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Protocol Form for Non-Exempt Research

Title: EVINCE (Educational Video to Improve Nursing home Care in End-stage dementia)

ClinicalTrials.org NCT01774799

December 21, 2015

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Complete each question. If a question is not applicable, put N/A in the shaded text box.

1. GENERAL INFORMATION

☐ **Initial Submission**

x☒ **Revised; HSL Protocol #:** 12-013

Version Number & Date	**Version #:**16 **Date:** December 21, 2015
Principal Investigator	Susan L Mitchell/Angelo Volandes (co-PIs)
Protocol Title	EVINCE (Educational Video to Improve Nursing home Care in End-stage dementia)
Sponsor/Funding	NIH

2. BACKGROUND

2.1 Background and rationale for research based on existing literature:

Alzheimer's disease afflicts over 5 million Americans and is the 6th leading cause of death in the U.S. To date, advanced dementia research has largely focused on describing the end-of-life experience of patients with this disease. Designing and testing interventions targeting those opportunities is the current research priority for this field. Advance care planning (ACP) is the most consistent modifiable factor associated with better palliative care outcomes in advanced dementia.

The opportunity for ACP is exceptional in advanced dementia but often inadequate. Thus, advanced dementia patients often get aggressive interventions that may be inconsistent with preferences and of little clinical benefit. Recent work has particularly underscored the need to avoid unwanted and unnecessary hospitalizations among these patients. Traditional ACP primarily relies on ad hoc verbal descriptions of hypothetical health states and treatments. This approach is limited because complex scenarios are difficult to envision, information from providers is inconsistent, and verbal explanations are hindered by literacy and language barriers.

To address these shortcomings, the co-PIs have developed video decision support tools for ACP and shown their efficacy in several randomized controlled trials (RCTs) in out-patient settings. The over-riding goal of the EVINCE (Educational Video to Improve Nursing home Care in End-stage dementia) study is to conduct a cluster RCT of an ACP intervention vs. control among 360-400 nursing home (NH) residents with advanced dementia (N=180-200/arm) in up to -70 matched NHs (up to 35 intervention/up to 35 control.

2.2 Previous (non-clinical, pre-clinical or clinical) **studies leading up to and supporting the proposed research:**

The literature clearly demonstrates the opportunity to improve advanced dementia care

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through better ACP. Early research suggests that a video support tool presents a practical, promising approach to address that opportunity. Only two rigorous RCTs of interventions have been reported in the field of advanced dementia, both of which evaluated and showed the benefits of decision support tools. One of these RCTs, conducted by the co-PIs, randomized community dwelling healthy elderly subjects to either watch a video depicting a patient with advanced dementia or to listen to a verbal narrative describing this condition. When then asked to imagine they had advanced dementia, subjects in the video arm were more likely to choose comfort as their preferred level of care. This early work is promising, but also has several limitations. First, an ACP video tool has not been tested in proxies of actual patients with advanced dementia. Second, it is not known whether these tools impact the clinical care (e.g., ACP, treatments). Third, the effect of the video over time has not been well-examined. The proposed RCT will address these limitations, and is the next logical step towards understanding the real world application of a video ACP support tool for advanced dementia.

2.3 Describe why this research is important and how it will contribute to existing knowledge:

Better ACP is a key opportunity to improve advanced dementia care. Video decision support is a practical, evidence-based, and innovative approach to ACP. If this RCT is successful, this will be one of the first rigorously tested interventions shown to improve outcomes for NH residents with advanced dementia. This work could have significant clinical and policy implications for the millions of Americans dying with this disease by promoting care that is more consistent with their preferences and that is less burdensome and costly.

3. STUDY LOCATION

3.1 Study Site(s):

Up to 70 nursing homes in the Boston area.

3.2 Principal Investigator's experience conducting research at study site(s), if outside of HSL facilities:

Over the past 9 years, Dr. Mitchell, with the support of 3 NIH-funded R01s, has established a network of 32 NHs in the Boston area committed to advanced dementia research. Her team has recruited and collected longitudinal data from over 1200 resident-proxy dyads in those facilities. This body of work has generated key articles in the field of advanced dementia research. Dr. Mitchell has also developed an efficient, rigorous method of screening thousands of NH residents to identify those with advanced dementia. Her team has the skills to collect complex and sensitive data from their charts, nurses, and proxies.

4 STUDY OBJECTIVES

Provide study objectives/aims/hypotheses:

The over-riding goal of the EVINCE (Educational Video to Improve Nursing home Care in End-stage dementia) study is to conduct a cluster RCT of an video ACP intervention. The Specific aims and hypotheses are:

Aim 1: To conduct a cluster RCT of an ACP intervention vs. control among 360-400 NH residents with advanced dementia (N=180-200/arm) in up to 70 matched NHs (up to 35 intervention/up to 35 control), and to compare their proxies' preferences for their level of care. Levels of care options are: comfort care (i.e., no hospital transfers except if needed for

comfort, e.g. hip fracture), basic care (i.e., hospital transfers but no resuscitation, intubation, or intensive treatments (i.e., hospitalization, resuscitation, intubation, tube feeding, ICU care), or uncertain. Preferences will be ascertained from proxies at baseline (pre and 10-minutes post video in intervention NHs), 3, 6, 9 and 12 months. At baseline, proxies in the intervention NHs will view a video ACP decision support tool. Their preferred level of care ascertained ~ 10 minutes after viewing the video will be communicated to the primary care team. Proxies in the control NHs will experience the usual ACP practices in those NHs.
H1: A higher % of proxies in the intervention vs. control NHs will choose comfort care at baseline (~ 10 minutes after viewing video in intervention arm), and 3, 6, 9 and 12 months follow-up.

Aim 2: To compare the % of residents with advance care palnning (ACP) in the intervention vs. control NHs at 3, 6, 9, and 12 months as measured by documented: 1. Explicit decisions to forego hospitalization; 2. Explicit decisions to forego other treatments (tube-feeding, parenteral therapy), and 3. Goal of care discussions between proxies and providers.
H2a: A higher proportion of residents in the intervention (vs. control) NHs will have documented decisions to forego hospitalization at 3, 6 (primary study outcome), 9, and 12 months.
H2b: A higher proportion of residents in the intervention (vs. control) NHs will have documented decisions to forego other treatments, and goals of care discussions at 3, 6, 9, and 12 months.

Aim 3: To compare the % of residents with hospital transfers (admission or emergency department) and other burdensome treatments (tube-feeding, parenteral therapy) over 12 months in intervention vs. control NHs.
H3: There will be a lower proportion of residents in the intervention (vs. control) NHs having at least one hospital transfer and at least one other burdensome treatment over 12 months follow-up.

5 STUDY DESIGN

5.1 **Study design** (e.g., double-blind, placebo-controlled, parallel design)**:**
This is a cluster RCT of an video ACP intervention vs. control among up to 400 NH residents with advanced dementia (N=180-200/arm) in up to 70 matched NHs (up to 35 intervention/up to 35 control)..

5.2 **Study duration** (total)**:**
Five years

5.3 **Duration of study for participants:**
12 months for all residents and all but 10 proxies who will be recruited to participate in a one-time 10 minute interview one month after their dyad completes the study..

6 PARTICIPANT SELECTION AND WITHDRAWAL

6.1 **Source of study participants:**
The study will be conducted in up to 70 NHs, the majority of which are part of Dr. Mitchell's network of 32 facilities that have participated in her 3 other NIH funded R01s focused on advanced dementia. Our team has established relationships with these NHs which have demonstrated a commitment to advanced dementia research. Facilities are required to have

> 45 beds and be within 60 miles of Boston. The number of facilities and eligibility criteria were chosen in order to achieve an appropriate sample size within the 36-month recruitment period and allow us to concentrate our data collection efforts.

Within our network of 32 NHs, 40% of facilities are for-profit . We will pair up to 70 NHs (up to 35 pairs) based on the for-profit status and randomly assign one NH in each pair to the intervention group and the other to the control group. A computer generated algorithm will be used to randomly assign one matched pair at a time, as we stagger the start of subject enrollment at the NHs bringing 2 NHs (i.e., one matched pair) into the study at a time. Matched pairs will always be enrolled at the same time. The statistician will remain blinded to the names of the nursing homes during the randomization process.

6.2 Total target number of participants to be enrolled:

360-400 dyads of nursing home residents with advanced dementia and their health care proxies will be recruited; approxiatemately 18 dyads per nursing home. The exact nursing homes have not yet been recruited, therefore table below in not completed.

Facility/Institution	Unit (if applicable)	Number of Participants

6.3 Inclusion criteria:

Resident eligibility criteria are: 1) Age GE 65 at the time of screening, 2) A diagnosis of dementia (any type), 3) Global Deterioration Scale (GDS) score of 7, 4) NH length of stay > 30 days, 5) proxy is available who can speak in English, and 6) proxy must either live within a 60 mile radius of Boston or be available to come to the resident's NH within two weeks of recruitment in order to conduct the in-person baseline interview. Features of GDS stage 7 include: profound memory deficits (cannot recognize family), total functional dependence, speech < 5 words, incontinence, and inability to ambulate. Only proxies who can speak English will be included because data collection instruments have not been translated into other languages. As in our prior studies, we will enroll proxies who are formally designated to make medical decisions for the patient as noted in the NH chart (i.e., durable power of attorney for health care). However, if there is no such formal designation, we will enroll the informally designated health care decision-maker for the resident (i.e., next-of-kin) as indicated in the NH record.

Providers from up to 10 intervention NHs where at least 6 residents have participated in the study and where study activity has been mostly completed, wherein no more than 1 resident is currently active in the study.

6.4 Exclusion criteria:

Residents with cognitive impairment due to causes other than dementia (e.g., head trauma)

and in short-term, sub-acute SNFs will be excluded.

6.5 **Participant recruitment** (describe recruitment methods and submit any materials to be used to recruit participants)**:**

At baseline and q3months thereafter (up to 36 months) a research assistant (RA) will interview nurses on each NH unit to identify eligible residents based on the aforementioned eligibility criteria. A diagnosis of dementia will be confirmed by chart review, and clarified with the resident's primary care provider if necessary. One packet of recruitment materials will be left in the resident's room and another will be mailed to the proxies of eligible residents, including an introductory letter about the study, a study flyer, and a copy of the consent form for their reference. Proxies will be telephoned one week later to solicit their participation, confirm eligibility, and obtain informed consent for themselves and residents (see section 6.6). If no contact is made on the first call, the proxies will be called weekly for a maximum of three weeks, at which point a second mailing of the same recruitment materials will be made. One week after the second mailing, the RA will initiate the same process of weekly calls for a maximum of three weeks. If no contact has been made with the proxy by the conclusion of the second mailing/calling series, no further attempt to contact the proxy will be made. This approach to recruitment, involving weekly calls to proxies has been used for three previous larger studies by our team. The previous studies involved outreach to more than 3,000 proxies, successfully recruiting approximately 1200 dyads without complaint from any proxy. If the proxies are willing to participate and consent obtained, the baseline in-person interview will be scheduled within two weeks either at their homes or at the NHs based on the proxy's preference.

To increase study awareness and enthusiasm among resident proxies, we will be leaving study flyers in the facility or unit and introducing the study during family meetings at the discretion of the study contact within the facility.

6.6 **Procedures for obtaining informed consent,** including who will obtain consent and the timing of consent from recruitment**:**

An introductory letter, a study flyer and a copy of the study consent form will be left in the eligible residents rooms and mailed to their proxies as described in the recruitment procedures section (6.5). During the telephone call in which the RA ultimately contacts the proxy, the RA will solicit their participation and answer any questions. The RA will read the consent form to the proxy over the telephone. As the residents have advanced dementia, the proxy will provide informed consent for the residents and themselves. If, after the RA reads the full consent form to the proxy, the proxy agrees to participate and gives verbal consent for both themselves and the resident to participate in the study, the RA will sign the consent form and mail it to the proxy. This telephone consent procedure has worked well and efficiently for recruitment of over 1200 study subjects in the previous 3 studies.

There are several reasons to obtain informed consent on the telephone at the time of initial contact with the proxy rather than at the in-person interview. There may be up to a 2-week lag period between the time of that initial contact with the proxy when they agree to participate in the study and their in-person interview. That is a very valuable period with respect to the flow of the study to complete the baseline resident chart review. It is important to bear in mind that to minimize bias, the research assistant doing the chart reviews and the research assistant doing baseline proxy interviews will be two separate

individuals; the research assistant conducting the chart reviews will be blinded to the nursing home allocation (control vs. intervention). At the baseline in-person interview we will be asking questions and giving information about advance care planning to the proxy. A key part of the intervention is the placement of a feedback form about the proxy preferences for the primary care team into the resident's medical chart. If the research assistant doing the baseline chart review sees this form, he/she will know that the nursing home is an intervention site and this will ruin the fidelity of the blinding, introducing potential bias into the data collection. In addition, the research procedures at the baseline in-person chart review may prompt changes in the resident's care plan. The intent of the baseline resident chart review is to obtain resident information unadulterated by study procedures. While the chart review could theorectically be conducted retrospectively to the date of the proxy interview, this additional detail would have the potential of introducing data collection errors in key outcome measures. In summary, the baseline resident chart review needs to be conducted before the in-person proxy interview, and this consent needs to be obtained at the time of initial contact with the proxy.

Our team has extensive experience obtaining consent over the telephone from proxies of nursing home residents with advanced dementia from three other large cohort studies.

Given that randomization is at the NH level, two consent forms will be used. Both consent forms will seek permission for data collection, but proxies in the intervention NHs will also be asked to consent to the intervention.

Verbal Consent for proxy and provider participation in the one-time study exit interview will be obtained at the time of exit interview.

Since the proxies that will be asked to participate in the exit interview have previously consented to participate in the study, they are aware of the study and will be asked to participate in one additional interview at the time of contact.

To obtain verbal consent from providers to participate in the telephone interview towards the end of the study, a member of our research team will contact providers and explain the study, along with the purpose of the brief interview for which we seek their participation. Providers will be clearly informed that their participation is voluntary and that they can refuse further participation at any time. Following this explanation, the research team member will ask provider for verbal consent, record their answer in the electronic data capture system, and continue immediately with the interview for all those that agree to participate.

6.7 **Withdrawal of participants** (anticipated circumstances when participants will be withdrawn without their consent, how participants will be withdrawn, including use of any collected data and follow-up with any new/pertinent information)**:**
Proxies will be withdrawn from the study without their consent if we are unable to reach them for two consecutive follow-up interviews. Residents and their proxies will be withdrawn from the study if the resident permanently moves out of his/her current nursing home to a new location wherein we have no research relationship. All data collected on proxies or residents prior to involuntary withdrawal may be used as part of the analyses.

Proxies are free to voluntarily withdraw from the study at any point. It they do withdraw,

we ask their permission to continue collecting data from their loved ones chart, but will withdraw the resident if that permission is not given. The case of voluntary withdrawal we will request permission from the proxy to retain previously collected data from both themselves and the resident in our analyses. If they refuse, these data will be permanently removed from our databases.

Residents who die during the follow-up period will be withdrawn from the study following the completion of a post-death chart review within 6 weeks of death. Proxies of deceased residents will also be withdrawn from the study, with the exception of the 5 proxies that agree to participate in one additional exit interview.

6.8 **If the participants may have diminished capacity to provide informed consent or to understand study procedures (now or in the foreseeable future),** describe additional safeguards to protect their rights and welfare, including how and when you will engage legally authorized representatives**:**

NH residents with advanced dementia cannot provide informed consent. Proxies will provide verbal consent during a telephone interview with a member of the research team

The consent form will be read to the proxy and their questions will be addressed. If the proxy agrees to participate, the research team member will sign the consent form and mail the signed copy to the proxy.

6.9 **Will non-English speakers will be enrolled in the study?** ☐ **Yes** ☒ **No**

If yes, confirm what language will be used to consent prospective study participants. If the language used to consent is not the same language used by study participants or their legally authorized representatives, describe what methods and materials will be used to confirm their understanding of the study:

7 STUDY PROCEDURES

7.1 **Study visits including procedures/tests involved** (e.g., blood test, x-rays, questionnaires. If numerous study visits and procedures are involved, include a study procedure timeline)**:**

Facility and staff orientation: The co-PIs and the project director will orient the facility staff during the month prior to initiation of the study in the NH. Facility staff will not be required to collect data. In both the control and intervention NHs, orientation will include an explanation of the recruitment and data collection procedures. In the intervention NHs we will also show the video and feedback forms to the staff. Orientation with staff will be conducted during 30-minute in-services offered at various shifts. Senior administrators will also be given study information, with our contact information, to distribute to primary care providers and other nursing home staff at their discretion. If a primary care provider contacts our team asking us not to recruit one of their residents, we will not recruit that resident. In our prior studies, in which we have recruited over 1200 NH residents with advanced dementia, only on one occasion did a physician request that an eligible resident not be recruited.

3.C.ii.e. Intervention: The ACP intervention consists of a 12-minute video decision support tool for proxies with feedback of their preferred level of care to providers. The 12-minute video was filmed by the research team. The video's content and structure was developed

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using an iterative process of drafting and review by a team of geriatricians, neurologists, palliative care physicians, and family members of patients with advanced dementia. A specific goal of this team was for the information portrayed in the video to be as objective and balanced as possible. The narration was professionally edited to a grade six reading level. Versions of the video have been pilot tested in various patient groups, with evidence for effectiveness and acceptability. Over 90% of subjects rate the videos as highly acceptable, helpful, and would recommend it to others.

The video begins with a physician-moderator introducing the viewer to the broad concept of ACP for advanced dementia and the levels-of-care framework adapted from our prior studies. The levels are: intensive medical care, basic medical care, and comfort care care. Specific details and/or language were adapted to be relevant to NH residents with advanced dementia. As used in our prior studies, the first part of video depicts an actual NH resident with advanced dementa and describes the typical features of the condition. The narration then describes the overall goal of care and specific treatments that typically align with each treatment level with visual images of those treatments. A close-to-final draft of the video script for this study is attached. There may be a few additional edits made to the script prior to the study's initation. Enclosed is a an earlier version that is very similar to what we will use with several updates, including: the script will be changed to the one enclosed with this submission, the visual text and images will align with the revised script, and images of a nursing home resident being tube-fed will be added to the portion describing intensive medical treatment. The final video will be submitted to the IRB prior to starting the study.

Proxies in the intervention NHs will be shown the video on the research assistant's (RA's) iPad at the baseline in-person interview. Immediately prior to and approximately 10 minutes following the video, the RA will read a brief verbal description of each level of care to the proxies, identical in format as will be used in the control group, and their preference will be ascertained (e.g., intensive medical care, basic care, or comfort care). The RA will record the proxies' post-video preferences on feedback forms that will be put on the residents' charts and emailed/mailed to their primary care providers. The descriptions of the levels and of the types of treatments that align with each level will be on this form.

Proxies in the control NHs will be exposed to the usual ACP practiced in the facilities. They will also have an in-person baseline interview at which they will read a brief verbal description of each level of care, and their preference will be ascertained for research purposes only. Proxies in the control arm will not view the video. We also will not feedback baseline preferences to providers in control NHs because we want the ACP planning process to reflect usual care as much as possible and because we consider this feedback to be an integral component of an ACP intervention. We did not feel a more developed attention control was needed for several reasons. First, proxies in the control NHs will have the same exposure to the research team as those on the intervention, including a baseline in-person interview. Second, the RAs will read brief descriptions of the levels of care to the proxies in the control arm at each interview in order to ascertain their preferences. Thus, the research protocol already partially augments their awareness of ACP. Finally, the primary outcome is obtained from the residents' charts, and does not rely on proxy measures. After completion of this entire study, NHs in the control arm will be provided with copies of the video to use as part of clinical care at their discretion.

Data will be collected from each dyad by proxy interviews and resident chart reviews at baseline, and 3, 6, 9, and 12 months. At baseline, a nurse with primary care responsibilities for the resident will be identified and interviewed by the research assistant for approximately 3-minutes in a private space in the facility to assess the resident's functional statues. The baseline proxy interview will be in-person and all subsequent interviews will be over the telephone. A chart review will also be conducted within 6 weeks of death. Data elements collected at each of these interviews/assessments are described below:

Resident baseline assessment (28 minutes): (20-minute chart review, 3-minute nursing interview, 5-minute resident examination). The following data will be abstracted from the chart: demographic data, medical comorbidity, decisions to forego hospital transfers and other treatments, and feeding tube use. The nursing interview will include functional status (BANS-S) and will be conducted in a private space in the nursing home. Resident examination will measure cognitive status (TSI).

Proxy baseline interview (30 minutes control; 42 minute intervention): A baseline in-person interview will be conducted to collect the following data: demographic, preference for level of treatment (intensive, basic, comfort care or uncertain), prior communication about ACP with providers, and comfort with the interview. In the intervention arm, preferences for the level of care will be ascertained from the proxies just prior to and ~10 minutes after viewing the video.

Resident quarterly assessments: (20-minute chart review) The following data will be abstracted from the chart to reflect the residents' status since the prior assessment: decisions to forego hospital transfers and other treatments, goals of care discussions, feeding tube use, parenteral therapy, other health services utilization, and acute illnesses.

Proxy quarterly interviews (20 minutes): Proxy telephone follow-up interviews will include: preference for level of care, communication with providers, and comfort with the interview.

Resident death assessment (20 minutes): Every month, RAs will contact the medical records department or senior administrator of each NH to ensure they are aware of a subject's death in a timely manner. Charts will be reviewed within 6 weeks of death to determine date and location of death, and number of days in the last month of life spent in the NH, and the following information since the prior assessment: decisions to forego hospital transfers and other treatments, goals of care discussions, feeding tube use, parenteral therapy, other health services utilization, and acute illnesses.

Brief (~10 minute) exit interviews will be conducted over the telephone with a small sample of proxies that participated in the intervention arm of the study, as well as providers from participating intervention facilities. We will conduct 10 proxy interviews (5 proxies of residents that pass away during the course of the study, and 5 proxies whose residents completed all 12 months of the study), and up to 24 care providers (up to 2 each of the following: social workers, nurses and primary care providers such as MD, NPs or PAs) from a small sample of up to 10 participating nursing homes.

To conduct proxy interviews, approximately one month following the resident's passing or the completion of all 12 months of study follow-up, a research assistant will call previously

consented proxies from the intervention group, (weekly for up to 3 weeks) and ask the proxy to participate in one additional ~10 minute interview. Following obtainment of verbal consent the RA will proceed with the interview.

Brief (~10 minute) telephone interviews will be conducted with a small sample of healthcare providers that are known to have been involved in the care of participating residents.

To capture the perspectives of providers that have been involved in providing care to residents participating in the intervention arm of the study, and at the same time, avoid influencing the provision of care during the remainder of the study, we will attempt to interview providers from homes wherein at least 6 residents have participated in the study but where study activity has been mostly completed, wherein no more than 1 resident is actively participating in the study. Using provider contact information collected during the study, for the purpose of sending providers feedback forms from participating proxies, we will attempt to contact each provider by making weekly calls for up to 3 weeks. Once we contact the providers, we will ask for their verbal consent to participate in a brief interview and proceed with the interview at that time.

7.2 List procedures being performed as routine medical care (e.g. for diagnostic or treatment purposes):

All resident treatments and orders in both study arms will occur at the discretion of the NH providers as part of their routine medical care. The study does not include any direct clinical intervention to the resident's care.

7.3 List procedures being performed solely for the research:

Prodecures conducted solely for research include: all proxy and provider interviews, all resident chart reviews, and exposure of the proxies in the intervention arm to the video with feedback of their stated preferences being placed into their medical record and sent to the NH providers.

7.4 Describe the methods used to protect participant privacy:

All access to data is restricted to those in the research group who have been authorized by the PI to utilize this information. Because HSL is a licensed hospital, the information technology group adheres to all the policies and practices under the HIPAA regulations, therefore, creating a very tight computing environment. In order to preserve confidentiality, subjects will be assigned a study number known only to the co-PIs, RAs and data manager. All data collected electronically by RAs on laptop computers and iPads use internet-based electronic data capture programs (i.e., RedCap) accessible only to research personnel through the use of unique password. All written documentation with subject information will be stored in a locked area at HSL, accessible only to the co-PIs, RAs and data manager. All data will be stored on computer workstations, accessible only through use of a unique password. Access to these data will be limited to study personnel on a "need to know" basis. If a NH resident is deemed ineligible for the study, all personal health information obtained for screening purposes will be destroyed as soon as possible.

8 STATISTICAL PLAN

8.1 Statistical methods:

Aim 1: To compare the preferred level of care of proxies in the intervention (vs. control) nursing homes (NHs). The percent (%) of proxies choosing each of the following levels of care at baseline (prior to and ~10 minutes after viewing the video in intervention group), 3 and 6 and 12 months will be calculated: intensive treatments, basic care, comfort care, or uncertain. For Hypothesis 1 (H1), the outcome will be dichotomized as comfort care vs. other. The proportion of proxies choosing comfort care will be compared between the intervention and control groups using an extension of logistic regression based on general estamited equations (GEE) to account for the clustering at the NH level at each time period. The focus of H1 will be on comparing preferences obtained from proxies ~10 minutes after viewing the video in the intervention arm and at baseline in the control arm. Analyses at follow-up periods will inform the stability of preferences and intervention effect over time. Analyses will be at the level of the proxy. While the NHs are randomized, any baseline imbalances identified between key proxy or resident characteristics will be added to the final model using the change-in-effect method.

Aim 2: To compare advance care planning (ACP) between residents in the intervention vs. control NHs: The initial approach will be to describe the % of residents in both arms with the following ACP outcomes by 3, 6, 9, and 12 months determined from documentation in the resident's chart: 1. Decisions to forego hospitalization; 2. Decisions to forego tube-feeding, 3. Decisions to forego parenteral therapy, and 4. Goal of care discussions. The proportion of residents with these outcomes will be considered cumulatively at each time point, including those who died. For Hypotheses 2a and 2b, the proportion of residents with each ACP outcome will be compared between the intervention and control groups at 3, 6, 9, and 12 months using an extension of logistic regression based on GEE to account for the clustering at the NH level. The % of residents with a documented explicit decision to forego hospital transfers by 6-months follow-up will be the primary outcome of this randomized clinical trial.

3.C.iii.b.3. Aim 3: To compare hospital transfers and other treatments in intervention vs. control NHs. The proportion of all residents experiencing each of following outcomes at least once over entire 12 month follow-up period will be calculated: i. hospital admissions, ii. emergency department (ED) visits (without admission), iii. tube-feeding, and iv. parenteral therapy. Analyses for H3 will focus on two outcomes: i. the proportion of residents experiencing the following at least one hospitalization or ED visit (i.e., any hospital transfer) over 12 months and ii. the proportion of residents experiencing either tube-feeding or parenteral therapy over 12 months. The outcomes will be compared between the intervention and control groups using an extension of logistic regression based on GEE to account for the clustering at the NH levels. Analyses will be at the level of the resident. Odds ratios and 95% Confidence Intervals will be generated from these analyses.

8.2 Sample size determination (include power calculations or provide justification for their absence, e.g., pilot/feasibility study)**:**

The sample size between 360-400 dyads from up to 60 NHs (180-200 dyads/up to 30 NHs per treatment arm) will provide sufficient power to detect clinically meaningful differences between the intervention and control NHs for our primary outcome: a decision to forego hospital transfer by 6 months. We are able to make realistic estimates of outcomes in the control group based on our extensive prior studies. Additional power calculations are

provided for selected secondary outcomes for Aims 1 and 3. All calculations use two-sided testing and a 5% type I error rate. Power calculations are adjusted for potential dependence of observations within NHs using an intraclass correlation of 0.05 and assuming 18 residents per NH. Based on our estimates, we will have 96% power to detect an absolute difference of 25% for the primary outcome (Aim 2) and 82% power to detect a 20% difference. For secondary outcomes, power to detect a 25% difference is excellent for a baseline preferences (post video in intervention arm) (Aim 1), and good for a 20% difference. Power to detect a 15% difference in hospital transfers (Aim 3) is very good, but limited for smaller differences.Table 3. Power estimatesTable 3. Power estimates

8.3 Data management (data collection and data entry)**:**

Data management and analysis for the study will take place at Hebrew SeniorLife (HSL).

It is anticipated that the field staff involved in our prior work will be hired for this study, and thus have experience administering many of the data collection elements. The principal investigators will oversee the training of the field staff for four months prior to starting data collection. During the study, the co-PIs will perform unannounced reliability checks on a 5% sample of chart reviews and proxy interviews.

Five research Assistants (RAs) will be responsible for screening subjects, obtaining informed consent, interviewing nurses and proxies, implementing the intervention, conducting chart reviews, and doing the brief baseline resident cognitive examination. RA1 will have sole responsibility for all the in-person baseline proxy interviews and implementing the video decision support tool and provider feedback in the intervention facilities. As such RA1 will not be blinded to the randomization scheme. RA2, RA3, and RA4 will be blinded to the randomization scheme to the extent possible, and will collect all the other outcome data through chart reviews and follow-up proxy interviews. RA5 is primarily responsible for proxy recruitment and obtaining consent from proxies. She will not be blinded to the study assignment.

All data will be collected and entered electronically by the RAs using laptop computers or tablets in the field. State-of-the-art electronic data capture software and programming (e.g., RedCap) will be used for these purposes. Once entered, the data will be downloaded and entered into the computer systems at HSL IFAR for cleaning, programming and analyses.

9 FORESEEABLE RISKS, POTENTIAL BENEFITS, COMPENSATION AND COSTS TO PARTICIPANTS

9.1 Potential medical risks of study procedures:

We anticipate little risk to the residents enrolled in this study and we don't anticipant any proxy medical risks. All the resident data will be obtained from their medical record, baseline nursing interviews, and a 5-minute cognitive examination at baseline only. The RAs expected to be hired for this study have conducted this cognitive examination on over 1200 NH residents in our prior studies without any adverse consequences. If at any time the resident appears bothered or distressed by the cognitive testing, the RA will cease the examination. Residents in the control NHs will experience usual ACP as practiced in their NHs. Residents in the intervention NHs will experience ACP subsequent to their proxies' exposure to the intervention (video plus feedback of preferences placed in chart and sent to their primary care provider). Given that the proxies are the designated health care decision-makers for these residents, it is reasonable to assume they will make informed decisions

based on the residents' perceived wishes and in their best interests. Thus, the risk from the intervention for the resident is expected to be minimal.

9.2 **Psychosocial** (non-medical) **risks, discomforts, inconveniences:**

We don't anticipate any resident psychosocial risks, discomforts or inconveniences. The proxy interviews include questions related to the illness of their loved ones, and therefore may be distressing. Proxies may refuse to answer any of the questions. In our prior studies of NH residents with advanced dementia, we have conducted over 1200 repeated proxy interviews using similar questions. These interviews were very well tolerated. When proxies were asked how comfortable they were answering the study questions, only 3% stated that they were uncomfortable. The RAs never had to stop the interview because of proxy distress. In the intervention arm, proxies will listen to and watch a 12-minute video that contains a verbal narrative and visual images describing 3 the levels of care (intensive medical care, basic medical care, and comfort care), and therefore may be distressing. Using similar video decision support tools in our prior studies that involved a combined total of several hundred subjects, including healthy older adults, older patients admitted to sub-acute skilled nursing facilities, and patients with advanced cancer, over 90% of subjects rated the videos as highly acceptable, helpful, and would recommend it to others. The RAs never had to stop the interview because of subject distress. Should a proxy become distressed during the interviews or while watching the video and prefer not to continue, the RA will be instructed to cease the study procedures. The RA will offer to telephone him/her back the next day to see how he/she is managing. If deemed necessary, the RA may suggest to the proxy that he/she contact his/her primary care provider. Proxies will also be slightly inconvenienced by the in-person baseline interview and subsequent telephone interviews. We will schedule all interviews at the convenience of the proxy. Moreover, for the baseline in-person, we will offer for the RA to either come to their home or meet them at the NH, according to their preference.

An additional potential burden of this study is the time commitment of the NH staff to participate in facility orientation, resident recruitment, and baseline nursing interviews. Data collection procedures and intervention implementation will not require any staff assistance. We will make every effort to minimize staff burden. The NH administrators in the ~32 facilities that have participated in 3 of our prior large cohort studies that used similar methods to recruit residents with advanced dementia have not felt these procedures to be too onerous. Based on our experience, each nursing interview is expected to take < 5 minutes to complete. Given that there is only one interview per subject and the relatively small numbers of subjects at each site, it is unlikely the burden will fall on a single nurse. Every effort will be made to conduct these interviews at times that are convenient for the nurses.

9.3 **Potential benefits to individual participant:**

Proxies in both study arms will gain knowledge about levels of care options for residents with advanced dementia. Proxies in the control NHs will be read brief descriptions of the levels of care by RAs at each interview in order to ascertain their preferences, thus augmenting their awareness of ACP. Proxies in the intervention arm will gain this knowledge by viewing the video as well as through the descriptions of the levels of care

read by RAs at each interview. Residents in the intervention arm may further benefit by having their preferred level of care, as perceived by their proxies, communicated to their healthcare providers. Thus, there is the potential for residents to benefit from the study by having their treatments better aligned with their preferences. Proxies also may find that some stress is relieved by talking in detail to an attentive, impartial listener about issues related to their loved ones care and illness.

9.4 Potential benefits to study population, community, or society:

The results gleaned from the study are intended to improve the advance care planning (ACP) in advanced dementia. Better ACP is a key opportunity to improve advanced dementia care. Video decision support is a practical, evidence-based, and innovative approach to ACP. If this RCT is successful, this will be one of the first rigorously tested interventions shown to improve outcomes for NH residents with advanced dementia. This work could have significant clinical and policy implications for the millions of Americans dying with this disease by promoting care that is more consistent with their preferences and that is less burdensome and costly.

9.5 Describe provisions for medical care and available compensation in the event of injury, if any:

Should a proxy become distressed during the interviews or while watching the video and prefer not to continue, the RA will be instructed to cease the study procedures. The RA will offer to telephone him/her back the next day to see how he/she is managing. If deemed necessary, the RA may suggest to the proxy that he/she contact his/her primary care provider.

9.6 Remuneration for participants (e.g. goods, services, gift cards, cash, etc.)**:**

Proxies that agree to participate will be given a $10 gift card in appreciation for their time and efforts in the study.

9.7 Describe any costs participants may incur during the study:

Proxies will have the option of having the in-person baseline interview in their home (RA will travel to their home) or the NH. If they opt for the NH, then the proxy will incur the cost of travel to NH.

10 SAFETY ASSESSMENT AND STUDY MONITORING

10.1 Definitions of adverse event and serious adverse event for the study:

The study has been granted a low-risk status by the NIH. The DSAC has agreed that the only potential SAE (serious adverse event) for this study is extreme distress of proxies while viewing the intervention video or answering questions about the residents' care, as defined by either of the following

1. Based on the assessment of the trained Research Assistant, the proxy exhibits signs of severe emotional distress (i.e., excessive crying, anger, sadness etc) while watching the video or during the interview such they are unable or unwilling to continue. (Due to the sensitive nature of the material, minor emotional responses by the proxy, such as tearing up, are expected by will not be a SAE)
2. The proxy directly requests that the protocol be stopped or leaves the room during

during the video or interview due to distress.

(Patients with advanced dementia are very frail. In the natural course of the disease, we expect of 40% mortality rate over one year. Thus, while deaths will be reported to the Data Safety and monitoring committee, they are not considered an adverse event.

10.2 Adverse event (AE) reporting (method, distribution and time frame)**:**

If an adverse or unexpected event occurs, it will be recorded by the research assistant on the Hebrew Senior Life IRB-based Adverse Event form. The research assistant will immediately notify the Project Director of the event by telephone and send the form to her by fax, email, or in-person. The Project Director will notify the PI (Dr. Mitchell or Dr. Volandes if Dr. Mitchell is unavailable) with 24 hours in-person or by telephone. The Data Safety Advisory Committee chair and HSL IRB chair will be notified of this event within 48 hours in writing (email and/or hard copy).

10.3 Process for data and safety monitoring:

Safety monitoring will be the responsibility of a Data and Safety Advisory Committee(DSAC) composed of voting and non-voting members. The non-voting members include: the co-Principal Investigators , the study biostatistician , the data analyst and project director. The voting members include: two experienced clinical dementia investigators and one experienced biostatistician from outside the Harvard/Hebrew SeniorLife system. One voting member will be designated as chair. The NIH Project Officer responsible for EVINCE will also be invited to attend DSAC meetings but will be a non-voting member. The voting members will function as independent Safety Monitors. The committee was convened on November 5th via conference call to provide input and guidance on the composition and conduct of the DSAC, study protocols, quality assurance and safety issues related to the protocols, and to define serious adverse events..

DSAC meetings will occur every 6 months via conference call. At least two weeks prior to each DSAC meeting, the study biostatistician and analyst will compile two reports, one with data to be reviewed by all members and the other with data to be reviewed only by the voting members. Each meeting will consist of an open and a closed session. The open session will be attended by all of the DSAC members. Issues discussed during the open session will include aggregated (two study arms combined) reports of the following: subject and facility recruitment rates, dropout rates, deaths, protocol deviations, SAEs, and unanticipated problems. The closed session will immediately follow the open session and will be attended only by voting DSAC members. Data reviewed in the closed session will include primary and secondary outcomes as well as all items presented in the open-session (subject and facility recruitment, dropout rates, death, , protocol deviations, serious adverse events and unanticipated problems) stratified by the two study arms in a blinded fashion. The DSAC will be free to determine the need to stop the protocol based on examination of serious adverse events and study outcomes. At minimum, in each report the DSAC will evaluate a preset stopping rule based on having a statistically significant (one sided $P<0.05$) higher count of SAEs in the intervention group. Within a week after the DSAC meeting, the

Project Director will send a summary of the open-ended meeting to all DSAC members, and the DSAC chair will send a summary of the close-ended meeting to the voting members. Pre and post meeting reports will also be sent to the NIH Project Officer at her request.

It will be the responsibility of the co-PIs and the DSAC chair to submit the post-meeting reports from the DSAC to HSL IRB within a week of the meeting. The IRB chair will be informed of any SAEs or DSAC decision to stop the study for any reason within 48 hours.

10.4 If this is a multi-site study, indicate how modifications of study procedures or materials will be communicated across sites, as well as communication of adverse events, or other issues affecting the research:

While the study involves multiple NHs, all the data collections and study protocol will be handled by the HSL IFAR research team. Therefore, modifications of study procedures and adverse events across will be communicated among the study personnel at the regularly scheduled team meetings or ad hoc telephone meetings or emails as the situation dictates. The Project Director (s), under the direction of the co-PIs will ensure this communication. In additon, at each NH, there will be a senior administrator (i.e., Director of Nursing, Medical Director) identified as the study contact. The project director and/or PIs will take responsibility of communicating any modifications or adverse events to that individual.

11 DATA HANDLING AND RECORD KEEPING (FOR BOTH PAPER AND ELECTRONIC DATA)

Confidentiality of Data:

a. Identifiers to be stored with data:

Source paper and electronic documents at HSL will contain the following information about the residents: name, nursing home name, birthdate, and gender. Source paper eand electronic documents at HSL will contain the following information about the proxiess: name, birthdate, gender, address and telephone number.

b. If codes are to be assigned in the place of participant identifiers, storage location of key/links to codes:

Locked cabinet at HSL IFAR

c. Study data storage location:

Data for the EVINCE project will be collected through the use of the electronic data capturing system called RedCap. As such, the data will be stored in a password protected environment on the internet. Data processing will take place within HSLs IFAR. All data processed will be stored in password protected computers at HSL IFAR.

d. Data Security Measures:

Electronic data is input to a secure site. Source documents will be locked in secure cabinets at HRC the PI and Project Director will access to the keys

e. Individuals who will have access to identifiable data, or key/link to codes:

Principal Investigators, Project Directors, Data Analyst and to a limited extent the research nurses and assistants.

f. **Timing of destruction of materials containing identifiers and keys/links to codes:**
Once the study has ended and all subjects have been followed for safety and study outcomes so that we will be able to contact participants if necessary.

g. **Method for destroying materials with identifiers and keys/links to codes:**
Paper documents will be shredded and electronic files will be deleted.

11.1 **List source of data** (e.g., hospital records, clinical and office charts, checklists, pharmacy dispensing records, etc)**:**
Residents' NH record: The resident's medical record containing information collected for routine clinical care will be abstracted at the baseline, quarterly for up to 12 months, and within 6 weeks of death if the resident dies during the 12 month observation period. The following information will be obtained from the chart: demographic data, medical comorbidity, decisions to forego hospital transfers and other treatments, goals-of-care discussions, feeding tube use, parenteral therapy, other health services utilization, and acute illnesses. If the resident dies, the chart will be reviewed within 6 weeks of death to determine the date and location of death, and number of days during the last month of life spent in the NH.

Resident clinical examination: A 5-minute resident examination will be conducted at baseline by the RA to measure cognitive status using the Test for Severe Impairment.

Nurse interviews: At baseline, nurses caring for NH residents with advanced dementia will be interviewed for research purposes to determine functional status. Nurses will also be asked to determine if the resident meets criteria for Global Deterioration Stage 7 during the screening procedures.

Proxy interviews: At baseline (in-person) and quarterly (telephone) interviews will be conducted with the proxies to collect the following data: demographic, preference for level of care, communication with providers, and comfort with the interview.

Medicare Nursing Home Compare website 84 For descriptive purposes, data will be collected from the publicly available Medicare Nursing Home Compare website characterizing the NHs' organizational structure, staffing, and quality of care markers that may be relevant to care of residents with advanced dementia.

Exit interviews will be conducted on a small sample of proxies from the intervention arm of the study, as well as up to 24 care providers from intervention NHs to capture qualitative information about participant and provider experiences related to the study intervention.

11.2 **Record retention** (e.g. where and for how long after study completion; for guidance, please see HSL's Record Retention Policy)**:**
Records will be retained for a minumum of 3 years after completion of research. Paper document will be kept in a locked storage facility. Electronic data will be kept on password protected computers at HSL IFAR.

12 SENDING/RECEIVING SPECIMENS/DATA TO/FROM RESEARCH COLLABORATORS

12.1 Specimens/data to be sent and/or received:
Data will not be sent or received from collaborators.

12.2 Who will send and/or receive data:
N/A

12.3 How will specimens/data be transported:
N/A

12.4 Do you expect to use data or specimens collected as part of this research for other, future research projects? ☐ **Yes** ☒ **No**
If yes, be sure to include authorization for future use in the consent form.

13 DISSEMINATION OF RESULTS

13.1 Publication plan (if not addressed in a separate agreement):
Publication is expected after completion of the study and will involve the sponsors and designated investigators.

13.2 Plan to share individual and/or aggregate results with participants (e.g., results letter)**:**
There is no plan to share results with individual participants. We will provide aggregrate results to the participating nursing homes after the analysis is complete. If the videos prove effective, if you will provide the videos to the participating nursing homes (control and intervention) for future use with family members/proxies.

14 REFERENCES

see attached bibliography

15 ATTACHMENTS (RECRUITMENT & CONSENT MATERIALS, SURVEYS, INTERVIEW QUESTIONS, ETC)

1. Copy of the In-service materials
2. Copy of Redcap electronic data capture forms