and quality of life measures (patient and caregiver).

8.2 SAFETY ASSESSMENTS

N/A

8.3 ADVERSE EVENTS AND SERIOUS ADVERSE EVENTS

8.3.1 DEFINITION OF ADVERSE EVENTS

Very broadly, an adverse event is any untoward event occurring to a participant while enrolled on a clinical trial, which may or may not be related to the intervention and/or study procedures.

8.3.2 DEFINITION OF SERIOUS ADVERSE EVENTS

Broadly, an adverse event is any untoward event occurring to a participant while enrolled in a clinical trial, which may or may not be related to the intervention and/or study procedures. In our experience of providing palliative care interventions using highly experienced palliative care nurse coaches, the risk of emotional distress is quite low. Furthermore, the intervention offers participants the opportunity to reflect upon strengths and resilience, and participants often express gratitude for the chance to share their experiences. This trial is considered minimal risk as there are not expected to be any serious adverse events related to the study intervention or procedures, and we are not collecting blood samples or prescribing new medications in this study. While death and hospitalization are anticipated of patient participants, these are is due to medical illness rather than the study intervention.

8.4 UNANTICIPATED PROBLEMS

This protocol uses the definition of Unanticipated Problems as defined by the Office for Human Research Protections (OHRP). OHRP considers unanticipated problems involving risks to participants or others to include, in general, any incident, experience, or outcome that meets **all** of the following criteria:

- Unexpected in terms of nature, severity, or frequency given (a) the research procedures that are described in the protocol-related documents, such as the Institutional Review Board (IRB)-approved research protocol and informed consent document; and (b) the characteristics of the participant population being studied;
- Related or possibly related to participation in the research ("possibly related" means there is a reasonable possibility that the incident, experience, or outcome may have been caused by the procedures involved in the research); and
- Suggests that the research places participants or others at a greater risk of harm (including physical, psychological, economic, or social harm) than was previously known or recognized.

8.5 REPORTING OF ADVERSE EVENT AND UNANTICIPATED PROBLEMS

A summary of anticipated serious adverse events (i.e. death and hospitalizations) will be reported to the Safety Officer and NIA PO quarterly. The PI will report unanticipated problems to the reviewing IRB, SO and the NIA PO within 48 hours. The report will include the following information:

- Protocol identifying information: protocol title and number, PI's name, and the IRB project number
- A detailed description of the event, incident, experience, or outcome
- An explanation of the basis for determining that the event, incident, experience, or outcome represents an UP
- A description of any changes to the protocol or other corrective actions that have been taken or are proposed in response to the UP

8.5.1 REPORTING UNANTICIPATED PROBLEMS TO PARTICIPANTS

N/A

9 STATISTICAL CONSIDERATIONS

9.1 HYPOTHESES

Aim 1: Explore feasibility and acceptability of the EPIC intervention.

Hypothesis 1. Participants can feasibly complete the EPIC intervention (>80% of intervention components completed) and report high acceptability (*primary outcome*).

Aim 2: Determine the feasibility of a hybrid-type 1 effectiveness-implementation trial in older adults with COPD and their caregivers.

Hypothesis 2. It is feasible and not burdensome to recruit, randomize, retain, and survey older adults with COPD and their caregivers (*primary outcome*).

Exploratory Aim: Explore mean and variance estimates on Life-Space mobility by the UAB Life Space Assessment and other GeriPal outcomes to inform a fully-powered trial (*secondary outcome*).

9.2 SAMPLE SIZE DETERMINATION

As this is a feasibility study, sample size is justified based on the measurement precision of LSA parameters for a larger study. Using a sample size of 24 patients (48 participants including patients and caregivers) and 12 patients per study arms, we can estimate the 95% confidence interval of mean LSA with a margin of error of 14.3. This margin of error is equal to 0.567 standard deviation when we observe a reference standard deviation for the LSA of 25.2 from a general population of older adults. This sample size also includes an estimated 20% attrition rate from a sample of 30 dyads (or 60 patient and caregiver participants), which is consistent with palliative care trials.

9.3 POPULATIONS FOR ANALYSES

Led by the study statistician and PI, an intent-to-treat main analysis will use all available data from baseline onwards for patient and caregivers to examine effectiveness.

9.4 STATISTICAL ANALYSES

9.4.1 GENERAL APPROACH

Overall considerations. We will use an intention to treat approach for all analyses. That is, all participants will be included in their respective assigned conditions, regardless of their degree of participation in the study. Dr. Kim (Co-I; Statistician) and the data analyst will lead and conduct the analysis. The data analyst and project staff will perform data cleaning and validation throughout the study. Primary data analysis will begin with descriptive statistics for baseline characteristics and outcomes. We will examine balance between study groups with respect to baseline characteristics using effect sizes such as the standardized mean difference for numerical variables and Cramer's V for categorical variables. Conceptually relevant baseline factors showing non-trivial imbalances between groups will be then used as adjusting covariates in the longitudinal group comparisons. Distributional assumptions will be examined and, when appropriate, we will employ inferential and modeling

procedures robust to distributional assumptions such as normality. We will calculate and present means, variances, and ranges of the LSA and other secondary outcomes at baseline, 12 weeks, and 24 weeks. We will use the latest versions of SAS and R for all analyses and reports.

Handling of missing data. We will examine patterns of missing data, and whether baseline characteristics are associated with dropout. Conceptually relevant baseline factors predictive of dropout will then be used as adjusting covariates in the longitudinal group comparisons. Mixed-effect modeling techniques and covariate adjustment will reduce the impact of missing data, as the missingness is not assumed completely at random (MCAR) but conditionally (on the covariates) at random (i.e., MAR, a milder assumption).

9.4.2 ANALYSIS OF THE PRIMARY ENDPOINT(S)

We will summatively evaluate EPIC using the RE-AIM (Reach, Effectiveness, Adoption, Implementation, and Maintenance) evaluation framework.

Reach: We will use REDCap to track rates of screening, eligibility, enrollment, reasons for non-consent of eligible participants, and drop out.

"Effectiveness": We will measure several secondary GeriPal outcomes and will explore participant perspectives on the acceptability and impact of EPIC as well as barriers and facilitators to implementation. The PI will train the project coordinator to conduct post-intervention semi-structured in-depth interviews of patients and their caregivers by telephone using an interview protocol developed during our pilot trial. The separate patient and caregiver interviews will be audio-recorded and transcribed using Landmark Associates. The PI will review every five transcripts for quality assurance to review with the coordinator and for ongoing interview guide refinement. We will conduct a thematic analysis of transcripts using NVivo Software (Version 12, QSR International). Informed by a within- and across- case comparison approach, we will code the data using concepts introduced by participants. Emerging codes across cases will be operationally defined and entered into a formal codebook. Member checking will be ongoing as previous participant insights will be asked of future participants (e.g. "A number of participants have said X. What is your perspective on this issue?"). To corroborate findings and establish trustworthiness, the PI and co-investigators will examine the data collection and analysis monthly and provide critical feedback on the emerging codes. We will explore within and across coded texts to extract converging themes and reach consensus on themes.

Adoption: We will record completion of intervention components (CYC sessions, follow up call, advance directive, activities) in REDCap and tabulate intervention completion rates (# participants completing component). Consistent with our prior intervention development studies, ≥80% completion rates for intervention sessions will be considered as evidence of feasibility.

Implementation: Informed by our prior fidelity monitoring procedures, we will audio record all palliative care coach intervention sessions for fidelity monitoring and will quarterly review at least 50% of the recordings to ensure standardized intervention delivery and further training.

Maintenance: The thematic analysis will explore barriers to maintenance, and nurse coaches assess maintenance of practices at the follow-up calls.

9.4.3 ANALYSIS OF THE SECONDARY ENDPOINT(S)

The statistician and the data analyst will lead and conduct the analysis, and the data analyst will perform data cleaning and validation throughout the study. Descriptive statistics for baseline characteristics will be presented and compared between study arms using t-test and chi-square as appropriate. The secondary geriatrics-palliative care outcome measures will be summarized by tabulating and plotting descriptive statistics (means, ranges, and variances) at baseline and at six months. All analyses will be performed by using SAS 9.4, and statistical significance will be defined at $\alpha<0.05$.

9.4.4 SAFETY ANALYSES

N/A

9.4.5 BASELINE DESCRIPTIVE STATISTICS

Intervention groups will be compared on baseline characteristics (e.g., demographics, baseline questionnaire values) using descriptive statistics.

9.4.6 PLANNED INTERIM ANALYSES

N/A

9.4.7 SUB-GROUP ANALYSES

N/A

9.4.8 TABULATION OF INDIVIDUAL PARTICIPANT DATA

Individual participant data will not be listed by measure and time point.

9.4.9 EXPLORATORY ANALYSES

N/A

10 SUPPORTING DOCUMENTATION AND OPERATIONAL CONSIDERATIONS

10.1 REGULATORY, ETHICAL, AND STUDY OVERSIGHT CONSIDERATIONS

10.1.1 SCREENING AND RECRUITMENT

Given ongoing constraints of the COVID-19 pandemic, all attempts will be made to recruit and consent participants virtually to maintain patient and study staff safety. We have submitted a HIPAA waiver to screen the electronic medical record to identify potentially eligible patient participants. The PI, study coordinator, and study staff will daily screen potentially eligible patient participants from the list of patients who have a planned visit in pulmonary clinics in the next 1-2 weeks. These procedures have been used successfully in recruiting patients with COPD in prior UAB studies.

Prior to recruitment, the PI will reach out to individual UAB pulmonologists by email to describe the study, to discuss recruitment of their patients, and to allow them to opt-out of recruitment. The PI has ready access to the clinic lists of all patients seen in both pulmonary clinics as part of routine clinical care.

After gaining permission from the patient's attending pulmonologists via the above opt out email, the PI, study coordinator, and study staff will screen electronic medical records in the UAB IMPACT system to identify potential participants from their list of patients who meet the inclusion criteria and have a planned office visit at the pulmonary clinic in the next 1-2 weeks. The PI or study coordinator will send potentially eligible patient participants a study information and opt-out letter by mail (included in the appendix) with details about the study and consent forms to introduce the study and let them know that a member of the study team will be contacting them by phone to talk to them about the study. Individuals will be given a number to call if they do not wish to be contacted further for the study. The PI or study staff will call patients 5 business days after the opt out letter is sent to introduce, enroll, and consent them to the study.

At the time of the recruitment phone call, the PI or study coordinator will inform the patient about the study, answer any questions, and invite those interested and eligible to participate. Patient participants will be screened at this time for eligibility, and agreeable and eligible patient participants will complete consent. The study coordinator will confirm with the patient that they have a caregiver defined as, "a person who knows you [the patient] well and is involved in your medical care". The study coordinator will then ask permission from the patient to inform the caregiver about the study, and if agreeable, will screen the caregiver for eligibility criteria and perform consent in a similar fashion.

10.1.2 INFORMED CONSENT PROCESS

10.1.2.1 CONSENT PROCEDURES AND DOCUMENTATION

Given ongoing constraints of the COVID-19 pandemic, all attempts will be made to recruit and consent participant virtually over REDCap whenever possible to maintain patient and study staff safety. For patients and caregivers who are agreeable and meet eligibility criteria, the study coordinator will review the informed consent over the phone and explain all elements of the study, including: a statement that the study involves research; the research purpose; the expected duration of participant's participation; a description of the procedures; foreseeable risks and discomforts; description of benefits expected; efforts to maintain confidentiality; the PI's and UAB IRB's contact information; and a statement that participation is voluntary and that there is no penalty for non-participation. The informed consent will be electronically signed and dated by the participant and the project coordinator. A copy will be sent electronically to the participant to keep for his or her records.

The study coordinator who performs the consent discussion for this study will have appropriate education, expertise, and background to understand and relay the concepts in the study and answer questions. They will have documented protocol-specific training so they are familiar with the research project. Electronic consent will be obtained after the protocol has been fully explained and all questions have been answered. They will use the teach-back method of evaluating comprehension. Participants are asked to describe in their own words the key aspects of study participation.

10.1.3 STUDY DISCONTINUATION AND CLOSURE

This study may be temporarily suspended or prematurely terminated if there is sufficient reasonable cause. Written notification, documenting the reason for study suspension or termination, will be provided by the suspending or terminating party to study participants, investigator, funding agency, and regulatory authorities. If the study is prematurely terminated or suspended, the PI will promptly inform study participants, the Institutional Review Board (IRB), and sponsor/funding agency and will provide the reason(s) for the termination or suspension. Study participants will be contacted, as applicable, and be informed of changes to study procedures.

Circumstances that may warrant termination or suspension include, but are not limited to:

- Determination of unexpected, significant, or unacceptable risk to participants
- Insufficient compliance to protocol requirements
- Data that are not sufficiently complete and/or evaluable

The study may resume once concerns about safety, protocol compliance, and data quality are addressed, and satisfy the funding agency, sponsor, IRB, or other relevant regulatory or oversight bodies.

10.1.4 CONFIDENTIALITY AND PRIVACY

Participant confidentiality and privacy is strictly held in trust by the PI and study team. This confidentiality is extended to the data being collected as part of this study. Data that could be used to identify a specific

study participant will be held in strict confidence within the research team. No personally-identifiable information from the study will be released to any unauthorized third party without prior written approval of the sponsor/funding agency.

All research activities will be conducted in as private a setting as possible.

The study participant's contact information will be securely stored with the firewalled, password-protected firewall of UAB for internal use during the study. At the end of the study, all records will continue to be kept in a secure location for as long a period as dictated by the reviewing IRB, Institutional policies, or sponsor/funding agency requirements.

Study participant research data, which is for purposes of statistical analysis and scientific reporting, will be stored at the UAB School of Nursing. This will not include the participant's contact or identifying information. Rather, individual participants and their research data will be identified by a unique study identification number. The study data entry and study management systems used research staff will be secured and password protected. At the end of the study, all study databases will be de-identified and archived at the UAB School of Nursing.

10.1.5 FUTURE USE OF STORED SPECIMENS AND DATA

Data collected for this study will be analyzed and stored at the UAB School of Nursing. We are not collecting any specimens in this study.

10.1.6 KEY ROLES AND STUDY GOVERNANCE

The organizational structure summarized below is appropriate for early start-up and implementation phase of the trial and may change over time. The primary decision-making body is the **Oversight Committee**, chaired by the PI and comprised by the co-investigative team, lead statistician, and study coordinator. The oversight committee will convene biannually to review progress on all study processes, timeline, and milestones and high level scientific and administrative issues. This committee will also oversee publications.

A **Project Management Subcommittee**, comprised of the PI, project manager, recruitment and data collection staff, and other study staff will meet weekly to address day-to-day operational issues and to set short term priorities.

A **Nurse Coach Subcommittee** comprised of the PI, nurse coaches, and other clinical co-investigators will meet weekly to debrief on intervention sessions.

As PI, **Dr. Iyer** is responsible for all aspects of study execution. **Dr. Wells**, assisted by **Dr. Iyer,** will train and monitor the nurse coaches' fidelity to the intervention treatment protocol. **Dr. Kim** will oversee design and implementation of the REDCap data collection procedures and analysis. **Dr. Bakitas** and **Dr. Dionne-Odom** will provide regular advisory consultation to the PI on all palliative care clinical trial study procedures. **Dr. Dransfield** and **Dr. Brown** will oversee clinical trial implementation and help to resolve barriers.

Once caregivers and patients are consented, the study coordinator (**Ms. Coffee-Dunning)** will use the REDCap computer generated randomization schema to randomize to the intervention and usual care conditions. **Ms. Coffee-Dunning** will notify the data collector who is blinded to group to collect data as needed. **Ms. Coffee-Dunning** will also notify the **nurse coaches** who will contact participants by phone and follow up with a letter describing the study activities for their assigned condition.

10.1.7 SAFETY OVERSIGHT

This project will involve enrolling 30 older adults with COPD and 30 caregivers into a pilot randomized controlled trial. After signing consent, participants will complete a baseline surveys. Dyads randomized to the intervention arm will engage in the EPIC intervention delivered over telephone by trained palliative care nurse coaches. The interventions and assessments are not invasive and do not involve pharmacological agents. The informed consent process, the recruitment process, and the timeliness and quality of the data will be monitored by the principal investigator, the Institutional Review Board, and a Safety Officer (SO).

The SO will provide safety oversight and be composed of individuals with the appropriate expertise, including oncology, medicine, nursing, and clinical trials. The SO will be independent from the study conduct and free of conflict of interest. The SO will review quarterly safety reports from the PI to assess safety. The SO will provide its input to the IRB.

The SO has an established procedure of operation and guidelines for determining the methods and frequency for study review. Below is the table that guides the risk assessment for this study. Based on our SO established guidelines, the proposed study's score of five on the 10-point scoring system indicates that the principal monitor for the study will be the PI (Dr. Iyer), and he will present the SO with a summary of the accumulated data and safety information during an annual review for each year of the study.

Tasks related to patient safety will include Dr. Iyer's assessment of potential risks associated with study recruitment and participation, as well as the design and implementation of procedures to minimize these risks should they arise. Additionally, Dr. Iyer and the Co-Investigators will implement a system to document adverse events should they occur. The IRB Institutional Review Board currently has procedures in place for reporting adverse events and those protocols will be followed for the current study. This risk monitoring will be reviewed on a regular basis and will be modified as needed.

The primary risks of study participation are a loss of confidentiality and the discomfort associated with discussing aspects of one's experience coping with advanced cancer. To address these concerns, Dr. Iyer will train all project staff to recognize signs of distress and to be supportive and/or make alternative plans for completing study-related tasks at a later date, if necessary. If a participant exhibits suicidal ideation at any point, Dr. Iyer and other key clinical members of the study team will be contacted immediately to implement a crisis intervention plan (see **Section 12.2** for Emotional Distress/Suicide Protocol).

Plans to Monitor Trial Performance (e.g., assure fidelity to protocol and integrity of data)
Dr. Iyer and Dr. Wells have developed and utilized structured processes for ensuring fidelity in study protocols including: 1) core training and study-specific refresher course in standardized interviewing that includes role-playing and supervision; 2) weekly team meetings to troubleshoot recruitment and data collection issues; and, 3) use of data entry software that provides entry validation range tests and is designed to minimize missing data by flagging missed items before surveys are submitted.

A data analyst study team member will manually extract data from the medical record regarding patient participants' clinical characteristics of stage, treatment, and co-morbidities. To ensure accuracy, the analyst will audit a random 10% of the medical records to verify the accuracy of the abstracted

information. The study coordinator will maintain and monitor the database regularly throughout the study. The database is password-protected and sits behind the firewall of UAB.

Interim Analyses and Stopping Rules

Early Termination for Significant Risk or Injury. - This is unlikely due to the supportive, non-invasive nature of the intervention. However, we will summarize adverse event data annually to the SO for consideration of study continuation. The study design does not include planned interim analyses to identify the need to stop early due to significant benefit, i.e., inferential analyses will be conducted when data collection has been completed. However, primary outcome data will be summarized quarterly and presented to the SO to decide if an interim inferential analysis is warranted to determine whether the study should be terminated early due to relevant benefit.

Table 1. Study Risk Assessment *				**SCORE**
I. Experimental Treatment				
Low Risk	No experimental treatment in the study	1 point		
Moderate Risk	Treatment effects documented from studies with similar and/or different populations and/or settings. No serious adverse events expected. Specific plans to monitor AE's detailed in DSM plan.	2 points		2
High Risk	The experimental treatment is being regulated by the FDA (e.g., an investigational drug, device, or biologic)	4 points		
II. Procedures, Measurement, and Data Collection Methods				
Low Risk	Minimally invasive with a low degree of emotional and/or physical discomfort. The probability of adverse events is low. Severity (magnitude) of adverse events is low. (Procedure may be rated as low if the probability of AE is moderate to high as long as the severity is low, as in the case of a bruise from phlebotomy.) Procedures that meet IRB criteria for expedited review are commonly rated as low.	1 point		
Moderate Risk	A moderate degree of emotional and/or physical discomfort. The probability of adverse events is low. The severity of adverse events is moderate to high (e.g., PET scan, lumbar puncture, arterial line insertion).	2 points		2
III. Decision-Making Capability				
Non-vulnerable	Adult who (1) demonstrates decision-making capacity and (2) demonstrates no perception of undue influence or coercion.	1 point	Non-vulnerable population	1
Vulnerable	Any minor. Adult who (1) demonstrates limitations in decision-making capacity and/or (2) is prone to the perception of undue influence or coercion to participate	2 points		
Total				5

10.1.8 CLINICAL MONITORING

Clinical monitoring will be conducted to ensure that the rights and well-being of trial participants are protected, that the reported trial data are accurate, complete, and verifiable, and that the conduct of the trial is in compliance with the currently approved protocol/amendment(s), with International Council on Harmonisation Good Clinical Practice (ICH GCP), and with applicable regulatory requirement(s).

10.1.9 QUALITY ASSURANCE AND QUALITY CONTROL

Overseen by the PI, study staff will perform internal quality management of study conduct, data collection, documentation and completion on at least a quarterly basis.

Quality control (QC) procedures will be implemented as follows:

Informed consent --- Study staff will review both the documentation of the consenting process as well as a percentage of the completed consent documents. This review will evaluate compliance with GCP, accuracy, and completeness. Feedback will be provided to the study team to ensure proper consenting procedures are followed.

Source documents and the electronic data --- All data will be entered into the REDCap study database. To ensure accuracy, staff will review data entered into the database for completeness.

Intervention Fidelity — Consistent delivery of the study interventions will be monitored throughout the intervention phase of the study. Procedures for ensuring fidelity of intervention delivery are described in **Section 6.2.1, Interventionist Training and Tracking**.

Protocol Deviations – The study team will review protocol deviations on an ongoing basis and will implement corrective actions when the quantity or nature of deviations are deemed to be at a level of concern.

Should independent monitoring become necessary, the PI will provide direct access to all trial related sites, source data/documents, and reports for the purpose of monitoring and auditing by the sponsor/funding agency, and inspection by local and regulatory authorities.

10.1.10 DATA HANDLING AND RECORD KEEPING

10.1.10.1 DATA COLLECTION AND MANAGEMENT RESPONSIBILITIES

Data collection will be the responsibility of the study staff under the supervision of the PI. The PI will be ultimately responsible for ensuring the accuracy, completeness, legibility, and timeliness of the data reported. Sources of materials to be collected include all measures listed in 1.4 Schedule of Activities. Study materials will also include digital recordings of the intervention sessions (for fidelity monitoring) and post-intervention feedback interviews with transcripts. All materials will be used specifically for the purposes outlined in this proposal and not for any other purpose.

All data collected during the study will be de-identified. Participants will be informed that all responses will be kept confidential. Data will be linked to participants' names only by means of an assigned study identification number. Authorized study staff are the only individuals who will have access to participants' identification numbers and personal information. This information will be stored in a password protected database on the secure UAB School of Nursing server as well as in hard copy format in a locked file cabinet in a locked office that is only accessible to the study PI and relevant study staff. All necessary precautions will be taken to ensure that there is no breach of confidentiality.

Participants' completed self-report measures will be saved in a password protected file (electronic format) or stored in a locked file cabinet in a locked office (hard copy format) accessible only to the PI and relevant study staff. Study staff will double-key enter de-identified questionnaire responses into the encrypted, password protected (front and back end) REDCap electronic database (Research Electronic Data CAPture). REDCap is software for building and managing questionnaires and facilitating electronic data collection and storage. It supports a HIPAA best practice, secure web-based application. Hard stops prevent missing data due to inadvertent skipping of items. This database will be accessed on a secure network server that is password protected. Descriptive statistics will be used to conduct quality control on the preliminary datasets and identify missing/extreme data values. Study staff who have received intensive training (typically 10 hours including role play and inter-rater reliability checks) will assure high quality data collection from participants. The PI will follow-up and resolve any data queries resulting from the quality control process. Care will be taken to ensure that the collected data are as complete as possible, and patterns and impact of missing data will be examined. If appropriate, statistical techniques to handle missing data such as multiple imputations will be employed.

Digital recordings of sessions will be labeled with participants' study identification number and stored in a locked file cabinet in a locked office accessible only to the PI and relevant study staff.

All personnel involved in the proposed protocol will be CITI certified, educated regarding HIPAA regulations, and will fully understand their responsibility to safeguard the personal health information of every participant involved in the research.

10.1.10.2 STUDY RECORDS RETENTION

Study documents will be retained for a minimum of 3 years after the completion of the data analysis period. These documents may be retained for a longer period, however, if required by IRB or other UAB regulatory authorities (e.g., UAB Comprehensive Cancer Center).

10.1.11 PROTOCOL DEVIATIONS

This protocol defines a protocol deviation as any noncompliance with the clinical trial protocol, International Council on Harmonisation Good Clinical Practice (ICH GCP), or Manual of Procedures (MOP) requirements. The noncompliance may be either on the part of the participant, the investigator, or the study site staff. As a result of deviations, corrective actions will be developed by the PI and study team and implemented promptly.

10.1.12 PUBLICATION AND DATA SHARING POLICY

This study will comply with the NIH Data Sharing Policy and Policy on the Dissemination of NIH-Funded Clinical Trial Information and the Clinical Trials Registration and Results Information Submission rule. As such, this trial is registered at ClinicalTrials.gov (NCT05040386), and results information from this trial will be submitted to ClinicalTrials.gov. In addition, every attempt will be made to publish results in peer-reviewed journals.

10.1.13 CONFLICT OF INTEREST POLICY

The independence of this study from any actual or perceived influence is critical. Therefore, any actual conflict of interest of persons who have a role in the design, conduct, analysis, publication, or any aspect of this trial will be disclosed and managed. Furthermore, persons who have a perceived conflict of interest will be required to have such conflicts managed in a way that is appropriate to their participation in the design and conduct of this trial.

10.2 ADDITIONAL CONSIDERATIONS

N/A

10.3 ABBREVIATIONS AND SPECIAL TERMS

COPD = chronic obstructive pulmonary disease
GeriPal = geriatrics-palliative care
FEV_1 = forced expiratory volume in 1 second
RCT = randomized controlled trial
ENABLE = Educate Nurture Advise Before Life Ends
EPIC = Empowering Independence with COPD
LSA = UAB Life Space Assessment
CRQ = Chronic Respiratory Questionnaire
HADS = Hospital Anxiety and Depression Scale
mTICS = Modified Telephone Interview for Cognitive Status
ADL = activities of daily living
IADL = instrumental activities of daily living
CCM = chronic care model
SOC = selection-optimization-compensation
RE-AIM = Reach, Effectiveness, Adoption, Implementation, and Maintenance
CYC = Charting Your Course