St. Jude's-Stanford Comprehensive Support Initiative

Study Protocol and Statistical Analysis Plan

NCT03154190

May 18, 2016

Health Coach Study

at

St. Jude Crosson Cancer Institute

Coordinating Center
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Version Date (5-18-2016)

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1.0 SPECIFIC STUDY AIMS

Aims

The primary aim is to reduce acute care utilization and cost for advanced cancer patients by training and deploying health care coaches who help patients and families discuss care goals, virtual modalities, engage in shared-decision-making, and participate in educational activities.

The secondary aims are to improve patients' experience of their care including overall health and emotional and mental health status, improve patient satisfaction with care and decision-making and advance care planning.

Hypothesis

Compared to patients who receive usual advanced cancer care, patients who partner with lay health care coaches are hypothesized to experience lower rates of acute care utilization, lower numbers of emergency room visits and hospital stays within 6-months post-enrollment. Secondarily, we will explore the effect of the intervention on satisfaction with care, overall health and emotional and mental health status, from time to enrollment to 6 months post-enrollment, advance care planning documentation, and acute care use at 12-months post-enrollment and within 30 days prior to death among those who died during the 12-month follow-up period.

2.0 BACKGROUND AND RATIONALE

Advanced cancer is an incurable condition, the second leading cause of death in the United States, and incidence rates are expected to increase and costs are expected to double over the next seven years. Many patients and families currently describe a poor quality of life with difficult decisions, little understanding of the disease context, unnecessary pain and suffering, and treatment options that are often provided far from their residence. Care delivery is often fragmented with poor care coordination and lack of resource utilization closer to patient and family needs.

Often quality of life, especially at the end of life, is improved when care is coordinated, components of proactive health and well-being are adopted and elements of patient-centered care help establish the Goals of Care Plan with appropriate documentation, and when special attention is provided to allowing care delivery to be received closer to patient's neighborhood. We recognize that in any situation, goals of care may change with the delivery of care for patients with advanced cancer; however, establishing improved care coordination, care goals that provide guidance and reassurance and develop with the patient and his/her support network, and providing care in a patient-centered approach can result in significant improvements in patient experience and may ultimately help to contain health care spending.

The key elements address three major challenges: 1) patients with cancer and their families face confusing choices and difficult decisions and 2) Patients at the end of life may suffer pain or uncontrolled symptoms along with poor care coordination associated with their cancer diagnoses.

The proposed patient-centered care program addresses these three critical care elements by training and deploying health care coaches who help patients and families discuss goals for life virtual modalities, engage in shared-decision-making, and participate in educational activities.

Cancer related symptom management is addressed through the establishment of a nurse-supervised protocol-driven proactive symptom relief for patients with cancer. The desired outcomes include: 1) Identify and engage patients with advanced or newly diagnosed cancer, and to include their family members and support network in decisions about their health care plans; 2) Ensure patients and families understand prognosis and document goals for life, and link patients to health care coaches to make optimal life decisions 3) Implement established protocols and operations to improve timely symptom control and oncology care coordination.

3.0 STUDY ENROLLMENT AND PARTICIPANT ELIGIBILITY

3.1 Study Enrollment

Location

Patients will be recruited from the oncology clinics at St. Jude Hospital in Fullerton, CA.

Enrollment Procedures

Each week, the site PI and study staff will receive a list of potential patients. After the site PI and study staff conduct proper screening (see below section titled "Screening Procedures" for specific details), the staff will create a list of eligible patients and their primary oncology appointment times. At the patient's oncology appointment, the oncologist will present the study and initiate the consent procedure (see below section titled "Consent Procedures" for specific consent details).

Screening Procedures

The Site PI and staff will utilize the following documents and procedures to screen for patients who fit the inclusion criteria listed in 3.2

- Diagnosis (ICD-9) codes
- Provider Referrals (request for oncology consultation)
- Pathology results (must be positive for malignancy)
- Biopsy requests
- Abnormal test results (mammograms, colonoscopies, imaging results)

Screen failures will not be included in the study data. The PI will keep a record of history and reasons for screen failures; however, any patient information gathered during this process will be destroyed.

Consent Procedures

The oncologist will refer eligible patients to the program. The program manager or the primary oncologist will introduce will obtain consent from eligible patients at the patient's primary oncology appointment following advanced cancer diagnosis. The program manager or the oncologist will introduce the research project and provide a consent form document describing the project with sufficient information to potential participants. Patients will be provided adequate time to make an informed decision regarding their participation. Participants must sign an IRB approved informed consent document prior to participation in any study specific procedure. The participant will receive a copy of the signed and dated consent form document. The original signed informed consent document will be retained in the research file. Patients who refuse participation or have no capacity for decision-making will not be included in the study.

If a patient consents, patients will be provided a welcome letter with basic information and contact phone numbers for the project.

For all patients assigned to the health care coach, the program manager will provide the coach with the patient's phone number and the coach will contact the patient by phone to begin the intervention procedures that include: assisting patients with their goals of care, documenting goals of care, and assisting with symptom assessment. The intervention will be provided in addition to the usual care processes.

3.2 Participant Criteria

Inclusion criteria

1. Newly diagnosed patients for the following conditions.

- Colon cancer stage III and IV
- Rectal cancer stage II, III, IV
- Glioblastoma multiforme (brain) -- no stage
- Non-small cell lung cancer stage IIIA, IIIB, IV
- Small cell lung cancer, limited stage and extensive stage
- Castration-resistant prostate cancer
- Head and neck cancer stage III and IV
- Gastric cancer stage III and IV
- Esophageal cancer stage III and IV
- Pancreatic cancer stage II,III, IV
- Renal cell carcinoma, stage IV
- Breast cancer, stage IV, if triple negative ER/PR/H2N negative or on systemic chemotherapy
- Sarcoma, stage IV
- Bladder carcinoma, stage IV
- Acute myeloid leukemia
- Melanoma, stage III and IV
- Ovarian cancer, stage III and IV
- High Grade MDS

Eligibility also includes patients with recurrent cancer of any diagnosis.

2. The patients must be 18 years or older.

3. Patients must have the ability to understand and willingness to sign a written informed consent document.

4. Patient must have ongoing oncologic needs and plan to receive all care at the study institution and not already be in hospice or home-care.

Exclusion Criteria

The disease must be *newly* diagnosed or patients with recurrent disease of any cancer diagnosis. Patients must not already receive hospice services and palliative care.

Criteria for Removal from Study

Any patients or families of patients in the intervention arm who withdraw consent will be removed from the study. Upon removal, usual care will be restored for these patients.

3.3 Enrollment

The target number of subjects at the site is 128. Patient enrollment is anticipated to begin upon study approval and continue until 128 participants have enrolled.

4.0 MATERIALS AND METHODS

After a patient consents, the patient will be registered and entered into the project database and assigned an identification number. The subject's identification number will be used on all subject-specific documents and research-related forms.

During registration, patients will be randomized to two arms (Arm A: Usual Care Arm B: Health Care Coach Intervention). Specifically, the patients will be randomized into two arms by cancer type.

All patients will be surveyed over the course of the study regarding patient experience with care, patient satisfaction and overall health status and emotional and mental health status (using the CG-CAHPS: Clinician and Group Consumer Assessment of Healthcare Providers and Systems), advanced care planning, and symptom assessments (using the ESAS: Edmonton Symptom Assessment Scale) and healthcare use. A member of the project team, excluding the Health Care Coach, will administer the assessments and conduct an electronic health record review of all health care use at baseline, 3, 6, 9 and 12 months post-enrollment. Participants will provide consent for health record review at external facilities by signing a health release authorization form at each of the outcome assessment time periods. The symptom assessments will be administered at baseline for each patient in the intervention and control. Participant information should be entered into the local databases within 7 calendar days.

- Arm A: Usual Care (Control) / No Intervention
  Patients in this arm receive "usual" care from their care team.

- Arm B: Health Care Coach Arm / Intervention Group
  The intervention will be comprised of a health care coach assignment with a baseline introduction (either telephonic or in-person) of the program followed by a visit (telephonic or in-person) with the health care coach within 1 week after the first oncology appointment or after a patient has recurrent disease to discuss goals of care. The health care coach is trained in engaging patients and families in goals discussion and in symptom management algorithms. The health care coach will use standardized educational information to inform contacts with the patient including PREPARE for your care and other educational content as determined by the study team. The health care coach will contact patient based on patients' ongoing needs (i.e. weekly to monthly) and will conduct symptom assessments based on patients' treatment plans and symptoms for 6-months post-enrollment. All symptoms that are scored 4 or above and/or change by 2 points from a prior assessment will be reviewed with the supervising nurse who will conduct standard usual care processes as determined by the facility. Health care coach will also conduct meetings with patient's family and caregivers at the same time intervals as needed and upon request. All health care coach interactions will be logged and will include date of the interaction, details of the interaction, and the duration of the interaction.

Choosing the Health Coach:
Possible health coaches are identified by Dr. Park, the site PI. Candidate health coaches are educated fully about the project and the workflow. Health coaches who are interested in engaging in this study are appointed. Health coaches do not need to have a clinical background to engage in this study.

Training the Health Coach:

The oncology care team of a triage RN, APN/PA, or PI will train the health care coaches and provide standardized training manuals. The manuals include a highly detailed workflow of the project, from enrollment to completion. Coaches will learn about what to say during patient contact, advanced care planning conversations, the administration of various psychosocial questionnaires, the study calendar, data management, and key contact information.

Supervising the Health Coach:
The health care coach will be supervised by the triage RN or APN/PA who provides oncology treatment support and also training. The triage RN or APN/PA will ensure that the protocol is carried out correctly and address any issues that may arise in the health care coach's workflow. The health care coach will participate in weekly meetings with the health coach in addition to daily supervision and will participate in monthly meetings with the rest of the project members (at both Stanford and St. Jude) to review study accrual and program goals. At these meetings, the health care coach will be responsible for providing a report on project progress and project issues.

Psychometric Measures
1. The Consumer Clinician and Group Consumer Assessment of Healthcare Providers and Systems (CG-CAHPS) will be used to assess patient satisfaction, overall health status, and overall emotional and mental health status. Information about the measure can be found here: https://cahps.ahrq.gov/Surveys-Guidance/CG/index.html

2. The Edmonton Symptom Assessment Scale (ESAS) will be used to measure the presence and degree of pain symptoms. The ESAS will be administered to the control group (at 0 months of diagnosis) and intervention group (every 2 weeks). The health care coach will embed the ESAS results for the control and intervention groups into Allscripts and alert the patient's provider that the results are available and if an issue exists.

Dr. Patel has used both of these measures with success before with a similar project completed at the Palo Alto Veterans Hospital (Palo Alto, CA). Information about this measure can be found here: http://www.npcrc.org/files/news/edmonton_symptom_assessment_scale.pdf

If patients feel discomfort while conducting their surveys they may choose to not complete them. If there are any psychological events that occur during the study, these will be reported to the NPOD and MOD via the site PI.

Site PI: Dr. Park
Dr. Park is responsible for site study supervision as well as the following: conducting biweekly meetings with all study members, troubleshooting recruitment and follow-up challenges, training the health care coaches, ensuring proper data collection, and general upkeep. The site PI is also responsible for interacting with the protocol director at Stanford, Dr. Patel. As this is Dr. Patel's conception, and she piloted at another site, she will be able to provide Dr. Park with specific advice and recommendations should challenges arise.

Protocol Director: Dr. Patel
Dr. Patel is responsible for the overall study, submitting IRB and protocol amendments, corresponding with the site PI to help him troubleshoot any challenges in data collection or follow-up. Dr. Patel is also responsible for overseeing data analysis and manuscript publication.

5.0 STATISTICAL CONSIDERATIONS

Biostatistician: Manisha Desai PhD and Kris Kapphahn (Stanford University)

5.1 Outcome Measurements

None of the listed outcomes relate to safety:

Primary Outcome Measure

The specific key measurement used to measure the effect of the intervention corresponding to the primary outcome is acute care utilization. Utilization will be measured evaluating comparisons of hospitalizations, emergency department visits, referrals to hospice and palliative care, time to first contact with care coach, duration of care coach contacts, frequency of care coach contacts, and symptom assessment changes throughout the study and time to intervention. Electronic health record review at the facility, review of health records at external facilities, and patient-report will be utilized to assess dates and utilization of all acute care use, hospice and palliative care use at each of the specified assessment time periods.

Secondary Outcome Measures

The specific key measurements corresponding to the secondary objective are several patient-reported outcome tools:

Satisfaction with Care and decision making and overall health and emotional and mental health status: CAPHS-G will be used to assess satisfaction with care, overall health status, and overall emotional and mental health status among patients at each of the specified time periods after enrollment. A 6 question satisfaction with decision making scale will also be administered at these time points.

Qualitative data regarding implementation will be assessed through 2 focus groups during the study. This may include patients, caregivers, providers, and staff at the site of implementation. PI and study team from Stanford will provide oversight on analysis and data collection.

5.2 Analysis Plan (see Detailed Statistical Analysis Plan Attached)

All patients will be included in the analysis based on their randomization assignment at time of enrollment. The unit analysis will be completed at the participant-level. We will conduct descriptive statistics to evaluate balance between demographic (i.e., sex, age, race/ethnicity) and clinical variables (i.e., stage of cancer, diagnosis of cancer) between both the randomized and control groups. To assess our primary outcome of the effect of the intervention on acute care use within 6-months post-enrollment we will assess % of patients with acute care use. We will create a (composite measure for acute care use that includes both ED visits and hospitalizations. To compare risk of acute care use (composite measure) and individual ED and hospital use within 6 months post-enrollment, we will use Cox regression models. We will also compare counts of total ED visits and hospitalization (composite measure of acute care use) within the first 6 months, using General Estimating Equation with Poisson family, log link, and independent correlation.

For secondary outcomes of ED and hospital use within 12 months, we will compare use using GEE models. We will compare counts of total ED visits and hospitalization (composite measure of acute care use) within 12 months, using General Estimating Equation (Poisson) with an offset term for length of follow-up. To compare goals of care discussion and documentation, Advance Directive

documentation, Physician Order for Life Sustaining Treatment documentation, Chemotherapy, Radiation, Surgery, hospice, and palliative care within 12 months, we will use GEE models to compare odds of documentation or use across groups. For end-of-life health care use, we, we will compare any ED use and hospital use prior to death (30 days prior) and proportion of participants with palliative care and hospice use using the models described above among participants who died during the 12-month study.

For secondary outcomes, we will assess change in patient-reported outcome scores from baseline (at time of enrollment) to 6-months (post-enrollment). For satisfaction variables with responses "never", "sometimes," "usually," or "always" we will report results as the proportion of participants who respond "always" at 6-months post-enrollment compared to all other responses. For satisfaction variables with responses, "strongly disagree," "disagree," "neither agree nor disagree," "agree," or "strongly agree, we will report results as the proportion of participants who respond, "strongly agree." For overall health and overall mental and emotional health variables, responses are scores that range from 0 to 5, with lower scores indicating "very good" or "excellent" health and higher scores indicate poorer overall health. We will report results as the proportion of participants who respond, "very good" or "excellent." Missing data will not be imputed in any case. We will utilize GEE to compare changes between groups overtime from baseline (time of enrollment) to 6-months post-enrollment using GEE models with a term for an interaction between the treatment group and time (month) and clustered within person.

We will compare survival using Kaplan Meier methods and the risk of death for both groups after randomization using Cox proportional hazards regression models. All analyses will be adjusted for covariates that are found to be imbalanced between study groups, such as age, race/ethnicity, cancer stage and cancer diagnosis.

Relevant subsets of the above metrics may be measured on patients by cancer diagnosis and stage.

Sample Size Considerations

The sample size of 128 participants (64 randomized to the intervention group and 64 randomized to the control group) provides greater than 90% power to detect a 55% or greater difference in acute care use risk at 6-months follow-up. The anticipated effect size was based on our prior studies [11, 13, 18] and feedback by the oncology clinicians at St. Jude's Crosson Cancer Institute. Power calculations will not be generated for our secondary outcomes as these are considered exploratory. Statistical significance of secondary outcomes is for trends only and not represented in this sample size calculation.

Interim analyses every 6 months will evaluate point estimates and trends to inform refinements to the protocol. Descriptive statistics and exploratory data analyses will be conducted as needed to evaluate protocol process measures with key outcomes identified.

5.3 Sample Size

The goal is to reduce acute care use. Based on data from St. Jude Hospital, the mean number of acute care visits per member per year is 1.45. Local site oncologist in the pre-review assessment anticipated at least a 55% difference in risk of acute care use among participants in the intervention group as compared to the control group. For this trial, we estimated that a sample size of 128 participants would have at least 90% power with a 2-sided type I error rate of 0.05 to detect at least a

55% difference in risk of acute care use in the intervention group compared with the control group based on effect sizes from our ongoing VA pilot and other pilot studies. For this trial, we expect to obtain point estimates with an understanding that we may not reach significance in this study.

6.0 DATA MANAGEMENT CONSIDERATIONS

6.1 Data Management

The Protocol Director and participating site investigators will maintain adequate and accurate participant case histories with observations and other data pertinent to the study. Original source documents will be transcribed to data collection tools and used to communicate study data to the lead site.

Participating site PI will be responsible for maintaining the clinical protocol and subjects' study charts, reporting adverse events, assuring that written, informed consent is obtained and documented, and reporting the status of the trial in continuing renewals submitted to their IRB and trial monitoring group(s) as per their facility protocol.

6.3 Confidentiality

Members of the local team will be responsible for database records of patient data. The data will be kept in the central online database, under password protection with access limited to specific areas of the database. A chart with all of the relevant research patient information will be maintained for each patient at each institution by the local team for that specific institution. Stanford PI and Study Coordinator may review patient charts for yearly audits.

6.4 Protocol Review and Amendments

The protocol, the proposed informed consent and all forms of participant information related to the study (e.g. advertisements used to recruit participants) will be reviewed and approved by the Stanford IRB and Stanford Cancer Center Scientific Review Committee (SRC). Any changes made to the protocol will be submitted as a modification and will be approved by the IRB prior to implementation. The Protocol Director will disseminate the protocol amendment information to all participating investigators."

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APPENDIX A: PARTICIPANT ELIGIBILITY CHECKLIST

A Participant Eligibility Checklist is completed and signed by an Investigator prior to obtaining signed informed consent. The eligibility checklist is filed in the subject's research chart.

Existing medical information in the patient's medical record will be used as supporting documentation of eligibility.

Protocol Title:	**Pilot Test Health Care Coach Program**
Protocol Number:	**35626**
Principal Investigator:	**Manali Patel MD MPH**

II. Subject Information:

Subject Name/ID:
Gender: ☐ Male ☐ Female

III. Study Information:

SRC Approved ☐ *IRB Approved* ☐ *Contract signed* ☐

IV. Inclusion/Exclusion Criteria

Inclusion Criteria (From IRB approved protocol)	**Yes**	**No**	**Supporting Documentation***
1. Patient has been newly diagnosed with cancer, except non-melanoma skin cancer, non-metatastic thyroid cancer, and prostate cancer not requiring Medical Oncology as described above in the protocol with stages of disease as outlined in protocol.	☐	☐	
2. Patient is age 18 or older	☐	☐	
3. Patient will receive all future care at local site	☐	☐	
4. Ability to consent	☐	☐	
Exclusion Criteria (From IRB approved protocol)			
1. Inability to consent	☐	☐	
2. Cancer diagnosis does not require Medical Oncology	☐	☐	
3. Patient is pregnant	☐	☐	

4. Patient is already receiving home care or palliative care	☐	☐	
5. Patient is younger than 18 years	☐	☐	
6. Patient will not receive subsequent care at local site	☐	☐	

*****All subject files must include supporting documentation to confirm subject eligibility. The method of confirmation can include, but is not limited to, laboratory test results, radiology test results, subject self-report, and medical record review.

IV. Statement of Eligibility

By signing this form of this trial I verify that this subject is [☐ **eligible** / ☐ **ineligible**] for participation in the study. This study is approved by the Stanford Cancer Institute Scientific Review Committee, the Stanford IRB, and has finalized financial and contractual agreements as required by Stanford School of Medicine's Research Management Group.

Treating Physician Signature:	Date:
Printed Name:	

Secondary Reviewer Signature:	Date:
Printed Name:	

Study Coordinator Signature:	Date:
Printed Name:	