DECAD

Decisions about Cancer Screening in Alzheimer's Disease (DECAD)

PROTOCOL
4.28.2022

BACKGROUND AND STUDY AIMS

The incidence of both Alzheimer's disease and related dementias (AD) and of breast cancer increases with age; thus, many older women with AD are faced with questions about breast cancer screening. Having AD can impact a women's ability to participate in her medical decision-making about breast cancer screening. As a result, AD family caregivers (hereafter referred to as caregivers) are frequently involved in making decisions about mammography. Each year over 800,000 women with AD receive screening mammography. Caregivers cite decision-making and procedures related to mammograms as particularly stressful and there is a lack of data that mammography screening helps women with AD live longer or better.

The average life expectancy of older women with AD is <10 years. Current guidelines recommend not screening women with a life expectancy of <10 years. The rationale is that these women will not live long enough to experience the life prolonging benefits of mammography screening. Instead, screening these women can put them at risk for physical and psychological harm as a result of over diagnosis, overtreatment, additional tests due to false positives, and the identification of clinically unimportant cancer. Conversely, while mammography screening may not help older women with AD live longer, it may help find breast cancers earlier when they are easier to treat. Therefore, it is important that women with AD and their caregivers have information to make an informed decision about screening. The goal of our project is to test if an evidence-based decision aid for caregivers can improve the quality of decision-making about mammography in older women with AD.

A decision aid for AD caregivers about mammography could improve the quality of medical decision-making, by informing caregivers about the risks, benefits, and their choices. No decision aids exist to support AD caregivers with decisions about mammography despite the frequency that caregivers are approached with this decision. The DECAD Study will test if a decision aid can support AD caregivers and patients in making decisions about breast cancer screening by improving markers of decision quality. The study aims are:

Primary Aim: To examine the effect of a mammography screening decision aid intervention for older women with AD on markers of decision quality among caregivers.
Hypothesis: Caregivers of patients who receive the decision aid will have lower levels of decisional conflict (primary outcome) and higher levels of decision-making self-efficacy (secondary outcome) about breast cancer screening in older women with AD, compared to the control group.

Secondary Aim: To examine the effect of a mammography screening decision aid intervention for caregivers on the utilization of mammograms in older women with AD.

Hypothesis: Women with AD who are randomized to receive the decision aid will receive less mammography screening at 15 and 24 months after the intervention, compared to the control group.

Exploratory Aim: To identify the factors that are associated with impact of a decision aid intervention on mammography screening cessation in older women with AD.
Exploratory Hypothesis: Among the dyads randomized to receive the decision aid, caregivers of patients with more severe cognitive impairment, greater co-morbidities, or older age will experience a greater reduction in frequency of mammograms in the 15 and 24 months following the intervention.

METHODS

Study Design:

- Two arm, randomized controlled trial.
- 426 AD patient-informal caregiver dyads with completed baselines. 213 dyads receive the decision aid on mammography (Appendix 1 and Appendix 2) and 213 dyads to receive a control condition in the form of a two-page paper pamphlet on home safety developed by the American Geriatrics Society Foundation for Health in Aging (Appendix 3).

Participants:

- Patients will be women, age 75 and older with a diagnosis of Alzheimer's disease or related dementia.

Table 1. Inclusion and exclusion criteria for the DECAD Trial

INCLUSION CRITERIA	
Patients	**Caregivers**
Female and 75 years or older	18 years or older
At least one mammogram in the past five years	Primary family caregiver of the patient*
Primary care visit scheduled in the next 12 months	
Diagnosis of AD as determined by ICD-10 code	Ability to provide informed consent
Ability to provide informed consent or assent	
Ability to communicate in English	Ability to communicate in English
EXCLUSION CRITERIA	
Patients	**Caregivers**
Permanent resident of a nursing facility	Caregiver is a non-family member who is not a legal Healthcare Power of Attorney
Had a mammogram in the past 6 months	Less than a 7th grade education**
Primary care visit scheduled is not the first visit with the PCP	
Made a decision to stop getting mammograms	Made a decision that the patient will stop getting mammograms
History of Atypical Ductal Hyperplasia, lobular carcinoma in situ, ductal carcinoma in situ, or invasive breast cancer or other cancer in the past 5 years.	Has a diagnosis of AD or has a serious mental illness such as bipolar or schizophrenia as determined byICD-10 code
Has mild cognitive impairment, serious mental illness such as bipolar or schizophrenia as determined byICD-10 code	

* Identified by the patient or listed as primary caregiver in EMR.
**The reading level of the decision aid is 7th grade.

Table 2. Sites for DECAD Recruitment*

Site	Number of sites	# of Physicians	Women ≥70 years old with AD	Race and Ethnicity for population with AD
Eskenazi Health Aging Brain Care Program	1	5	1,383	White 42% African American 51% Other or unknown 7% Hispanic 2%
Indiana University Alzheimer Disease Center	1	NA	43	White 67.5% African American 32.5%
Indiana University Health Department of Neurology	1	3	TBD	TBD
Alzheimer's Association- Greater Indiana Chapter	5-10	NA	TBD	TBD
IU Health PC		179	2,026	White 75.6% African American 22.4%

- Caregivers will be age 18 and older and an unpaid, informal caregiver for the patient either self-identified, identified by the patent, or identified by the patient's medical team.
- See Table 1 for patient and caregiver inclusion and exclusion criteria.

	14 PC practices			Other or unknown 2% Hispanic 0.9%
BIDMC	7 sites	90	1600	White- 64% Black- 23% Asian- 4% Hispanic -5%
Parkview Health	TBD	TBD	TBD	TBD
CICOA Aging and In-Home Services	NA	NA	988	TBD
LifeStream Services	NA	NA	200	TBD
Thrive Alliance	NA	NA	40	TBD
SWIRCA & More	NA	NA	90	TBD
Total	34	277	6280	
*Data as of March 2017 besides BIDMC, Parkview Health, CICOA, LifeStream, Thrive Alliance, SWIRCA & More				

Recruitment Sites (as of 11/30/2021):

- Aging Brain Care Program at Eskenazi Health
- Indiana University Alzheimer Disease Center (research registry)
- Indiana University Health Department of Neurology
- Indiana University Health Department of Psychiatry (Drs. Bateman and Wang)
- Alzheimer's Association- Greater Indiana Chapter (Support Group members)
- Indiana University Health Primary Care Practices in central Indiana
- Eskenazi Health Primary Care Practices in central Indiana
- Beth Israel Deaconess Medical Center, Boston, Massachusetts
- Parkview Health, Fort Wayne, Indiana
- CICOA Aging and In-Home Services, central Indiana
- LifeStream Services, eastern Indiana
- Thrive Alliance, southern central Indiana
- SWIRCA & More, southwest Indiana

Primary outcome: Caregiver decisional conflict at post-index visit (T3)

Secondary outcome (caregiver): Caregiver decision-making self-efficacy at post-index visit (T3)

Secondary outcome (patient): Utilization of mammograms at 15 (T4) and 24 months post-index visit (T5).

Table 3. Measures

Outcomes	Construct/Core Attributes	Outcome measure(s)	Name of Measure citation	Description	Scoring	When	Source
Primary outcome	Feel Informed Values clarification	Decisional Conflict	Decision Conflict Scale	16-items on a 1-5 Likert scale. Measures uncertainty around a decision, whether	Scores range 0-100; Lower	T1 T3	Caregiver reported

				one feels informed, clear about their personal values, and supported in their decision-making.	scores indicate less conflict.		
Secondary outcomes	Belief in ability to make and participate in shared decision making	Decision-making self-efficacy	Decision Self-Efficacy Scale (DSE)	11-items on a 5-point Likert scale. Measures of self-confidence or belief in one's ability to make decisions	Low, medium, high decision self-efficacy. Scores range 0-100	T1 T3	Caregiver reported
		Receipt of screening	DECAD Created	Review primary care notes, radiology reports, and documentation on screening/preventive care; caregiver report	Yes or no determinatio n	T4 T5	Pt EMR; Caregiver reported
	Involvement in the decision	Caregiver role in decision-making	Adapted from the Control Preferences Scale	4-items to assess preferences for and involvement in making decisions on their own or sharing responsibility with the pt or doctor.	Active vs. passive/shar ed with doctor (since aim of decision aids is to help dyads be more active in decision-making)	T3	Caregiver reported
		Patient role in decision-making	Adapted from the Control Preferences Scale	2-items to assess involvement in making decisions on their own or sharing responsibility with their family or doctor.	Active vs. passive/shar ed with doctor (since aim of decision aids is to help dyads be more active in decision-making)	T3	Patient reported
Other measures		Socio-demographics	DECAD Created	32 item questionnaire to measure items such as relationship to the patient, frequency and type of contact with the patient, geographic distance from the patient, education level, annual income, self-reported health status, etc.	Co-variates	T1	Caregiver reported
	Does severity of the patient's cog and functional impairment impact caregiver decision making	Severity of patient's cognitive impairment	Dementia Severity Rating Scale (DSRS)	12-item questionnaire for caregivers to assess severity of AD in 12 major functional and cognitive domains.	Score ranges from 0 (mild) to 54 (severe).	T1	Caregiver reported
			Caregiver Appraisal of Function and Upset (CAFU)	15-item questionnaire for caregivers to measure ADLs and iADLS impairment and how much those impairments upset or burden the caregiver		T1	Caregiver reported
		Intention for the patient to be screened	DECAD Created	3-items total. Two on a 5-point scale to assess propensity to get screened. One to ask how many more mammograms they think the patient will get.	Yes vs. those who are unsure vs. No screening; We will look at the scores continuously and categorize scores as 1-2(no), 3 (unsure), or 4-5 (yes).	T1 T3	Caregiver and Patient reported

		Breast Cancer and Alzheimer's disease Knowledge	DECAD Created	16-items (6 multiple choice and 10 true/false); 13 were adapted from other studies and 3 were developed based on the decision aid.	Sum of correct answers	T1 T3	Caregiver reported
		Burden of screening on the patient	DECAD Created	Review patient's EMR for additional diagnostic procedures due to mammogram follow-up; false-positive results, identification of an abnormality on screening exam but further work-up declined, identification of a clinically unimportant cancer; documentation of depressive symptoms, anxiety, or pain related to the experience of getting a mammogram and not a general measure to be assessed independent of that event	Yes or no Characterization if yes	T4 T5 (quarterly for DSMB)	Pt EMR review;
		Burden of screening on the caregiver	DECAD Created	5 items on a 5-point Likert scale. Assess perceptions about the burden of mammography for the patient & Semi-structured questions about patient's mammogram experience and perceived burden of screening.	Sum of scores	T4	Caregiver reported
	Values, Attitudes, Norms, and Experiences		DECAD created	15 items total. 5 items on a 10 point scale re: values; 3 items on a 7 point scale on attitudes; and 3 items on a 5 point scale re; perceived norms; and 4-itmes on a 5 point scale re: experience with mammograms	descriptive	T1 T3	Caregiver and Patient reported
		Health literacy		A 4-item health literacy assessment with values of 0-5 based on possible responses to each of the questions.[116]	Higher scores being higher health literacy.	T1	Caregiver reported
		Numeracy		A 3-item assessment of numeracy skills	Higher scores being higher health literacy.	T1	Caregiver reported
	Mammogram discussion with the Patient's provider			8-items that assess if a discussion about mammograms took place and the content of those discussions.	Descriptive	T3	
Process measure		Acceptability of the decision aid	DECAD Created	3-items on a yes/no scale and 6-items on a 5-point Likert scale to measure caregivers' and patients' perceptions about the length, clarity, helpfulness and willingness to recommend decision aid. Also, the number of times they reviewed it, how many pages they read, how long it took them to read it, how they would prefer to receive it if not part of a study.	Sum of scores	T3	Patient reported
Process measure		Acceptability of the decision aid	DECAD Created	20-items on a 5-point Likert scale and 8 yes/no questions to measure	Sum of scores	T3	Caregiver reported

				caregivers' and patients' perceptions about the length, clarity, helpfulness and willingness to recommend decision aid. Also, the number of times they reviewed it, how many pages they read, how long it took them to read it, how they would prefer to receive it if not part of a study.			

Intervention Description and Timing of Measures

Although participants may be recruited from specialty memory care or AD clinics, the intervention will be delivered in the patient's primary care setting (e.g. the usual setting for discussions about mammography).

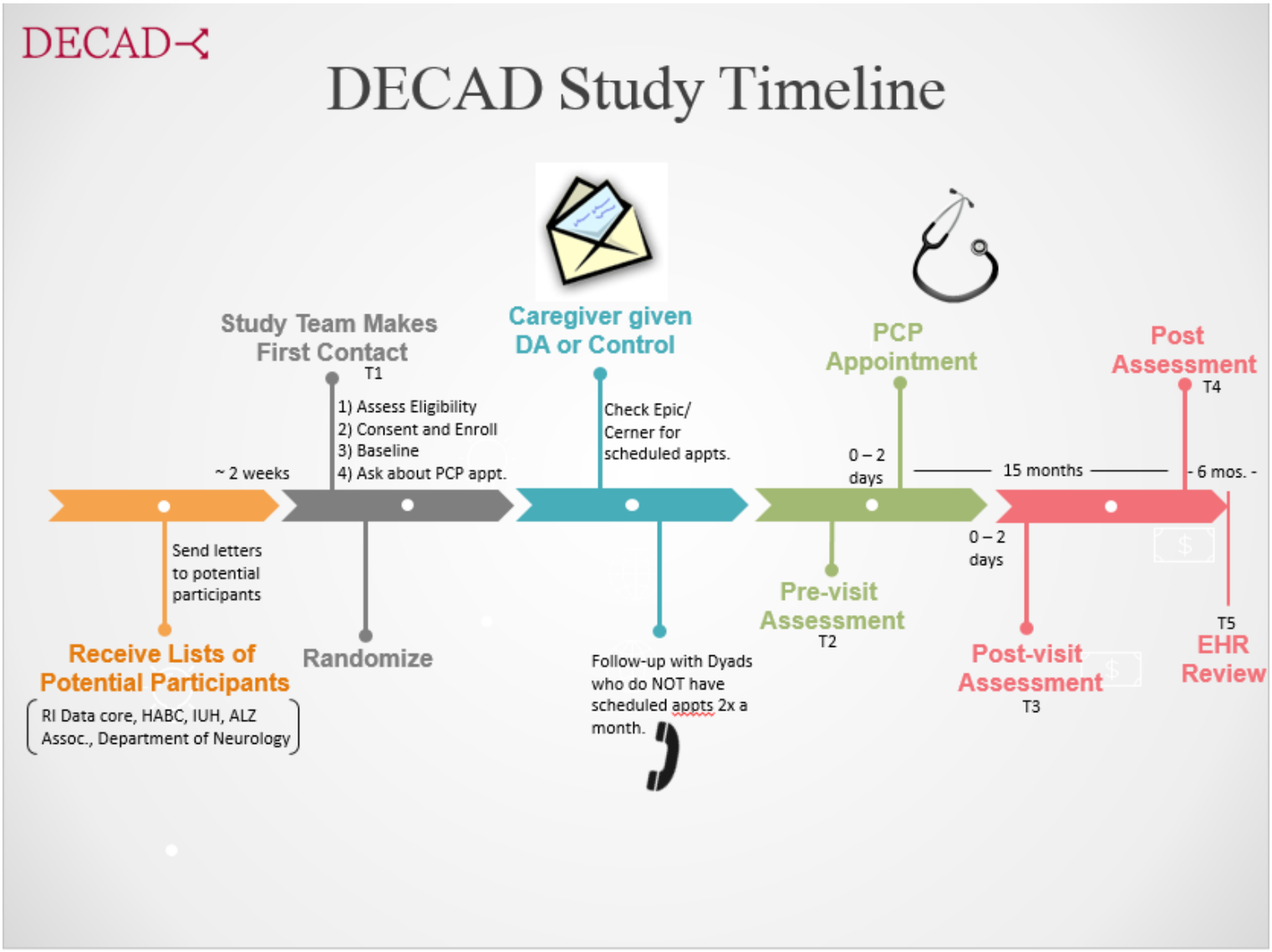
Step 1: Identification of Potential Participants

- Participants will be identified in a variety of ways and will be *tailored* based on the recruitment site. Patients identified through a clinical site (ABC, IUH) will be identified via the Indiana Network for Patient Care, which can access patient lists by doctors and clinic and PC clinic schedules. To identify potential participants at BIDMC, a data manager at BIDMC will send a research assistant a list of all women 75-89 years with dementia (based on ICD-10 codes [will be expansive and will include codes for memory loss and all forms of dementia]) and without a history of breast cancer scheduled to see their primary care provider (PCP, physician or nurse practitioner). With a HIPAA waiver a research assistant (RA) will then review these patients' medical records to see if the patient meets eligibility criteria (e.g., diagnosis of Alzheimer's or related dementia; mammogram in the past 5 years but not in the past 6 months, no history of breast cancer listed in problem list). Patients' physicians will be notified first of their patient's potential eligibility and be asked if DECAD can approach the patient and their caregiver for participation. Physicians are routinely given 2 weeks to review their patient list (per IU PBRN). At BIDMC, physicians are routinely given 2 days to respond to an email requesting permission to contact their patients. However, if the physician has an out-of-office response we give PCPs 2 days to respond after they return. The email informing PCPs that we plan to contact their patients tells PCPs that if we do not hear from them in 2 days then we will send their patients an informational letter about the study. Once approved by physician, the patient and caregiver will get a letter informing them of the study and that study personnel will be calling them in 1-2 weeks to provide more information. Participants identified from non-clinical sites (eg. Alz Assoc) will receive information about the study from the Alz Asso and from Trial Match. They will reach out to the study team directly or will provide permission to be follow-up by the study team regarding recruitment. We will also present the study at community events such as caregiver support groups and Alzheimer's related events. Caregivers approached at these events will have the opportunity to sign a contact list that includes their phone number, to hear more information about our study. The study team will then reach out to those caregivers to assess eligibility and confirm interest in participation. We will use our pre-approved brochure for these caregivers.

- We will consider any woman age ≥75 years with a diagnosis of AD or related dementia who has received a mammogram in the past 5 years (but not in the past 6 months) and who does not have a history of breast cancer or documentation in her EMR that she has decided to stop mammography.
- We will approach the primary family caregiver/ informant for each eligible woman. Caregivers will be eligible if they are a caregiver for the patient and intend to accompany the patient to their next primary care visit.

- Rolling enrollment will take place over 36 months with an average monthly enrollment of 11-12 dyads.

Figure 1.



Step 2: Enrollment

- Following eligibility determination and the informed consent process (which includes HIPAA release form), and baseline assessment the dyads will be randomly assigned in 1:1 ratio to one of two groups: mammogram decision aid or home safety guide, stratified by site.

- Decision aid or home safety guide will be mailed to both the patient and the caregiver immediately after randomization but at least 1 week before the index visit.

- Date of the patient's next PCP visit will be obtained via caregiver report at the baseline interview and via EMR review at the time of enrollment.

- For all dyads, the Research Assistant will meet them in person or by phone 0-2 days before the index visit to standardize the process by which all dyads review the decision aid. The pre-index visit assessment (T2) will occur in-person or by phone 30 minutes-2 days before the index visit either at the patient's house, at the caregiver's house, at the provider office or at a location of the dyads choice. Observational data only is collected at this assessment. The RAs will not discuss the content of the decision aid at that time; they will simply ensure that they have read it or have had it read to them before the index visit. We will record if the RA is asked to read the DA to either member of the dyad. If

the dyad has any questions about the content of the decision aid, the RA will encourage them to ask the patient's provider any questions. The phone option script will provide prompts to ensure review of the decision aid during the phone conversation

- If the date of the patient's index visit is not known or not documented in the EMR, the RA will follow the study tracking process to obtain the patient's index visit appointment date. This includes a 2x per month phone call to the caregiver and EMR review (if accessible).
- If the index PCP visit does not occur within approximately six months of the baseline, another provider visit may be substituted with PI permission.

- The post- index visit (T3) will occur in-person or via phone 0-5 days after the index visit.

- The 15 month follow-up (T4) will be in-person or via phone and include an assessment with the caregiver and a review of the patient's EMR. This interview may be audio recorded. In the event we have exhausted the attempts to reach the participant/caregiver by phone or in person, we will send a paper copy of a letter explaining the request to have them complete the survey on paper and return to the research assistant.

- The 24 month follow-up (T5) will include a review of the patient's EMR (only).

- See Table 3 and Figure 1 for a complete list of measures and timing of collection.

Statistical Plan:

Step 1: Overview

- For analysis, we will examine univariate distributions of continuous variables in order to detect any potential violations of assumptions to our planned parametric methods of analyses.

- We will transform variables as needed to ensure normal distribution assumptions are met.

- We will use nonparametric methods if transformations are inadequate.

- Demographic characteristics of the patients and caregivers will be compared between the two groups in order to evaluate if randomization is effectively balanced. We will include caregiver sex as a moderating biological variable and examine the influence of sex on caregivers' decisional conflict and other factors associated with the impact of our decision aid interaction on mammography screening use.

- We will use Chi-squared tests or Fisher's exact tests to compare the frequencies of categorical variables. Analysis of variance (ANOVA), or its nonparametric alternative, the Wilcoxon rank sum test, will be used to compare the distribution of continuous variables between the groups.

- We will use SAS 9.4 for all analyses (SAS Institute, Carey, NC).

Step 2: Primary Aim

- Analysis of covariance (ANCOVA) models will be used to compare mean Decisional Conflict Scale (DCS) scores between the intervention and control groups. For each caregiver, the difference in DCS scores from baseline to follow-up will be used as the dependent variable in the ANCOVA with randomization group assignment as the independent variable adjusting for the stratification variable of recruitment site and for other potential baseline covariates that are found to be significantly different between the two groups in univariate comparisons.

- ANCOVA models will also be used to compare secondary decision quality outcome (e.g., decision-making self-efficacy) at follow-up between the intervention and control groups adjusting for site and other potential baseline covariates found to be significantly different between the two groups in univariate comparisons.

Step 3: Secondary Aim

- A binary indicator variable for receipt of mammograms within 15 months and within 24 months from the intervention date will be used as a secondary outcome variable.

- A logistic model with group (decision aid or control) as the independent variable will be used adjusting for recruitment sites (e.g., EH, IUH and IADC) and other potential baseline covariates found to be different in univariate comparisons.

Step 4: Exploratory Aim

- Once we have tested our hypothesis for the main effects, we will also perform hypothesis-generating exploratory analyses to examine effects in sub-groups of patients and caregivers.

- Hypothesized sub-group analyses will be used for both the primary and secondary outcomes examining the moderating effect of patients' and caregivers' characteristics on decision aid impact.

- The following patient variables will be included in sub-group analyses: age, level of cognitive impairment, number of co-morbidities, and their role in mammography decisions.

- The following caregiver variables will be included in sub-group analyses: relationship to the patient, level of education, health literacy, and perceived burden of mammography for the patient and for them.

- We will include each of these variables in the ANCOVA models for the primary outcome, in the logistic models for the secondary outcome and test for interactions between these variables and intervention group adjusting for recruitment sites and other potential baseline covariates. Significant interaction between a patient/caregiver characteristic variable and group would indicate different intervention effects in the dyad subgroups defined by the variable.

Step 5: Sensitivity analyses for the impact of refusals and other sources of missing data

- We will compare patient/caregiver characteristics between those who complete the follow-up assessments and those who did not. Significant variables detected from these comparisons will be included in the ANCOVA models as covariates to control for potential bias from missing data.

Sensitivity analyses for the impact of refusals and other sources of missing data: Given the short time frame for collecting decision quality measures at follow-up and our pilot data, we anticipate few missing data due to caregiver refusal for the primary and main secondary outcomes. We will compare patient/caregiver characteristics between those who complete the follow-up assessments and those who did not. Significant variables detected from these comparisons will be included in the ANCOVA models as covariates to control for potential bias from missing data. Since the secondary outcome of receipt of mammogram screening will be collected from the EMR, missing data would arise only in cases of patient's death or moving out of state. We anticipate minimum missing data on the analysis of the receipt of mammogram screening.

STATISTICAL POWER

Sample size for the proposed trial is calculated using our pilot data that showed effect sizes of 0.28 on Decision Conflict Scale (DCS) score and 0.34 for self-efficacy scores. To detect effect size of 0.28 or greater on DCS scores between the two groups, we will need to have 202 patient/caregiver dyads per group to complete both baseline and follow-up with 80.2% power using two sample *t*-test at 0.05 level. Allowing 5% missing data at follow-up, we will need to enroll 213 patient/caregiver dyads per group (total 426 dyad baselines). With our planned sample size, we will have 92.6% to detect effect size of 0.34 or greater on changes in self-efficacy scores between the two groups.

The pilot showed the mean DCS were similar between the two groups, the control group had a large SD which should come down with large sample size. Table 4.

Table 4. Baseline DCS scores

Group	N	Mean	Std Dev	Std Err	Minimum	Maximum
Control	8	26.8375	22.6769	8.0175	0	69.0000
Decision support	9	26.4444	16.4249	5.4750	0	45.0000

Change in DCS from baseline to follow-up: DA group had greater decrease in DCS than controls. The current effect size is about 0.55. Table 5.

Table 5. Change in DCS scores from baseline to follow-up, by group

Group	N	Mean	Std Dev	Std Err	Minimum	Maximum
Control	8	5.2000	8.8073	3.1139	-6.0000	21.0000
Decision support	9	9.7778	7.8705	2.6235	0	20.0000
Diff (1-2)		-4.5778	8.3208	4.0432		

TIMELINE

Table 6. Timeline

	Oct 2017				2018				2019				2020				2021				April 2022			
	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
Study Preparation: IRB Modification, hire/train staff	■	■	■	▒	▒																		■	
Recruitment: open new sites, organize by wave per site	■	■	■	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒								■	
Data collection: Enrollment & Baseline assessment	■	■	■	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒								■	
Follow-up assessments	■	■	■	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	■	
Convene DSMB	■	■	■	▒				▒				▒				▒				▒			■	
Data analysis	■	■	■	▒				▒				▒				▒				▒	▒	▒	■	
Prepare abstracts and manuscripts	■	■	■	▒																▒	▒	▒	■	
Disseminate results	■	■	■																	▒	▒	▒	■	

ADVERSE EVENTS REPORTING

The DECAD study has a NIA approved Data Safety Monitoring Plan and a Data Safety Monitoring Board (See the DSMP and DSMB Charter attached). In summary:

The PI will comply with Indiana University IRB and the NIA guidelines for defining, collecting, and reporting serious adverse events, adverse events, and unanticipated problems.

Definitions-This study involves reviewing a paper-based decision aid regarding mammograms and answering questions and does not involve the administration of a medication or medical procedure. While an adverse event is unlikely, it is possible that a subject in this study may experience an adverse event. In our study, a serious adverse event is defined as the following: (1) death; (2) a life-threatening episode requiring immediate intervention; (3) an inpatient hospitalization or prolongation of existing hospitalization; (4) a persistent or significant incapacitation or substantial disruption of the ability to conduct normal life functions; (5) an episode that requires intervention to prevent the above and/or permanent impairment or damage.

Non-serious adverse events are "any untoward or unfavorable medical occurrence in a subject, including any abnormal sign (e.g., abnormal physical exam or laboratory finding), symptom, or disease temporally associated with the subject's participation in the research" that do not meet the definition for serious adverse event.

Unanticipated problems are defined as any incident, experience, or outcome that is unexpected, in terms of nature, severity, or frequency and that may be related or possibly related to the research procedures, or suggests that, as a result of the problem, participants may be at higher risk than previously known or recognized.

Collecting- All adverse events, unanticipated problems and potential risks will be monitored and collected ongoing and throughout the study by the DECAD research assistants and research manager. Monitoring events related to an increased risk that a malignancy of the breast may go undetected or any complications, distress, or pain that arise from receiving a mammogram or as a result of follow-up procedures after a mammogram will be will be done via electronic medical record reviews of study patients' primary care encounter notes, radiology reports, and other documentation on screening/preventive care for breast cancer and from caregiver reports. Events related to any patient and caregiver loss of privacy or confidentiality or fatigue, frustration or distress related to completing the intervention or the outcome questionnaires will be assessed by the research manager via monitoring of the delivery of the study protocols and procedures and by patient and caregiver reports.

For all participants, adverse events will be collected starting at enrollment and continue until after the participant has completed the study. If an adverse event occurs, it will be documented on the NIA adverse event and serious adverse event forms found at https://www.nia.nih.gov/research/dgcg/clinical-research-study-investigators-toolbox/adverse-events. Unanticipated problems, that do not meet the definition of an adverse event, will be documented in a DECAD study log that will be stored in a secure electronic folder behind the IU fire wall. Details in the log may include participant study ID, date that the problem was reported or discovered by the study, a description of the problem, and a corrective plan and measures to prevent reoccurrence.

Measurement and Reporting of Adverse Events- Adverse events associated with reviewing a paper-based decision aid on mammography are infrequent. Therefore, adverse event rates are expected to vary little between the treatment and control groups. Adverse events will be monitored by the research manager on an ongoing basis. All adverse events and unanticipated problems will be reported to the study PI within 24 hours. We plan to present unblinded adverse events data to the DSMB when requested and at scheduled meetings. The NIA adverse event form will be used by the study staff to report all adverse events caused by the intervention.

In the case of a participant death, the NIA Program Official, the IU IRB and the DSMB Chair will be notified within 24 hours using NIA standardized forms for reporting serious adverse events (noted above). If unanticipated, serious adverse events occur (i.e., not listed in the Data and Safety Monitoring Plan) and that are related to the intervention, they will be reported to NIA Program Official, the IU IRB, and to the DSMB Chair within 48 hours of study's knowledge of the event using NIA standardized forms for reporting serious adverse events. In cases where there is any question regarding the level of an adverse event or attributable cause, or areas of uncertainty, the DECAD Study Team will consult with the DSMB and IU IRB. Further details are provided in the DECAD DSMB charter. The summary of all other adverse events and unanticipated problems should be reported to NIA Program Official and to the DSMB quarterly, unless otherwise requested by the DSMB.