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Cardio Pulmonary Resuscitation Decisions in Nursing Home Residents

Melissa S Bennett MS, APRN, GCNS, LNHA

Submitted in partial fulfillment for program requirements
for Doctorate of Nursing Practice
Wright State University / University of Toledo

Abstract

Objective: Cardiopulmonary resuscitation (CPR) performed on nursing home residents, consistently demonstrates poor outcomes with less than 5% survival rate (AMDA, January 30, 2011). Study participants overestimate CPR survival based on television and lack of accurate information (Adams & Snedden, 2006; van Mil et al., 2000). This project evaluated use of a video decision tool on CPR choices in nursing home residents over three months.

Methods: A CPR video decision tool was added to advance care planning discussions as an audiovisual component to educate nursing home residents and their decision makers. Nurse Practitioners (NPs) documented the resident's choices in the electronic health record (EHR). Clinical metric reports, based on the EHR, were used to measure the change in CPR decisions over three months in seven nursing homes.

Significance: Health care spending is disproportionate at the end of life—30% of Medicare expenditures are attributed to 5% of beneficiaries who die annually and 78% of costs are incurred in the final 30 days of life (Yu, 2008). Studies indicate a reduction in hospitalizations by increasing the use of advanced directives, surrogate decision makers and do not resuscitate decisions (Levy, Morris & Kramer, 2008; Molloy et al. 2000; and Nicholas, Langa, Iwashyna & Weir, 2011). Integration of a CPR video tool (Nous Foundation, 2010) into advance care planning, has the potential to reduce hospitalizations and health care costs, and ensure end of life care is consistent with resident wishes (Aw et al., 2012).

Results: The mean percentage change following implementation of the CPR video tool was 5.5% with $p=.226$. One facility closed during the pilot, one facility with a new NP showed an increase in residents requesting CPR and one of the eight facilities showed no change. The decrease in residents requesting CPR was not statistically significant following integration of the CPR video tool. Despite the lack of statistical significance, a 5.5% reduction in residents selecting CPR with an equivalent reduction in hospitalizations would reduce medical expenses by \$56,987.

Keywords: CPR; Nursing Home; Video Decision Tool

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Problem Statement

The public, as health care consumers, and clinicians, as health care providers, are dissatisfied with the current state of health care. Escalating cost, without demonstrated improvement in patient satisfaction and outcomes, is a frequent criticism of the health care system. Health care spending at the end of life is disproportionate--30% of Medicare expenditures are attributed to 5% of the beneficiaries dying annually (Yu, 2008). End of life discussions with physicians reportedly reduce medical expenses in the last week of life by \$1041 per patient (Zhang et al., 2009). Yet, life-sustaining treatments in the final 30 days of life account for 78% of the total health care costs incurred during the last year of life (Yu, 2008) and only 17% of AARP respondents indicate having had a discussion about end of life decisions with their health care provider (HCP) (Nous Foundation, October 21, 2011).

This lack of advance directives leads to more aggressive treatment than may have been desired by the individual due to liability concerns by the provider thereby leading to an increase in health care costs (Duke, Yarbrough & Pang, 2009; Nicholas et al., 2011). Advance directives are strongly associated with receiving medical care that is closely aligned with individual's stated wishes according to Silveira, Kim and Langa (2010). Clinicians report feelings of moral distress at providing care that they think inappropriate at end of life (Storch, 2006) including cardiopulmonary resuscitation (CPR) in situations that appear futile. Lazaruk (2006) questions why we are compelled to provide CPR with a "never give up" mindset and we fail to provide a respectful and dignified death. Gordon (2003) questions if the only "modus exitus" is failure to survive CPR!

CPR performed on long term care residents, has been consistently shown to have poor outcomes with less than a five percent survival rate and several studies showing no survival (American Medical Directors Association, January 30, 2011). Lee, Angus and Abramson (1996) reported the cost of CPR for six month survivors ranging from \$344,314 to \$966,759 and conclude that while appropriate CPR is encouraged, blanket application appears extremely expensive. However, CPR continues to be considered a standard of care and is provided to everyone unless they have declined it through a Do Not Resuscitate (DNR) order (Adams & Snedden, 2006; Gordon, 2003). Although the chance of surviving CPR is extremely low, nationally 60% of nursing home residents are considered full codes or should receive CPR when their heart stops (Messinger-Rapport & Kamel, 2005). The organization implementing the proposed intervention fares better than the national statistic with 36.7% of residents requesting CPR. That metric still represents a significant opportunity to improve the provision of care to nursing home residents so that health care interventions correspond to their wishes, as well as to provide for a respectful and dignified death at the end of life, and reduce medical expenses. The public misconception that CPR is routinely successful has been fueled by television and inaccurate clinical information (van Mil et al, 2000; Adams & Snedden, 2006; Gordon, 2003). Several studies have shown that nursing home residents who have advanced directives and DNR orders experience fewer hospitalizations, which reduces health care costs, with no change in mortality (Levy, Morris & Kramer, 2008; Lopez, 2009; Molloy et al., 2000; Nicholas et al., 2011; Ouslander & Berenson, 2011). Recognition of this opportunity to improve end of life care and decrease

medical expenditures for nursing home residents, led to the development of the question of study.

PICOT Question

Do nursing home residents and their decision makers (P) who use a CPR video decision tool (I), compared to nursing home residents and their decision makers who do not use the CPR video decision tool (C), choose CPR less frequently (O) during a three month study (T)?

Summary

The proposed integration of a video CPR decision tool into the existing advance care planning discussions between the nurse practitioners, nursing home residents and their decision makers is projected to reduce the number of residents requesting CPR to less than the current 36.7% as a primary direct outcome measurement.

Theoretical Framework—Organizational Process Change

The Rosswurm and Larrabee (1999) model for evidence-based practice change emphasizes organizational process change which is applicable to this project as it would involve implementation of a practice guideline within the institutional special needs plan (ISNP) program through the nurse practitioners (NPs) managing the health care of members by working with physicians, nursing home staff and family members.

Step 1: Assess for need: The ISNP program metrics indicate that CPR is desired by 36.7% of patients versus 60% of nursing home residents nationally (Messinger-Rapport & Kamel, 2005). While this metric compares favorably to the research--it still indicates an opportunity for improvement. Stakeholders include

program and corporate leadership, NPs, nursing home staff, residents and families. These metrics are reviewed quarterly and interest exists in driving improvement.

Step 2: Locate evidence, plan and conduct search: A total of 16 studies including 1 systematic review, 4 Level II randomized controlled trials (RCTs), 1 Level III nonrandomized study and 10 qualitative studies met inclusion criteria—published after 2000 and focused on nursing home residents' CPR decisions and interventions to impact those CPR decisions.

Step 3: Analyze the evidence: The strongest evidence involves a CPR video decision tool in conjunction with advanced care planning discussions. The ISNP program already includes advanced care planning discussions monthly and the CPR video decision tool will be added based on the evidence from the literature.

Step 4: Practice change: The CPR video decision tool will be added to the current advanced care planning discussions that occur monthly between the NP and the nursing home resident or decision maker. The discussion and decisions regarding CPR will continue to be documented in the EHR. This documentation system provides for reporting metrics to evaluate outcomes that do not identify residents individually—only as a composite facility calculation.

Step 5: Implement and evaluate: Six nursing homes with the highest rates of residents requesting CPR have been identified and the new guideline will be implemented. Initiating the project in a smaller subset of nursing homes (six) will ensure all the details of the process are functional. NPs are already allocated time for advance care planning discussions which are lengthy, so additional labor time is not anticipated. The CPR video decision tool will be shown to nursing

home residents and decision makers via the NP's laptop computer. The CPR video decision tool may be accessed through the internet or it may be downloaded on the laptop if connectivity to the internet is problematic. All NPs would need extended-life batteries to support this function at \$70 per battery. Initially, three NPs will need the batteries for a total cost of \$210. Licensing costs for use of the video are \$1000 for the first quarter and \$1500 for the remainder of the year (April through December 2012). The average cost of a hospitalization in this ISNP program is \$8015 and two studies (Levy, Morris & Kramer, 2008; and Molloy et al., 2000) demonstrate reduced hospital admissions through advance care planning and DNR orders. The potential exists to decrease health care costs through the use of this CPR video decision tool. Outcomes will be measured through the percentage of residents requesting CPR. This metric is reported on the quarterly clinical indicator reports by nursing home as a reporting function from the EHR where the NPs document CPR decisions.

Step 6: Integrate and maintain: The clinical indicator reports provide metrics for CPR by nursing home, ISNP program and nationally so outcomes can be measured, compared and the information disseminated to the NPs during monthly staff meetings and to other stakeholders during quarterly business reviews. Additional nursing homes will be evaluated for inclusion in the project after the first quarter. National stakeholders are considering implementation across the country dependent on the results achieved in the initial ISNP implementation.

Theoretical Framework—Decision Making

Janis & Mann's (1977) decisional conflict is a useful theory in examining end of life decisions, decision making by surrogates, and medical treatment decision making. The basic tenets of decisional conflict theory include: Hot and cold decisions; vigilant information processing; coping patterns; outworn decisions; and the balance sheet decision making tool. Hot and cold decisions are described as situational in nature and stressful—decisions that must be made in the 'heat of the moment' and there is little time for investigation and reflection or there is significant weight attached to the outcome of the decision. Conversely, cold decisions are not emotional or immediate and are not stressful. Vigilant information processing refers to the process an individual uses to make decisions including obtaining information, discussions with others, other viewpoints and attaching weight to various aspects. Vigilant information processing is associated with high satisfaction in the ultimate decision. Coping patterns are reflected in perception of risk associated with the decision and consideration of possible outcomes. Outworn decisions no longer reflect the situation or current realities and must be reevaluated. Janis and Mann's (1977) balance sheet decision making tool incorporates assessment of all alternatives available including positive and negative associations for the self, others and community. This theoretical framework underscores the use of the CPR video decision tool as a component of vigilant information processing which may lead to improved satisfaction with the decision.

Evidence

Databases searched included Cumulative Index of Nursing and Allied Health Literature (CINAHL), PubMed, Medline, and the Cochrane Database of Systematic Reviews (CDSR). These databases were selected as they provided a wide representation of different journals covering many disciplines. This method provides for an exhaustive literature search on the topic and was completed in March 2011 and updated again in October 2011 and August 2012. Key words searched were: CPR and decision aid; decision aid; decision tool; older adult; geriatric*; CPR; CPR and elder*; CPR and age group; decision aid and elder*; decision aid and code; end of life and CPR; end of life and CPR and decision aid; and advance directive was added at the guidance of one member of the project team.

Initially English language was set as a limit but this was removed following the guidance of one member of the project team, however, no studies requiring translation were identified for inclusion. (Refer to Appendix A for literature search tables).

Inclusion criteria were defined for the literature search as publication date 2000 or later and the topic related to the question of study: CPR decision aid for nursing home residents or surrogate decision makers for nursing home residents, and advance directives. As the project evolved and the evidence was analyzed, advance directive studies were excluded. These studies provided excellent background information but the CPR studies were more directly related to the question of study. Therefore, exclusion criteria were defined as studies published prior to 2000 and studies not directly related to the question of study.

Studies of CPR based on arrests or protocols in the acute care environment were excluded as this literature review focused on nursing home residents—a different population of interest. Details of studies included and excluded are available in Appendix B.

Organizational Assessment

The organizational needs assessment indicates it is “ready to go” based on Melnyk and Fineout-Overholt’s *Organizational Culture and Readiness for System-Wide Integration of Evidence-based Practice Survey* (2011, p 559). This completed tool is available in Appendix C. The organization clearly subscribes to evidence-based practice and it is supported at the senior operational leadership level, the medical directors and this particular program employs only advanced practice nurses—NPs, so even at the staff level, there is engagement and support for research and implementation of research-based findings. Fiscal support is available for workshops, conferences and continuing education. Work time can be used to research and develop projects. The Center for Nursing Advancement is led by a doctorally prepared nurse researcher and three other nurses within the corporate leadership are doctorally prepared. Due to the nature of the “staff” all being NPs, all of the leadership team are also Master’s prepared nurses. The only item on the needs assessment that is absent in this organization is the librarian support, but subscriptions to *Up to Date* are paid for by the organization so access is not an issue. Dissemination of research is supported through publications, presentations and poster presentations. Conference fees, travel and hotel stays are also reimbursed by the organization.

Therefore, the development and implementation of an evidence-based project within this organization is supported and encouraged.

The internal project sponsor and stakeholder is the Chief Nursing Officer (CNO). The proposal was presented during a quarterly business review as a method to better align nursing home residents end of life wishes with care, as well as to reduce hospital admissions by overcoming misperceptions about the success of CPR. The CNO described it as “benevolent assault” and there was widespread agreement among senior leadership that decreasing the residents requesting CPR had the potential to decrease hospital admissions without impacting mortality (Molloy et al., 2000; Ouslander & Berenson, 2011). This ISNP program is funded by Centers for Medicare Services (CMS) and is paid a monthly fee based on the diagnoses of the resident. This monthly reimbursement must be managed to cover all medical expenses incurred by the resident. The ISNP program is at risk so if medical expenses exceed the monthly reimbursement, the ISNP program absorbs the additional medical expense. Reduced medical expense is the key driver for the ISNP program stakeholders. The key driver for the NP and nursing home staff stakeholders is the alignment of care with resident wishes. Caregivers experience moral distress in providing CPR to residents with little likelihood of surviving and not providing a dignified death (Lazaruk, 2006). The key drivers for nursing home residents and their decision makers are autonomy in making those decisions and alignment of end of life care choices with the provision of that care (Aw et al., 2011). Identifying all stakeholders and the key drivers specific to each group is critical to

the successful development and implementation of the CPR video decision tool project.

Barriers to implementation could be lack of resident or decision maker participation in CPR discussions and advance care planning. The absence of an identified decision maker for residents who lack decisional capacity is also a barrier. Collaboration with the social worker may be a method to overcome this barrier and locate a suitable decision maker. The perceived time commitment by NPs to show the CPR video decision tool during the advance care planning discussion, which is 2 minutes 33 seconds, could be a barrier as well as reluctance to introduce a video into the conversation. This could be overcome with education on evidence to support use of a video decision tool. The subscription for access to the CPR video is being negotiated, but connectivity to the internet to access the web-based version could be a barrier in some nursing homes. A strategy to overcome the connectivity issue could be downloading the video to the NP's laptop so that internet connectivity is unnecessary. Dr. Volandes suggested this approach for the implementation of the CPR video decision tool.

Cost benefit analysis includes the expense of the CPR video decision tool subscription which is \$1000 for the first quarter, followed by \$1500 for the remainder of 2012 (Appendix D and Appendix E). The subscription cost of the video is based on the number of lives covered by the ISNP. The cost of the extended life batteries for each of eight NPs is \$70. The total expenses to start are \$1,570 for the initial 90 day period which includes \$10 for mailing. One hospital admission averages \$8,015 for the ISNP program. The cost associated

with the project implementation is only a fraction of the medical expense saved if even one hospitalization is avoided. There is not additional labor required as time for advanced care planning discussions is already planned into the NPs' work day.

Critical Appraisal of Evidence

Twenty studies were selected including one identified through a hand search of references cited in selected articles and listed in Table 1 with levels of evidence (see detailed Research Evaluation Table Appendix F).

Table 1 Critical Appraisal of Evidence

Level 1	Level II	Level III	Level IV	Level V	Level VI	Level VII
1	4	2	6	1	6	0

One guideline was located but was not included following evaluation of the protocol using the AGREE tool (Table 2). The protocol *Interventions for Promoting the Use of Advance Directives for End-of-Life Decisions in Adults* (Simon-Lorda et al., 2008) was evaluated using the AGREE tool (Table 2) with scoring based on 4=strongly agree and 1=strongly disagree.

It is an outline of what is to be done to establish the protocol but there are no actual guidelines despite being published in 2008 and re-evaluated in October 2011 with the same results. This was also confirmed with the librarian as the lack of results and recommendations was surprising.

Table 2 AGREE Guideline Evaluation of Promoting the Use of Advanced Directives for End-of-Life Decisions in Adults:

Dimension	Score	Comments
1. Overall objective specifically described	4	Assess effects of interventions for promoting use of advance directives about end-of-life decisions of adults
2. Clinical question described	3	Conceptual & historical background described
3. Population	4	Adults—not specifically over 65 yr or nursing home residents
4. Development group includes representatives from all stakeholder groups	1	It is an incomplete protocol at this point in time and this was not addressed
5. Patients' views and preferences sought	4	Four organizations had submitted consumer-oriented feedback and plans were described for obtaining more
6. Target users defined	1	It is an incomplete protocol at this point in time and this was not addressed
7. Guideline piloted	1	It is an incomplete protocol at this point in time and this was not addressed
8. Systematic methods used to search for evidence	4	Plan was described in detail
9. Criteria for selecting evidence clearly described	4	Selection criteria described in detail
10. Methods for formulating recommendations clearly described	2	Method for data extraction, data analysis, data management and risk bias described in detail but no actual recommendations
11. Benefits, side effects and risks considered	2	Protocol is incomplete but historical background included some considerations
12. Explicit link between recommendations and supporting evidence	1	No recommendations-- It is an incomplete protocol at this point in time and this was not addressed
13. Guideline externally reviewed by experts	1	It is not yet published
14. Procedure for updating guideline discussed	1	It is an incomplete protocol at this point in time and this was not addressed
15. Recommendations are specific and unambiguous	1	There are no recommendations at this point in time.
16. Different options for management of condition are clearly presented	1	It is an incomplete protocol at this point in time and this was

		not addressed
17. Key recommendations are clearly identifiable	1	It is an incomplete protocol at this point in time and this was not addressed
18. Guideline is supported with tools for application	1	It is an incomplete protocol at this point in time and this was not addressed
19. Organizational barriers are discussed	2	Barriers are discussed only from an historical perspective
20. Cost implications are considered	2	Cost is considered from an historical perspective
21. Guideline presents key review criteria for monitoring or auditing purposes	1	It is an incomplete protocol at this point in time and this was not addressed
22. Guideline is editorially independent from the funding body	1	It is an incomplete protocol at this point in time and this was not addressed
23. Conflicts of interest of guideline development members is disclosed	4	None known
Overall Assessment: Would not recommend but would consider in the future when completed		Although published in 2008, the protocol is an outline of what <i>is</i> to be done and is not the actual protocol at this point. This was confirmed with the nursing librarian since due to time lapse, lack of concluding recommendations was surprising.

One systematic review was identified in the literature review. The Rapid Critical Appraisal of Systematic Reviews of Clinical Interventions / Treatments (Fineout-Overholt, & Melnyk, 2005) (Table 3) was completed on Ramsaroop, Reid and Adelman's 2007 publication, *Completing an Advance Directive in the Primary Care Setting: What Do We Need for Success?*

Table 3: Rapid Critical Appraisal of Systematic Reviews

The Rapid Critical Appraisal of Systematic Reviews of Clinical Interventions / Treatments	
1. Are the results of the review valid?	Yes
a. Are the studies in the review randomized controlled trials?	Most--12 of 18 RCTs; 2 quasi-experimental, 2 prospective trials & 1

	observational study
b. Does the review include a detailed description of the search strategy to find all relevant studies?	Yes, search is detailed with inclusion & exclusion criteria
c. Does the review describe validity of individual studies?	Yes, validity of individual studies was addressed
d. Were the results consistent across studies?	Yes, based on intervention, i.e. mailed information to patients had no effect but all studies with additional discussion / meeting / visit had positive results
e. Were individual patient data or aggregate data used in the analysis?	Aggregate data was used
2. What were the results?	Moderately positive w/ minimal risk
a. How large is the intervention or treatment effect?	Moderately positive—5 studies achieved effect sizes $>.5$ but $< .8$; 1 study had effect size 2.48 (VA group intervention study) Effect size 1.15 for pool
b. How precise is the intervention or treatment (CI)?	Not very precise--CI was 95% but wide range $.52 - 1.77$
3. Will the results assist me in caring for my patients?	Yes
a. Are my patients similar to the ones included in the review?	Yes—adults age ≥ 18
b. Is it feasible to implement the findings in my practice setting?	Yes—discussions between HCP & patient over multiple visits
c. Were all clinically important outcomes considered, including risks and benefits of the treatment?	Yes, outcomes were considered
d. What is my clinical assessment of the patient and are there any contraindications or circumstances inhibiting me from implementing the treatment?	Emotional instability could be a contraindication but over multiple visits could be overcome
e. What are my patient's and family preferences and values about the treatment under consideration?	Assessed per discussion

(Fineout-Overholt, & Melnyk, 2005)

Synthesis of Evidence

CPR is a primary component of advance directives so many studies examined interventions leading to the outcome of the completion of an advanced directive. Ramsaroop, Reid and Aldelman (2007) published a systematic review and meta-analysis which examined 18 studies demonstrating moderately successful interventions to increase the completion of advanced directives involving multiple patient / health care professional (HCP) interactions over a period of time (unadjusted pool effect size was 0.50; 95% CI=0.17-0.83). They also concluded that simply distributing written material did not increase the completion of advanced directives which is commonly the method employed in nursing homes.

Three of four Level II randomized control trials (RCTs) were conducted by Dr. Angelo Volandes, MD, with various co-authors. Two additional Level III studies were also conducted by Dr. Volandes, MD, but lacked randomization in the methodology. The format for the RCTs included a narrative presented by a trained researcher followed by a short video segment of two to six minutes. The sample sizes ranged from 14 to 200 and included rural and suburban populations.

Volandes et al. (2012) found that decisions regarding CPR and the use of ventilation in poor prognosis cancer patients changed significantly after viewing a video decision aid. Seventy-one percent of study participants wanted CPR prior to viewing the video decision aid compared to 62% following ($p=.03$). Eighty percent of study participants wanted ventilation compared to 67% after viewing the video decision aid ($p=.008$). The study noted patients perceived an

increased knowledge of goals of care and likelihood of resuscitation after viewing the video ($p < .001$). Despite the decisions voiced by these study participants, only 5% had documented do-not-resuscitate orders in the medical record (kappa -0.01; 95% CI -0.06 to 0.04).

Volandes et al. (2011) demonstrated the video group was more likely to select comfort care measures (odds ratio 3.9, 95% CI=1.0-15.1). This study also indicated greater health literacy was positively correlated with increased selection of comfort care.

Volandes, Barry, Chang and Paasche-Oslo (2010) demonstrated in a nonrandomized controlled trial that use of a video decision aid reduced uncertainty as measured for decisional conflict and the impact was greater for those with lower health literacy ($p < .0001$). Decision making was shown to be more stable over time with the video intervention group--6% change at 6 weeks versus the non-video group with 29% change, $p < .001$ (Volandes, Paasche-Oslo, et al., 2009).

Volandes, Mitchell, Gillick, Chang, and Paasche-Oslo (2009) examined concordance between the patient and surrogate decision maker in a subgroup of an ongoing study ($n=14$). Concordance was 33% in the non-video group compared to 100% in the video group. The researchers also assessed acceptability of the video as an intervention with positive results--94% would recommend the video to others (Volandes, Mitchell et al., 2009) and 31/33 found the video very or somewhat helpful with 32/33 recommending it to others (Volandes, Mitchell et al., 2009).

The Let Me Decide (LMD) advance directive program was the intervention in a RCT by Molloy et al. (2000) in Ontario. This study demonstrated a 49% completion rate of advance directives by decisional residents of nursing homes and 78% completion rate by families of residents who were not decisional. Molloy et al. (2000) found no statistical difference in satisfaction between the group completing advance directives and the group not completing advance directives. This study demonstrated fewer hospitalizations in the intervention group—0.27 hospitalizations compared to 0.48, $p=.001$, reduced utilization of services with no change in satisfaction or mortality ($p=.20$) and reduced resource cost ($p=.01$) (Molloy et al., 2000).

Regional variation in the use of advance directives and Medicare end-of-life expenditures was examined through a retrospective observational study by Nicholas, Langa, Iwashyna and Weir (2011). Hospital regions were grouped into high, medium and low spending, although details were not provided as to how groups were divided. Advanced directives specifying limitations for end-of-life care significantly reduced medical expenses by \$5585 per decedent (95% CI - \$10903 to -\$267) in high regions, but did not demonstrate an impact in medium or low spending regions (Nicholas et al., 2011). Advanced directives were also associated with less likelihood of dying in a hospital in both high (-9.8%; 95% CI= -16% to -3%) and medium spending regions (-5.3%; 95%CI=-10% to -0.4%) (Nicholas et al., 2011). Advanced directives were associated with higher hospice use in high- and medium-spending regions (17%; 95% CI= 11% to 23% in high spending regions; 11%; 95% CI= 6% to 16% in medium spending regions), but not in low-spending regions (Nicholas et al., 2011).

Two studies followed a quality improvement effort to increase completion of advanced directives. Levy, Morris and Kramer (2008) implemented Making Advance Planning a Priority (MAPP) and compared one year before and one year after the project implementation. This program included identifying residents at 50% or greater risk of death in the following twelve months, and notifying the physician via fax and chart flag. The physician had four options to respond: End-of-life needs had already been addressed and the date of the progress note documenting that; state it would be addressed on the next visit and give the date of the visit; refer the resident for a palliative care consult; or refer the resident for a hospice consult. This intense follow-up resulted in an additional eighteen advanced directive completions. The results of this quality improvement project included a significant reduction in residents dying in the hospital from 48.2% to 8.9% ($p=.0001$), 100% of residents dying after the project implementation had advanced directives executed, and an increase in DNR from 63% to 84.4% ($p=.003$) (Levy, Morris & Kramer, 2008). No discussion of reduced health care costs was included but a reduction in residents dying in the hospital obviously reduces health care expenditures in an already over-burdened system.

McBee, Burack, Carter and Chichin (2000) published the results of a quality improvement project designed to increase the completion of advance directives on three units of a New York City nursing home. They demonstrated the majority of families made decisions with four or fewer contacts; 80% decided within one month of contact and 40% of families made decisions at the time of

contact (McBee et al., 2000). This publication did not indicate if the resident was decisional and only described the contact as a phone call.

Frank, Pichora, Suurdt and Heyland (2010), Sudore and Fried (2010), and Johnson and Nelson (2008) all demonstrated increased completion of advanced directives through multiple discussions between health care providers and patients. Sudore and Fried (2010) focused on selection of a decision maker as the advanced directive criteria while Frank et al. (2010) focused on CPR decisions. Johnson and Nelson (2008) included a written material with the discussions.

One study reported 90% of subjects thought advanced directives made it easier to ensure that end-of-life wishes were followed (Matzo, Hijjazi & Outwater, 2008) and two studies indicated alignment of care with the patient's preference was improved through an advanced directive (Silveira, Kim & Langa, 2010; Anderson, Sikorski & Finucane, 2006).

Barriers to completing an advanced directive included lack of time or completion not being a priority and lack of knowledge or denial of health status knowledge (Aw et al., 2012; Barnes, Jones, Tookman & King, 2007; Fried et al., 2010; Jezewski & Meeker, 2005). Thorevska et al. (2005) described subjects who had completed a living will as more likely to be white, Protestant and highly educated. Messinger-Rapport and Kamel (2005) described age ($p=.017$) and race ($p=.011$) as the only predictors for completion of a DNR. Hirschman, Abbott, Hanlon, Bettger and Naylor (2012) identified predictors of having a living will as using long term care services in assisted living ($OR=5.01$, $p<.001$), white ($OR=2.87$, $p<.001$), greater than 12 years of education ($OR=2.50$, $p<.001$) and

having experienced a significant change in health status in the previous six months (OR=1.97, $p=.007$). They also identified predictors of having a health care power of attorney as receiving long term care services in an assisted living (OR=4.66, $p<.001$), greater than 12 years of education (OR=1.74, $p=.022$) and having experienced a significant change in health status in the previous six months (OR=1.61, $p=.037$) (Hirschman et al., 2012). Thorevska et al. (2005) found 80% of African American patients were more likely to “not trust the doc” and want all life-sustaining measures, and Hispanics were 2.5 times as likely as nonHispanics to prefer all life-sustaining treatments. The prevalence of DNR ranged from 40% to 71% (Adams & Snedden, 2006; Anderson, Sikorski & Finucane, 2006; Hirschman et al., 2012; Levy, Morris & Kramer, 2008; Matzo, Hijazi & Outwater, 2008; Messinger-Rapport & Kamel, 2005).

Dipko, Xavier and Kohlwes (2003) studied 13,913 VA patients using a group education intervention in which 203 subjects participated. While their conclusion was that group education was twice as effective as individual sessions and less time-consuming, the fact that only 203 chose to participate of 13,913 patients (1%) was not discussed.

A knowledge deficit was noted to be a factor in the lack of advance directives and DNR decisions. Several studies indicated subjects over-estimated the success of CPR (van Mil et al., 2000). Laakkonen, Pitkala, Strandberg, Berglind and Tilvis (2005) studied 220 elderly, community-dwelling subjects in Finland—40% presumed the outcome of CPR to be good or moderately good, and 52% estimated the outcome as better than those subjects refusing CPR (Laakkonen et al., 2005). Adams and Snedden (2006) surveyed 100 patients

and 81% of the subjects believed the chances of surviving CPR and leaving the hospital were greater than 50% and 23% thought the chances were greater than 90%! Studies have shown the survival rate less than 5% with several studies reporting no survivors (American Medical Directors Association, January 30, 2011). Television was determined to be the primary method of obtaining information related to advance directives and CPR (Adams & Snedden, 2006; Cherniack, 2002; and Van Mil et al., 2000) while only 7% involved a physician in the development of advance directives (Thorevska et al., 2005).

Physician consensus with patient advance directives was examined by Levi, Heverley and Green (2011) by studying physician decision making with 19 patients who had created advance directives using a computer-based decision aid. Three physicians made five or six clinical decisions in simulated end-of-life scenarios based on the patient's advance directive. The computer-based decision aid resulted in 84% consensus between patient wishes and physician treatment orders (Levi, Heverley & Green, 2011). Consensus on the use of mechanical ventilation was 82% and the use of CPR was 75% (Levi, Heverley & Green, 2011).

The content of the advance care planning discussion and CPR choices was studied by Mallery, Hubbard, Moorhouse, Koller and Eeles (2011) in a qualitative interview design with 28 physicians. They concluded that there is wide variation in the content of the discussion--that 75% of the physicians did not contextualize the CPR decision within the individual's situation or illness burden; 79% did not check the patient's understanding; 82% did not inquire about

existing advance directives and 96% did not comprehensively discuss illnesses with life expectancy (Mallery et al., 2011).

The literature review supports the use of a video decision tool as an enhancement to routine advanced care planning discussions between the NP, resident and decision maker(s) leading to decreased selection of CPR (increased selection of DNR).

Recommended Practice Change

The recommended practice change integrates individual presentations of the CPR video decision tool as part of the advance care planning discussion between the NP and the resident or decision maker(s). The NP reviews the advance care plan at least monthly with residents and / or their decision maker as part of the ISNP program. The NP would show the CPR video decision tool on their laptop as part of the individual discussion, answer questions, further educate around the individual's specific health conditions and discuss the impact of CPR within the individualized advance care plan. The NP will document discussions and decisions in the EHR. Outcomes will be measured through the clinical indicator studies (CIS) which summarize CPR status as a percentage by facility from the EHR. This can be compared to the percentage of residents choosing CPR before and after the intervention.

Scope

Disease / Condition: CPR decision making in nursing home residents

Clinical Specialty: Geriatrics, Family Practice, Psychology, Internal Medicine

Intended Users: Physicians, Advanced Practice Nurses, Physician Assistants, Nurses, Social Workers, Psychologists

Objective: Decrease the number of residents in nursing homes requesting CPR and improve alignment of end of life decisions with the provision of desired care

Target Population: nursing home residents enrolled in the ISNP program

Table 4: Recommendations with Level of Effectiveness

Statement of Recommendation	Reference(s)	Level of Effectiveness
Facilitate multiple advance care planning discussions with patients and decision makers regarding completion of advance directives	Ramsaroop, Reid & Adelman (2007) Level I VanMil, et al (2000) Level VI Laakkonen et al (2005) Level VI Levy, Morris & Kramer (2008) Level IV McBee & et al (2000) Level VI Sudore & Fried (2010) Level V Dipko, Xavier & Kohlwes (2003) Level IV	A1
Utilize video decision aid to assist explanation to patient & family	Volandes, Paasche-Oslo, Barry, Gillick, Minaker, Chang, Cook, Abbo, El-Jawahri, & Mitchell (2009) Volandes, Mitchell, Gillick, Change, Paasche-Oslo (2009) Volandes, Barry, Chang, Paasche-Oslo (2010) Volandes, Ferguson, Davis, Hull, Green, Chang, Deep, Paasche-Oslo (2011) Volandes, Levin, Slovin, Carvajal, O'Reilly, Keohan....Noy (2012)	A2

Level of effectiveness key: A1=evidence from meta-analysis or systematic review; A2=evidence from RCT; B1=evidence from high quality evidence-based practice guideline; B2=evidence from quasi-experimental studies; C1=evidence from observational studies; C2=inconsistent evidence from observational or controlled trials; D=evidence from expert opinion, case reports or national consensus reports.

Applicability

The project proposal to integrate the video CPR decision tool into the existing advance care planning discussions between nursing home residents / their decision makers and the NP is supported by the existing evidence (Table 5, Evidence Synthesis). The evidence indicates the project proposal can lead to a reduction in the percentage of residents choosing CPR.

This proposal has the potential to also indirectly reduce medical expenses as studies indicate that nursing home residents who have selected DNR have fewer hospitalizations with no change in mortality (Molloy et al., 2000; Ouslander & Berenson, 2011). There is strong stakeholder support for implementation of the project and the initial expense is minimal compared to the average cost of hospitalizations. Benefits to the nursing home resident include autonomy to make decisions and improved alignment of care provided with care desired, as well as improved understanding of the actual outcomes of CPR. Risks include the perception that CPR should not be provided solely due to costs or as a form of ageism. There is a significant lack of understanding that CPR is rarely successful in nursing home residents because of the underlying chronic illnesses that precipitate the need to live in a nursing home, and that biological age is a more sensitive indicator than chronological age for effectiveness of CPR. The CPR video decision tool has been studied in nursing home residents and has been well-received. It can be an audiovisual tool in the NP's arsenal of educational interventions.

Table 5: Evidence Synthesis—CPR Interventions

Studies Interventions	Ramsaroop	Volandes, Paasche-Oslo 2009	Volandes, Mitchell 2009	Volandes, Barry 2010	Volandes, Ferguson 2011	Volandes, Levin 2012	Molloy, et al 2000	Johnson & Nelson 2008	Frank, Pichora, et al 2009
Video decision tool		X	X	X	X	X			
Discussion w/ Health Care Professional individually	X	X	X	X	X	X	X	X	X
Discussion w/ Health Care Professional in group									
Written material w/ discussion	X							X	X

Evidence Synthesis Table CPR Interventions--Continued

Studies Interventions	Laakkonen et al 2005	Levy, Morris & Kramer 2008	McBee, et al 2000	Sudore & Fried 2010	Barnes et al 2007	Dipko, Xavier & Kohwles 2003	Mallery, Hubbard, et al 2011	van Mil et al 2000
Video decision tool								
Discussion w/ Health Care Professional individually	X	X	X	X	X	X	X	X
Discussion w/ Health Care Professional in group						X		
Written material w/ discussion		X						

Project Implementation

It is critical to success of the project that stakeholders are identified early and involved throughout the process (Melnik & Fineout-Overholt, 2011). The best evidence-based project cannot be successful without achieving actual implementation and that cannot be accomplished in a vacuum.

The population of interest is identified as residents in nursing homes that currently use the ISNP program. This criterion eliminates from this project residents who are not involved with the ISNP program in a nursing home. This was stipulated based on the organization implementing the protocol and is in alignment with the literature. The practice setting is defined by the population of interest—nursing home residents—which is the location that the ISNP provides medical care to the residents. Resources have been identified through the stakeholders and strong support has been secured for the project including expansion after the first quarter and the possibility of national implementation based on outcomes. Funding for the video and laptop batteries is supported by the ISNP program. The CNO has verified that the university IRB process is sufficient for the organization and no other approval is required. All applicable privacy regulations and long term care requirements apply as they do currently within advanced care planning and CPR discussions. No additional legislative oversight is incurred with the addition of the CPR video decision tool. Contracting for access to the CPR video has been completed with Dr.Volandes and the Nous Foundation, as well as the invoices have been submitted for payment.

Outcomes will be measured as the percentage of residents requesting CPR as documented in the EHR. This metric rolls up into the Clinical Indicator Reports quarterly

and does not include individual resident names—only the facility name is provided for evaluating trends. The current metric is 36.7% of residents in the ISNP program have selected CPR. The protocol will be considered successful if the metric is lower than 36.7% for the program. Secondary outcomes could be a reduction in hospitalizations and a reduction in medical expenses. Those metrics are also impacted by many other variables and are indirect measurements. Therefore, the most direct measurement will be used to evaluate the outcome—the percentage of residents requesting CPR.

A 90 day timeline including a step by step implementation plan (Table 6—Project Implementation Timeline) has been developed to guide activities and ensure continued forward momentum. The target date for implementation is January 1, 2012. This will allow for clean data collection in the EHR and comparison between quarters as well as annual data if the project is continued. Meetings and discussions held with stakeholders in preparation for implementation will help to ensure a smooth roll out.

Table 6: Project Implementation Timeline

October	Person Responsible	Status / Goal Date
Clarify project & outcome	CNO	Completed
Identify stakeholders	DNP student	Completed
Initiate discussions w/ stakeholders	DNP student	Initiated and ongoing
Analyze facility CPR metrics for > 50% wanting CPR	DNP student	Completed
Identify target facilities	DNP student	Completed
Confirm pricing w/ Nous	DNP student	Completed
November	Person Responsible	Status / Goal Date
Provide timeline, project proposal & pricing to preceptor	Health Services Director (HSD)	Completed
Decision on group or individual method for project	HSD w/ CNO & executive stakeholders	Individual NP—10.20.11 decided
Continue to interact w/	HSD or designee	ongoing

shareholders to build excitement		
Plan & execute meetings w/ involved NPs and facilities to provide details	HSD or designee	12.15.11
Purchase extended batteries if needed	HSD or designee	11.30.11
Finalize subscription payment w/ Nous for CPR video	HSD w/ Dr. Volandes & Executive Director	Submitted 10.31.11
December	Person Responsible	Status / Goal Date
Continue to interact w/ shareholders to build excitement	HSD or designee	ongoing
Verify access to CPR video decision tool on NP laptops	HSD & NPs	12.15.11
Verify link connectivity to CPR video in facilities	HSD & NPs	12.15.11
Plan kick off event to build excitement w/ NPs	HSD or designee	1.3.12
Schedule weekly conference calls w/ NPs to identify barriers or snags with project roll out initially; then re-evaluate frequency of calls	HSD or designee	12.15.11
Continue to provide support and feedback throughout project 90 days	HSD or designee	3.31.12
Analyze data and compare before and after intervention on % CPR	HSD or designee	4.15.12
Provide data analysis to stakeholders	HSD or designee	4.30.12

The EBP Implementation Plan for the CPR Video Decision Tool (Melnik & Fineout-Overholt, 2011) is detailed in Appendix G to ensure all steps are planned. The budget has been previously outlined for implementation of the project including projected costs and potential expense reduction.

CPR Video Decision Tool Protocol

Current evidence supports the integration of a CPR video decision tool into the advance care planning process which currently exists in the ISNP program between nursing home residents, their decision makers and the NP. The current advance care planning process includes discussion and documentation of the following components:

1. Decision making capacity—if that is the resident or identification of a surrogate decision maker including name and contact information;
2. Determination if a living will, advance directive or DNR exists and wishes contained in the document;
3. Goals of care—longevity, function or comfort;
4. Code status and intubation wishes;
5. Preferred place of death;
6. Hospice eligibility and if a referral was made.

Integration of the CPR video into this discussion for residents who are undecided or who have chosen CPR will improve the alignment of resident care choices with care provided, increase understanding of the lack of effectiveness of CPR in nursing home residents due to underlying chronic illnesses and promote autonomy in decision making.

The NP will make the decision when to integrate the CPR video into the discussion based on assessment of the conversation. In most cases the verbal discussion outlined above will occur followed by viewing of the CPR video. The CPR video is available through the Nous Foundation's website at www.acpdecisions.org or can be downloaded onto the laptop to avoid connectivity issues and is 2 minutes 33 seconds long.

Evaluation Plan

Components to be evaluated in the implementation process include accessibility to the CPR video either through the website link or downloaded on to the NP's laptop. A weekly call will be scheduled during the first month to identify and resolve any issues that may not have been anticipated. The frequency of the call will be re-evaluated as the project implementation takes hold so the call does not become a burden.

The selection of CPR as opposed to do not attempt resuscitation (DNAR) or comfort care interventions is a true measure and not a surrogate measure. A surrogate measure is defined as using an intermediate outcome as a substitute end point measure (DiCenso, Guyatt, & Ciliska, 2005, p 224). The metric for identifying the selection of CPR is a true measure and not a surrogate based on this definition.

The outcome measurement of selection of CPR versus DNAR as documented in the electronic health record is a reliable and valid measure. The outcome is a true measurement and not a surrogate end point, and is therefore valid (Dicenso, Guyatt & Ciliska, 2005). Reliability indicates that the metric "will measure the same construct consistently every time" (Melnyk & Fineout-Overholt, 2011, p. 232). Since, the metric is simply yes or no to CPR, it is reliable. The caveat is that in the absence of a DNAR order or absence of decision making capacity to select DNAR, the default is CPR. So, it is not always actively and consciously selected but may be the default if no decision maker can be identified to state otherwise. This is a significant point of opportunity—if health care professionals could determine that CPR is an intervention that is not appropriate in certain circumstances and therefore should not be attempted, the provision of CPR could be specifically directed toward appropriate patients.

The outcome to be evaluated is the percentage of residents requesting CPR which is currently 36.7% in the ISNP program. It is anticipated that this percentage will decrease as a result of implementing the CPR video decision tool into the advance care planning process. The measurement will be monitored from the clinical indicator reports on a quarterly basis by nursing home. Eight nursing homes will be included in the initial implementation to resolve any unforeseen challenges. The project can be expanded to the 74 additional nursing homes in the ISNP program and stakeholders support national expansion if the projected outcomes are realized.

It is not anticipated that an evaluation of the nursing home settings is needed as the NPs already function in that environment and they do not need any additional supplies from the nursing home—the power, video and laptop are all supplied by the ISNP program and brought into the nursing home by the NP.

The clinical indicator report (Appendix H) is available quarterly and will be analyzed following the first quarter of 2012 for the six facilities in which the project was implemented. Results will be disseminated to the NPs at the monthly staff meeting, senior leadership stakeholders at the quarterly business review meetings and to other stakeholders via meetings, conference calls or email updates. Application has been made to present the results at the May 2012 Ohio Health Care Association Conference for the nursing home industry and possibly the October 2012 Ohio Medical Director's Association Conference. Decisions to expand nationally would include WebEx presentations to site leadership across the country as well as to NP staff but that is not projected until 2013 based on outcome measurements.

Project implementation will be evaluated through a survey at 30 days and 90 days post implementation with the NPs. Survey questions include comfort with using the CPR video tool, ease of use, ability of decision makers to access website or DVD to view the CPR video tool, and recommendations for future implementations (Appendix I).

A log will be maintained of the project implementation calls weekly in January; every other week in February and as needed thereafter. The log will be analyzed for missed barriers and improvements for future implementations (Appendix J).

Data Analysis

Eight nursing homes and eight NPs were included in the initial implementation of the pilot video tool project. One facility closed mid-project and was excluded from the data analysis. The percentage of Evercare members requesting CPR in 4th quarter 2011 was compared to the percentage of Evercare members requesting CPR after 1st quarter 2012 as the video tool was implemented January 1, 2012. The mean percentage of patients requesting CPR in 4th quarter was 51.125% with a standard deviation of .1474 (Table 7). The 4th quarter median of the eight sites was .4795 with the lowest percentage .357 and the highest .708. The 1st quarter, after the CPR video tool was implemented, the mean percentage of patients requesting CPR was 45.77%, with a standard deviation of .12122. The 1st quarter median .4500 with the lowest percentage at .286 and the highest at .645. These data reflect the seven facilities that participated for the entire pilot.

The mean difference between 4th quarter (Q4) and 1st quarter (Q1) was .0550 or 5.5% with the standard deviation Q4 to Q1 being .06075 (Table 7). The median difference was .0310 or 3.1% with the minimum change -.09 (indicating actually an

increase in residents requesting CPR in one facility) and a maximum change of .08 with one facility showing no change between Q4 and Q1.

Statistics				
		Q4	Q1	diff
N	Valid	8	7	7
	Missing	0	1	1
Mean		.51125	.45557	0.06
Median		.47950	.45000	0.03
Std. Deviation		.147437	.121225	.06075
Minimum		.357	.286	-.09
Maximum		.708	.645	.08

Table 7: Descriptive Statistics

A single sample t-test was used to determine if the 5.5% decrease in patients requesting CPR from Q4 to Q1 was significant.

Table 8: Tests of Between-Subjects Effects

Dependent Variable: diff

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Observed Power ^b
Intercept	.007	1	.007	1.823	.226	.233	.208
Error	.022	6	.004				
Total	.029	7					

b. Computed using alpha = .05

The t-test indicates that the result is not significant as $p=.226$ which is greater than .05.

The partial eta squared reflects the effect size and is small at .233. The observed power was .208 which is lower than an optimal power of .8 or greater.

Addition of the CPR video tool to the advance care planning discussions by the NPs did not make a significant difference to the number of residents requesting CPR ($p=.226$) in the seven facilities piloted. One facility showed no change before and after and one facility with a new NP actually increased in the number of residents requesting

CPR. Despite the lack of statistical significance, a 5.5% reduction in residents selecting CPR with an equivalent reduction in hospitalizations would reduce medical expenses by \$56,987.

Figure 1: Difference in Residents Requesting CPR by Facility Q4 to Q1

Project implementation Analysis

A five question survey was completed by the participating NPs at 30 and 90 days post implementation to improve the process for future expansion of the CPR video tool project. A five point scale with 1 being strongly disagree and 5 being strongly agree was utilized for the first two questions of the survey. The eight NPs felt the initial preparation and education for implementation of the pilot project was acceptable with

the range of responses 3-4 and the mean response 3.375. Preparation and education was accomplished through a face to face educational session on either December 14 or 22 with follow up conference calls on January 3, 10, 17, 24 and February 28. The second question focused on integration of the CPR video tool into advance care planning. The range of responses was 1-2 on the five point scale with a mean response of 1.25. The video was very challenging for the NPs to use initially because of technological issues with Wi-Fi, DVD and downloading to laptop for use. It quickly became apparent that the population was also challenging as getting the patient and family to the facility to watch the video and have the discussion with the NP was difficult. The remaining questions were open-ended and focused on strategies to improve use of the CPR video tool. The NPs recommended using the video tool at admission when the family is already present at the facility or to plan a family night and do a group presentation. A recommendation to improve the initial implementation was to do a presentation to the nursing home management especially the DON and LSW. As noted by the NPs, challenges encountered during implementation of the pilot included: Lack of family involvement, lack of family response to scheduling a time to view the CPR video and discuss advance care plan options with the NP, technological challenges, and recommendation to use CPR video tool with patients prior to admission to the nursing home setting.

Additional recommendations obtained during the implementation conference calls included the administrative assistant sending copies of the DVD to families as requested by the NPs, and sharing the CPR video tool with the MDS nurse, LSW and DON as several NPs reported positive comments from nursing home staff after viewing.

Software issues were numerous and included inability to get the video to load onto laptops, need for special approvals for additional software installations through the corporate office, sharepoint access to video, and need for obtaining files in several formats from Dr. Volandes.

Conclusion

The first day of the month, a nursing home resident enrolled in the ISNP program. The day after her enrollment, she suffered a cardiac arrest, was given CPR by the facility staff, and sent to the emergency department via 911. She was 101 years old and died at the emergency room. That is not a dignified death and most individuals do not want to be the victim of such a situation. She was “benevolently assaulted” in compliance with her “request for CPR” or absence of an appropriate decision maker so she defaulted to CPR. Implementing this CPR Video Decision Tool Project may not have prevented her situation, but it has the potential to prevent many similar situations.

CPR is considered a standard of care and public misconceptions about the effectiveness of CPR are driven by television and lack of accurate information (Adams & Snedden, 2006; van Mil et al., 2000). In reality, CPR on nursing home residents has consistently demonstrated poor outcomes with less than a 5% survival rate and several studies showing no survivors (American Medical Directors Association, January 30, 2011). Health care expenditures are disproportionate near death and end of life treatments drive 78% of the costs into the final 30 days of life compared to the prior year (Yu, 2008). Implementing the CPR video decision tool into the advance care planning discussions, already a component of the ISNP program, did not demonstrate a significant change ($p=.226$) although a reduction of 5.5% in the number of residents

requesting CPR resulted from the implementation of the CPR video tool. Despite the lack of statistical significance, a 5.5% reduction in residents selecting CPR with an equivalent reduction in hospitalizations would reduce medical expenses by \$56,987 over 90 days. Artifacts included a new NP in a facility that subsequently showed an increase in the percentage of patients requesting CPR between Q4 and Q1, as well as one facility that demonstrated no change.

Use of the CPR video tool promotes end of life care in accordance with the resident's wishes and demonstrates the potential to reduce health care costs at the end of life. All of this, while offering a dignified and respectful death as opposed to “modus exitus” defined by failure to survive CPR (Gordon, 2003). Future areas of study include use of the CPR video tool for family educational events at the nursing home to facilitate family involvement and avoid scheduling issues identified by the NPs in this study and outreach to potential residents prior to admission perhaps through senior center educational events or assisted living sites.

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Appendix A

Literature Search Table

Date of Search	Keyword Used	Database/Source Used	Listed	# of Hits Reviewed	Used
01/23/11	CPR and decision aid	CINAHL	2	1	1
01/23/11	Decision tool and older adult or geriatric*	CINAHL	0	0	0
01/23/11	CPR	CINAHL	2107	0	Too large
01/23/11	CPR and age group	CINAHL	0	0	0
01/23/11	CPR and elder*	CINAHL—see table 2 below	21	21	12
01/23/11	Decision aid	CINAHL	203	0	Too large
01/23/11	Decision aid and elder*	CINAHL—see table 2 below	2	2	0
01/23/11	Decision aid and code status	CINAHL	0	0	0
02/01/11	End of life and CPR and decision aid	CINAHL	0	0	0
02/01/11	End of life and decision aid	CINAHL	3	3	2
03/27/11	Advance directive*	CINAHL	74	31	5
10/11/11	Updated search	CINAHL	27	27	12
07/30/12	Updated search	CINAHL	93	14	5

Date of Search	Keyword Used	Database/Source Used	Listed	# of Hits Reviewed	Used
01/29/11	CPR and decision aid	PubMed	109	109	7
01/29/11	CPR decision aid; English	PubMed	109	As above	As above
01/29/11	CPR decision aid elders	PubMed	0	0	0
01/29/11	CPR decision aid w/ limits: English; human; age 65+	PubMed	36	36	4
02/01/11	End of life decision aid and CPR	PubMed	5	2	1
02/01/11	End of life CPR	PubMed	105	17	12
03/27/11	Advance directive*	PubMed	23	23	7
10/11/11	Search Updated	PubMed	107	20	3
07/30/12	Search Updated	PubMed	116	8	1

Date of Search	Keyword Used	Database/Source Used	Listed	# of Hits Reviewed	Used
01/30/11	CPR and Decision aid	Cochrane	0	0	0
01/30/11	CPR	Cochrane	17	2	1
01/30/11	CPR and elder*	Cochrane	0	0	0
01/30/11	Advance Directive	Cochrane	2	0	0
01/30/11	Decision aid or decision tool	Cochrane	11	0	0
10/11/11	Search Updated	Cochrane	17	2	1
07/30/12	Search Updated	Cochrane	2	2	0

Appendix B

Characteristics of Studies Included and Excluded

Title	Author (year)	Included and Rationale or Excluded and Rationale
9 studies excluded from CPR and elder* CINAHL search due to: age of study (1993), focus on nurses' attitudes, language, elder as provider of CPR, pulmonary rehab not CPR.		Details outlined below
Comparison of medical and nursing attitudes to resuscitation and patient autonomy between a British and an American teaching hospital	Mello M; Jenkinson C; (1998)	Excluded: focus on nursing attitudes not decision makers
Safety and efficacy of pulmonary rehabilitation in elderly females with chronic obstructive pulmonary disease: a pilot report.	Arena, R., Greenspan, N, Tevald, M., and Haas, J. (2003)	Excluded: focus on pulmonary rehab not CPR
Intentions to use an automated external defibrillator during a cardiac emergency among a group of seniors trained in its operation	Meischke, H.W., Rea T.D., Eisenberg, M.S., and Rowe, S.M. (2002)	Excluded: focus on elders as providers of CPR
Attitudinal patterns determining decision-making in severely ill elderly patients: a cross-cultural comparison between nurses from Sweden and Germany.	Richter, J., and Eisemann, M.R. (2001)	Excluded: focus on nurses attitudes not decision makers
Reducing unnecessary hospitalizations of nursing home residents	Ouslander, J, and Berenson, R.A. (2011)	Included: treating in place; CPR status in nursing home residents
Effect of age on prehospital cardiac resuscitation outcome... presented in part at the Society for Academic Emergency Medicine Annual Meeting, San Francisco, CA, May 1993, and the 8th World Congress of Emergency and Disaster Medicine, Stockholm, Sweden	Wuerz RC; Holliman CJ; Meador SA; Swope GE; Balogh R (1995)	Excluded: age of study was 1993
A randomized trial of the capability of elderly lay persons	Neset A; Birkenes TS; Myklebust H;	Excluded: focus on elders as providers of CPR

to perform chest compression only CPR versus standard 30:2 CPR.	Mykletun RJ; Odegaard S; Kramer-Johansen J; (2010)	
Estimating cost-effectiveness of mass cardiopulmonary resuscitation training strategies to improve survival from cardiac arrest in private locations.	Swor, R., and Compton, S. (2004)	Excluded: focus on training of CPR providers
Plasma adiponectin plays an important role in improving insulin resistance with glimepiride in elderly type 2 diabetic subjects	Tsunekawa T; Hayashi T; Suzuki Y; Matsui-Hirai H; Kano H; Fukatsu A; Nomura N; Miyazaki A; Iguchi A; (2003).	Excluded: focus on diabetes in elders
Attitudes of Canadian radiation oncologists towards post-lumpectomy radiotherapy for elderly women with stage I hormone-responsive breast cancer.	Warner E; Chow E; Fairchild A; Franssen E; Paszat L; Szumacher E (2010)	Excluded: unrelated to topic
Vulnerable older people in the community: relationship between the Vulnerable Elders Survey and health service use.	McGee HM; O'Hanlon A; Barker M; Hickey A; Montgomery A; Conroy R; O'Neill D (2008).	Excluded: unrelated to topic
End-of-life decision making is more than rational.	Elliott, JA, and Olver, IN	Excluded: focus on general method of decision making for surrogates
Long term survival and costs per life year gained after out-of-hospital cardiac arrest	Naess AC , Steen PA (2004)	Excluded: Study in Norway and costs not reflective of US costs; subjects also described as CPR w/ spontaneous circulation and community dwelling elders
How misconceptions among elderly patients regarding survival outcomes of inpatient cardiopulmonary resuscitation affect do-not-resuscitate orders	Adams, D. & Snedden, D. (2006)	Included: CPR outcomes impact on decisions
Increasing use of DNR orders in the elderly worldwide: whose	Cherniack, E. (2002).	Included: focus on CPR in elders

choice is it?

Use of video to facilitate end-of-life discussions with patients with cancer: a randomized controlled trial.

El-Jawahri, A., Podgurski, L., Eichler, A., Plotkin, S., Temel, J., Mitchell, S., ...Vollandes, A. (2010).

Included: Video decision aid on end of life although it is in cancer patients and not elderly; may be able to extrapolate to different population

Older people's reasoning for resuscitation preferences and their role in the decision-making process

Laakkonen, M., Pitkala, K., Strandberg, T., Berglind, S., & Tilvis, R. (2005).

Included: study related to elders, CPR and decision making

Improving end-of-life outcomes in nursing homes by targeting residents at high-risk of mortality for palliative care: program description and evaluation
Predictors of do not resuscitate orders in the nursing home

Levy, C., Morris, M., & Kramer, A. (2008).

Included: study focus was on providing information to enable decision making

A decision aid for long-term tube feeding in cognitively impaired older persons

Messinger-Rapport, B., & Kamel, H. (2005).

Included: study focus on nursing home residents and decision making for DNR

Mitchell SL;Tetroe J;O'Connor AM. (2001).

Included: use of decision tool in nursing home population although for other intervention; could extrapolate to CPR decision making

Patients' understanding of advance directives and cardiopulmonary resuscitation

Thorevska, N., Tilluckdharry, L., Tickoo, S., Havasi, A., Amoateng-Adjepong, Y., & Manthous, C. A. (2005).

Included: decision making regarding CPR

Dilemmas in decision-making about resuscitation—a focus group study of older people.

Vandrevalla, T., Hampson, S. E., Daly, T., Arber, S., & Thomas, H. (2006).

Included: focus on CPR decision making in older adults—not nursing home residents but may be able to extrapolate to similar population; UK

Systematic Implementation of an Advance

Molloy, et al JAMA, March 15,

Included: focus includes Advance Directives which

Directive Program in Nursing Homes A Randomized Controlled Trial Improving decision making at the end of life with video images.	2000—Vol 283, No. 11 Vollandes AE;Barry MJ;Chang Y;Paasche-Orlow MK. (2010).	included CPR decisions Included: study most closely aligned with focus of my study question
Deciding About Cardiopulmonary Resuscitation The Contributions of Decision Analysis Improving Decision Making at the End of Life With Video Images	Sorum (1995) Angelo E. Vollandes, Michael J. Barry, Yuchiao Chang, Michael K. Paasche-Orlow, (2010)	Excluded: age of study did not meet criteria Included: focus of study closely aligned with my study question
Assessing End-of-Life Preferences for Advanced Dementia in Rural Patients Using an Educational Video: A Randomized Controlled Trial The acceptability of an information leaflet explaining cardiopulmonary resuscitation policy in the hospice setting: a qualitative study exploring patients' views	Vollandes, et al. (2011) Johnson, H.M, et al (2008)	Included: focus of study closely aligned with my study question
A framework for making advance decisions on resuscitation Deciding about Cardio Pulmonary Resuscitation	Regnard, C. & Randall, F., (2005) Paul C Sorum (1995)	Included: decision tool used for CPR although setting is hospice Included: study in England but focus end of life, CPR and decision making Excluded: age of publication and focus was decision analysis theory
Advance Directives and Outcomes of Surrogate Decision Making Before Death	Silveira, MJ, Kim, SYH, Langa, KM (2010)	Included: prevalence of decision making needed; prevalence of lack of capacity; AD associated w/ care alignment w/ preference
Advance Care Planning: Beyond the Living Will	Messinger-Rapport, B,	Included: useful expert opinion—not research study

Redefining the "Planning" in Advance Care Planning: Preparing for End-of-Life Decision Making	Baum, EE, & Smith, ML (2009) Sudore, RL, & Fried, TR (2010)	Included: synthesis of literature w/ suggested alternative; ACP should focus on prep for in-the-moment decision making w/ surrogate vs. outcome of living will or AD
Completing an Advance Directive in the Primary Care Setting: What Do We Need for Success?	Ramsaroop, SD, Reid, MC, & Adelman, RD (2007)	Included: Meta analysis of 18 studies—most successful w/ direct pt interactions over multiple visits; written materials only ineffective for AD w/o interaction / counseling
Interventions for promoting the use of advance directives for end-of-life decisions in adults (Protocol)	Ref list Simon-Lorda, P, Barrio-Cantalejo, IM, Garcia-Gutierrez, JF, Tamayo-Velazquez, MI, Villegas-Portero, R, Higuera-Callejon, C, & Martinez-Pecino, F (2008)	Included: No conclusion—plan for analysis
Health Care Costs in the Last Week of Life	Zhang, Wright, Juskamp, Nilsson, Maciejewski, Earle, Block, Maciejewski & Prigerson (2009)	Included: Changes in medical expenses for last week of life based on self-reported discussions w/ physician on EOL decisions
Older Oklahomans' Knowledge, Attitudes, and Behaviors Related to Advance Directives	Matzo, M, Hijazi, K, & Outwater, M (2008)	Included: random sample phone survey; quantitative; N=804; > 65 yr=56.5% had AD; > 18 yr= 27.3% had AD; 76% "not gotten around to it"
Acceptability of an Advance care planning interview schedule: A focus group study	Barnes, K, Jones, L, Tookman, A, & King, M (2007)	Included: Qualitative focus group study; timing of discussion imperative and will influence effect; adv decisions to refuse tx not focus but 1 component of EOL discussion; UK; self-selected sample
Stages of Change for the Component Behaviors of	Fried, TR, Redding, CA,	Included: Observational cohort study; qualitative; develop

Advance Care Planning	Robbins, ML, Paiva, A, O'Leary, JR, & Iannone, L (2010)	stages-of-change measures for ACP—measure characteristics of engagement; factors assoc w/ readiness
Advance Care Planning by or on Behalf of Peritoneal Dialysis Patients in LTC	Anderson, JE, Sikorski, I, & Finucane, TE (2006)	Included: Retrospective chart review; n=109; 108 had ACP; compliance w/ plan was limited; DNH order not assoc w/ likelihood of hosp; ACP not decisive in determining interventions during acute illness
Constituting Advance Directives from the Perspective of People w/ Chronic Illness	Jezewski, MA, & Meeker, MA (2005)	Included: Qualitative, meaning of ADs to them, attitudes & exp w/ ADs; perceived need for AD; 23 individual interviews & 9 focus groups; total n=76; recruited from 16 support groups rep 10 chronic illnesses
Patient Preferences in Instructional Advance Directives	Abbo, ED, Sobotka, A, & Meltzer, DO (2008)	Included: test a modified AD w/ limited life sustaining therapy for critical illness & adv dementia over traditional AD form; Convenience sample n=72; 86% preferred modified AD over traditional form;
Specialist physician approaches to discussing cardiopulmonary resuscitation for frail older adults: A qualitative study	Mallery, Hubbard, Moorhouse, Koller & Eeles (2011)	Qualitative study of 28 physician interviews on content of CPR discussion
Augmenting Advance Care Planning in poor prognosis cancer patients with video decision aid	Volandes et al (2012)	Included: Pre/post intervention study using video decision aid; n=80
Patients snub end of life planning	Medical Ethics Advisor (2012)	Included: California survey
Advance care planning and the older patient	Aw et al (2012)	Included: Review of current literature on advance directives and use
Advance directives and end of life preferences	Chu et al (2011)	Excluded: population in Hong Kong—different cultural values
Advance directive discussion: Lost in translation	Fischer et al (2012)	Excluded: focus on cultural disparities in formulating advance directives in community elders; not CPR decisions; not nursing home

Factors associated with advance directives when new to long term care POLST	Hirschman, K et al (2012) Hammes, B et al (2012)	Included: nursing home population; predictors of advance directives Excluded: retrospective chart review on alignment of POLST orders with actual end of life treatment
Accuracy of decision aide for advance care planning: Simulated end of life care planning Uncertainty in decision making	Levi, Heverley & Green (Fall 2011) Lopez & Guarino (2011)	Included: computer generated tool with interactive decision aid Excluded: investigated caregiver uncertainty in end of life decision making
Advance directives in workplace	Marchina (2011)	Excluded: population of healthy adults working
Regional variation in association with advance directives and end of life medical expenditures	Nicholas, Langa, Iwashyna & Weir (2011)	Included: retrospective observational study investigating costs of end of life care and variables
Knowledge of nurses in completing advance directives	Ryan & Jezewski (2012)	Excluded: population focus on RNs in ER, oncology & ICU

Appendix C: Organizational Culture & Readiness for System-Wide Integration of Evidence-based Practice Survey

Item	None at all	A Little	Somewh at	Moder ately	Very Much
To what extent is EBP clearly described as central to the mission & philosophy of your institution?	1	2	3	4	5
To what extent do you believe EBP is practiced at your institution?	1	2	3	4	5
To what extent is the nursing staff with whom you work committed to EBP?	1	2	3	4	5
To what extent is the physician staff with whom you work committed to EBP?	1	2	3	4	5
To what extent are there administrators within your organization committed to EBP? (resources planned, support, time for EBP?)	1	2	3	4	5
In your organization, is there a critical mass of nurses with strong EBP knowledge and skills?	1	2	3	4	5
To what extent are there nurse scientists (doctorally prepared researchers) in your organization to assist in generalization of evidence when it does not exist?	1	2	3	4	5
To what extent are there Advanced Practice Nurses who are EBP mentors for staff nurses as well as other APNs?	1	2	3	4	5
To what extent do practitioners model EBP in their clinical settings?	1	2	3	4	5
To what extent do staff nurses have access to quality computers and access to electronic databases for searching for evidence?	1	2	3	4	5
To what extent do staff nurses have proficient computer skills?	1	2	3	4	5
To what extent do librarians within your organization have EBP knowledge & skills?	1	2	3	4	5
To what extent are librarians used to search for evidence?	1	2	3	4	5
To what extent are fiscal resources used to support EBP education, conferences, workshops, paid time for EBP process, mentors	1	2	3	4	5
To what extent are there EBP champions? Administrators 5 Physicians 5 Nurse Educators 5 APNs 4 Staff nurses 4	1	2	3	4	5
To what extent is measuring and sharing of outcomes part of the climate of the organization?	1	2	3	4	5
Item	None	25%	50%	75%	100%

	1	2	3	4	5
To what extent are decisions generated from:					
Direct care providers? 4					
Upper administration? 3					
Physician or other health care provider group? 4					
Item	Not ready	Getting ready	Been ready but not acting	Ready to Go	Past Ready and on to action
Overall, how would you rate your institution in readiness for EBP?				X	
Compared to 6 months ago, how much movement in your organization has there been toward an EBP culture?	None				A Great Deal

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Appendix D

NOUS FOUNDATION, Inc.

Federal ID# 27-1871373

Invoice

Date: 10/24/2011

Invoice # 086

To

ISNP

Salesperson	Job	Payment Terms	Due Date
		Due on receipt	January 1, 2012

Qty	Description	Unit Price	Line Total
Licensing agreement	Access to ACP Video Library for 3 months starting January 1, 2012	\$1,000	\$1,000

Subtotal	\$1,000
Sales Tax	
Total	\$1,000

Make all checks payable to Nous Foundation, Inc.

Thank you for your business!

NOUS FOUNDATION, Inc.
Federal ID# 27-1871373

Invoice

Appendix E

Date: 10/24/2011
Invoice # 087
ISNP

Salesperson	Job	Payment Terms	Due Date
		Due on receipt	April 1, 2012

Qty	Description	Unit Price	Line Total
Licensing agreement	Access to ACP Video Library for 9 months starting April 1, 2012	\$1,500	\$1,500
Subtotal			\$1,500
Sales Tax			
Total			\$1,500

Make all checks payable to Nous Foundation, Inc.

Thank you for your business!

Evaluation Table

Appendix F

First Author (year)	Conceptual Framework	Design/Method	Sample/Setting	Major Variables Studied (and Their Definitions)	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice	
Ramsaroop, SD, Reid, MC, & Adelman, RD (2007)	N/A	Level 1 Meta analysis—18 studies: 12 RCTs 2 Quasi 2 Prospective 1 Observational 1 retro cohort	Selected 18 studies Stated inclusion / exclusion criteria	Interventions to increase Adv Dir completion	18 studies looking at interventions to increase Adv Dir completion	Effect size completed on 15 /18 studies	Studies ranged from completion rates of 44% to -2% (favor control) Effect size calc for 15 of 18: pooled effect .50 (95% CI = .17 - .83) moderate overall effect favoring intervention	Very Strong: Most success in getting Adv Dir completed is w/ direct interaction w/ HCP Passive education—written materials w/o counseling ineffective	Selected from hand search of reference lists of previously selected studies
Volandes, AE, Paasche-Oslo, MK, Barry, MJ, Gillick, MR, Minaker, KL, Chang, Y, Cook, EF, Abbo, ED, El-Jawahri, A,	N/A	Level II RCT	Convenience sample >65 yr; Living in Boston Community dwelling 4 Primary care clinics—2 geri / 2 adult Mean age 75 yr 58% female N=106 verbal grp N=94 video grp	IV=verbal narrative + video DV=Selection of comfort care, limited life sustaining care, or life prolonging care DV=change in selection of care level after intervention and after 6 wk post intervention IV=Health Literacy	Preferred goals of care: Life Prolonging=vent + CPR Limited care=hosp / ATB but no CPR Comfort care=symptom relief interventions Evaluated selection of goals of care after	Odds ratio 3.9 for video group w/ 95% CI 1.8 – 8.6 df=3 p=.003	Verbal narrative only 64% comfort care 19% Limited 14% Life prolonging 3% uncertain Video grp 86% comfort 9% Limited 4% life prolonging 1% uncertain 6 wk	Strong worth to practice: Video re: adv dementia Participants more likely to select comfort care over only verbal description Video grp= decision more stable after 6 wk	Tools: 2 min video www.ACPdecisions.com Narrative appendix: BMJ.com Note to self: Rural LA study used 6 min video; this was 2 min video Difference??

Mitchell, SL (2009)				tool: REALM DV=correlation to level of care selected	intervention and again 6 wk post Health Literacy assessed prior to intervention as part of demographics		reinterview: Verbal grp 29% change in preference Video grp 6% change in preference p<.001		
First Author (year)	Conceptual Framework	Design/Method	Sample/Setting	Major Variables Studied (and Their Definitions)	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice	
Volandes, AE, Mitchell, SL, Gillick, MR, Chang, Y, Paasche-Oslo, MK (2009)	N/A	Level II RCT using computer randomization	Convenience sample N=14 2 geri clinics in Boston Note—subgrp of BMJ study above During same time period Narrative = 6 Video=8	IV—video of adv dementia DV=Selection of comfort care, limited life sustaining care, or life prolonging care DV=concordance of pt decision w/ surrogate decision maker DV=acceptability of video DV=recommendation of video DV=knowledge of adv dementia	Preferred goals of care: Life Prolonging=vent + CPR Limited care=hosp / ATB but no CPR Comfort care=symptom relief interventions Concordance: Agreement between pt & surrogate on decision of goal of care	Tabulation statistics	Verbal grp: 50% comfort care 17% limited 33% life prolonging Concordance: 33% 2/6 agreement between surrogate & pt Video grp: 100% comfort care 100% Concordance w/ Video and surrogates w/ patient Acceptability of video 94% Recommend video to others: 94% Knowledge inc in both grps	Strong worth to practice: Video re: adv dementia Participants more likely to select comfort care over only verbal description	Limitations: Researcher not blind Small sample Video bias possible Lack minorities

							Knowledge inc greater in Video grp vs verbal grp		
First Author (year)	Conceptual Framework	Design/Method	Sample/Setting	Major Variables Studied (and Their Definitions)	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice	
Volandes, AE, Barry, MJ, Chang, Y, Paasche- Oslow, MK (2010)	N/A	Level III Controlled trial w/o randomization Pre / Post survey design	N=146 6 study sites: Primary care clinics associated w/ 2 teaching hospitals in Boston 40 yr age & appt w/ general internist Excluded if close personal relationship w/ someone w/ adv dementia; did not speak English, lacked decisional capacity at time of appt	IV=video of adv dementia IV=Health literacy DV=preferences for goals of care DV=decisional conflict scale/ uncertainty	Health Literacy measured using REALM tool (Rapid Estimate of Adult Literacy in Medicine tool) Decisional Conflict scale to measure uncertainty before and after video by health literacy level 3 Levels of Literacy based on score: Low literacy = 0-45 =6 th grade and below Marginal = 45 – 60 = 7 th – 8 th grade Adequate=61-66 = 9 th grade & above	Mean SD 95% CI ANOVA	Uncertainty prior to video: Low-10.8 Marg-12.4 Adequate 13.5 P<.0001 Uncertainty p video: Low-13.6 Marg--14.1 Adequate-14.5 P=0.046	Strong worth to practice: Video decreased uncertainty in all grps but more in lower health literacy	

First Author (year)	Conceptual Framework	Design/Method	Sample/Setting	Major Variables Studied (and Their Definitions)	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice	
Volandes, AE, Ferguson, Davis, Hull, Green, Chang, Y, Deep, Paasche-Oslo (2011)	N/A	Level II RCT	Primary care clinic rural Louisiana ≥65 yr N=76	IV—video of adv dementia IV—Health Literacy w/ REALM DV=Selection of comfort care, limited life sustaining care, or life prolonging care DV=concordance of pt decision w/ surrogate decision maker DV=acceptability of video DV=recommendation of video DV=knowledge of adv dementia	Preferred goals of care: Life Prolonging=vent + CPR Limited care=hosp / ATB but no CPR Comfort care=symptom relief interventions Health Literacy assessed prior to intervention as part of demographics 4 pt Likert scale to assess perceived value of video: 1=inc understanding 2=recommend to others 3 Levels of Literacy based on score: Low literacy = 0-45 =6 th grade and below Marginal = 45 – 60 = 7 th – 8 th grade Adequate=61-66 = 9 th grade & above	Bivariate analysis N too small for logistic regression	Verbal narrative only (control group) 72% comfort care 12% Limited 16% Life prolonging Video grp 91% comfort 9% Limited 0% life prolonging df=2 p=.047 Greater health literacy led to increase selection of comfort OR 2.1 95% CI CI 2.4 -62.6 Video grp more likely to select comfort care OR 3.9 CI 95% CI 1.0-15.1 Perceived value of video: 31/33 very or somewhat helpful 32/33 recommend to	Strong worth to practice	Note: Researcher not blinded 6min video in this study vs 2 min in 2009 study Difference?? Health Literacy confounds role of race Narrative is included in appendix

							others		
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First Author (year)	Conceptual Framework	Design/Method	Sample/Setting	Major Variables Studied (and Their Definitions)	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice	
Johnson, HM, Nelson, A (2008)	Interpretative Phenomenological Analysis (IPA)	Level VI Qualitative Semi-structured interviews	UK Hospice inpatient & day N=6 13 approached 2 declined d/t topic 4 too ill 1 aphasic 6 included 5 inpatient 1 day unit	IV—Informational Leaflet on CPR DV—patient views on acceptability of leaflet DV—patient understanding of CPR from leaflet	Qualitative—emergent themes based on interviews	Grouping of emergent themes	Leaflet was acceptable to participants Leaflet was not a reliable method to communicate CPR and needs discussion & opportunity to clarify & ask questions	Weak—small convenience sample Population not easily generalizable due to UK but may be similar to nsg home rdts	In UK—CPR futile, physician can defer discussion and inform patient CPR will not be offered; If pt refuses to participate in discussion, physician can order DNAR
Frank, C, Pichora, D, Suurdt, J, Heyland, D. (2009)	N/A	Level IV Cohort study	Canadian hospital N=36 25 patients + 11 family members Inpatients >55 yr w/ serious illnesses	IV Decision aid re: CPR for hospitalized patients DV=acceptability of decision aid DV=burden w/ use DV=recommendation for use w/ others	Acceptability of decision aid Burden w/ use Recommendation to use w/ others	Tabulation statistics	92% patients & 64% families stated decision aid was very or extremely helpful >70% patients & families considered aid acceptable Low burden median 2/10 on 10 pt scale of 1=none &	Weak—small sample, hospitalized population	Comment—should be done by a nurse—they are better communicators (than docs)

							10=extremely upsetting 100% recommended use w/ others		
First Author (year)	Conceptual Framework	Design/Method	Sample/Setting	Major Variables Studied (and Their Definitions)	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice	
Van Mil, AHM, van Klink, RCJ, Juntjens, C, Westerndorp, RGJ, Stiggelbout, AM, Meinders, AE, Lagaay, AM (2000)	N/A	Level VI Qualitative study Study impact of gender, information, quality of life (QOL) & hospitalization on CPR discussions & preferences Interviews— CPR preferences Current state of health 3 hypothetical scenarios	Netherlands 75 community dwelling elders in Leiden w/ MMSE >24 45 consecutive patients in 2 hospitals in Leiden ≥75 yr N=120	CPR survival knowledge QOL w/ CPR	Expected survival w/ CPR for 3 situations: a. acute illness b. chronic illness c. terminal CA Preferences for CPR in above situations Then interviewer shared survival info: 10-17% survival w/ acute illness; <5% survival w/ chronic illness and 0-5% survival w/ terminal CA Rated QOL w/ Dartmouth COOP / WONCA functional health assessment Desire for info Desire to participate in CPR discussion Preferred time to discuss	QOL multivariate regression	Survival w/ CPR over-estimated Males CPR preferences assoc w/ pain Female CPR preference assoc w/ impaired physical function & daily social activities 6% had prior CPR discussions w/ MD 70% preferred routine discussions 61% wanted to make own decision 65% not want CPR after discussion (not measure prior) Gender difference in CPR not r/t QOL indicators	Moderate	Note: Popular TV contributes to belief CPR is more successful

							Not wanting CPR assoc w/ lower QOL score (p<.05)		
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First Author (year)	Conceptual Framework	Design/Method	Sample/Setting	Major Variables Studied (and Their Definitions)	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice	
Molloy, DW, Guyatt, GH Russo, R, Goeree, R, O'Brien, BJ, Bedard, M Et al. (2000)	Let Me Decide Adv Dir Program (LMD)	Level II RCT	Ontario 6 nsg homes Matched pairs on key characteristics 1 per pair to intervention grp Controls continued w/ prior policies N=1292 total N=527 intervention grp Decisional=MMSE ≥16 Family contacted if MMSE <16	IV=Let Me Decide Adv Dir program DV=family /pt satisfaction w/ care, services & costs	7 pt Likert satisfaction scale at 4 points: Start, 6, 12 and 18 mo Hospitalizations Cost of hospitalization Completion of LMD	CI % Means significance	49% decisional rdt completed LMD 78% families of rdt w/o decisional capacity completed LMD Satisfaction not statistically different between intervention grp and control grp -.16 CI 95% Rdt .07 CI 95% family Intervention grp fewer hospitalizations than cntrl—mean 0.27 vs 0.48 p=.001 Decreased	Strong worth to practice	LMD program includes instructional and proxy components; range of health care choices: life threatening illness (intensive to palliative), cardiac arrest (CPR / DNAR), feeding (intubation to basic😊; in a reversible condition w/ acceptable quality of life vs irreversible condition w/ unacceptable quality of life

							utilization of services w/o change in mortality or satisfaction Resource cost \$3490 vs \$5239 (Canadian) p=.01 Deaths: 24% Intervention 28% cntrl grp p=.20		
First Author (year)	Conceptual Framework	Design/Method	Sample/Setting	Major Variables Studied (and Their Definitions)	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice	
Laakkonen, ML, Pitkala, KH, Strandberg, TE, Berglind, S, Tilvis, RS (2005)	N/A	Level VI Descriptive study	Finland N=220 Elderly, home dwelling CV patients ≥75 yr Part of DEBATE study CV=atherosclerotic dx, prior MI, CAD, prior CVA, TIA, PAD	CPR preferences QOL Zung Depression score	Rationale for CPR preferences Decision making process Physical function Cognition Mood QOL Questionnaire for demographics Zung Depression scale MMSE at annual clinic visit	NCSS stats program	52% estimated CPR outcome better than those refusing CPR 9% had discussed 38% want to discuss 80% felt patient should be involved—alone, w/ doc or w/ doc & family No difference assoc w/ religion in CPR vs nonCPR grp 92% of non CPR grp had “gained old age & had a full life” 114/220 (52%) wanted CPR “life is	Moderate	ACP as a developmental task

							<p>precious; feel needed by family or friends; life has value of its own”</p> <p>48% non CPR 16% Zung score >44 which is depression</p> <p>Depression assoc w/ refusing CPR / preferring less treatment 40% presumed CPR outcome good or moderate</p>		
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First Author (year)	Conceptual Framework	Design/Method	Sample/Setting	Major Variables Studied (and Their Definitions)	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice	
Levy, C, Morris, M, & Kramer, A (2008)	N/A	Level IV Cohort, retrospective chart review Compare 1 yr prior and 1 yr after implementation of Making Advance Planning a Priority (MAPP) Rdts identified at risk for death (score ≥ 7) Fax sent to MD re: risk status Chart flagged re: risk status MD had to respond to 4 options: 1. EOL needs already addressed & state date of note in chart. 2. state would address on next visit and give date of next visit. 3. refer rdt for palliative care consult 4. refer for hospice consult	Colorado Urban 160 bed nsg home, for profit, chain Census 123/160 avg N=72 with 27 pre and 45 post	IV= MAPP Making Advance Planning a Priority (MAPP) program DV= site of death DV=presence of Adv Dir DV=presence of CPR order DV= presence of hospice or palliative care w/ death DV=length of hospice before death	MAPP—identified rdts at high risk of death using MDS mortality prediction based on: Wt loss, male sex, functional ability, swallowing problem, SOB, age ≥ 88 , BMI ≤ 22 ; Dx CHF Score 0-2=7% probability of death in 12 months Score 3-6=19% probability of death in 12 months Score 7-10=50% probability of death in 12 months Score ≥ 11 =87% chance of death in 12 months (Flacker Mortality tool) CPS = cognitive performance score Barthel Index = functional ability using ADL scores	SPSS Logistic regression Student <i>t</i> test Wilcoxon	Following MAPP: Rdts less likely to die in hospital—48.2% prior vs 8.9% post MAPP, $p=.0001$ 100% rdts dying after MAPP program started, had Adv Dir in place ($p=.03$) Rdts more likely to have palliative care referrals—pre 7.4%; post 31.1%, $p=.02$ Mean number of hosp days prior to death did not decrease—5.17 pre vs 3.33 post, $p=.42$ No change in hospice referrals pre and post Mean LOS in hospice did not change—pre 15.1 ± 24.3 days vs post 24.3 ± 32.7 days; $p=.51$ Prior: 12% rdts no Adv Dir at all; vs all had Adv Dir post Pre 63% DNR orders; Post 84.4% DNR orders ($p=.003$)	Strong worth to practice—may have reflected increased focus by facility staff on obtaining Adv Dir and use Researchers excluded rdts who died in hospital if in hospital greater than 2 weeks Study sample had more African Americans than general Colorado population (pre 18.5%; post 11.1% and gnrl pop 3.8%)	

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First Author (year)	Conceptual Framework	Design/Method	Sample/Setting	Major Variables Studied (and Their Definitions)	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice	
McBee, L, Burack, OR, Carter, JM, Chichin, ER (2000)	N/A	Level VI QI Project identified by team in nsg home	NYC using 3 units of a nsg home N=58	IV=contact w/ family DV=complete Adv Dir	Tracking form for # of time contacted / spoke w/ family	% Calculate time period	40% families made ACP decision when contacted 80% made decision within 1 month 17% never made decision Majority of decisions made w/ 4 attempts to contact family	Weak but shows persistence results in increased completion rates	
Sudore, RL, & Fried, TR (2010)	N/A	Level V Synthesis of literature review	N/A	N/A	N/A	N/A	Identifies 3 steps to prepare patient & surrogate: 1.choose surrogate 2. clarify patient values over time 3. establish leeway in surrogate decision making	Strong: Recommendation that focus should be preparation of patient & surrogate to make best “in the moment” medical decisions. This moves focus away from making premature decisions w/ incomplete info	
Mallery, L, Hubbard, RE, Moorhouse, P, Koller, K, & Eeles, EMP (2011) J of Palliative	Grounded theory	Level VI Qualitative	Semi-structured interviews N=28 physicians 20 male / 8 female	Content & structure of CPR discussion in dementia case study from physician to patient / family	86% didn't discuss capacity; 82% didn't ask about adv dir; 75% didn't explain CPR w/ illness burden; 68% didn't explain purpose of conversation; 79% didn't check understanding	Taped interviews; 3 analyzers w/ discussion & agreement		moderate	

Care, 27(1)									
First Author (year)	Conceptual Framework	Design/Method	Sample/Setting	Major Variables Studied (and Their Definitions)	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice	
Barnes, K, Jones, L, Tookman, A & King, M (2007)	N/A	Level VI Phase 1 Qualitative study Focus group study	UK Purposive sampling for balanced sample of palliative & oncology patients 37 approached w/ 59% agreeing to participate N=22 8 focus groups approximately 1 hr each	Adv Dir discussions & schedule	Explore acceptable interview schedule Suitability of EOL discussions, timing, nature & impact	Thematic analysis	Advance decisions should not be focus but broader EOL issues Advance Care Planning (ACP) should be accomplished over several meetings HCP must be skilled in reading cues, responding to questions, provide sufficient time for discussions; avoid dwelling too much on EOL, avoid destroying hope	Weak—population not really comparable and very small sample Bias in sample due to selection from palliative & oncology patients	

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Dipko, LR, Xavier, K, & Kohwles, RJ (2003)		Level IV Retrospective Cohort Study	VA N=13,913 Note: N=203 for group education N=13,710 was considered the comparison group	IV: group education IV: individual SW discussion at least 1 session IV: no education DV: completion of Adv Dir 1:1 defined as 30 min appt w/ SW Grp session: 1.5 hr including 15 min w/ physician presenting	Completion rate of adv directives	Logistic regression analysis	Social work education of any kind resulted in 20% completion vs 2.1% in no education group Odds of completing Adv Dir inc 4.3% for each yr of age while controlling for educational approach 38.5% completion rate w/group and 1:1 session w/ SW 32.5% completion for group only 33.8% completion for multiple 1:1 sessions w/ SW	Strong Group education twice as effective as individual session and less time consuming	Selected from hand search of reference lists of previously selected studies
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Volandes, A E, Levin, Slavin, Carvajal, D'Reilly, Keohan, Theoduolou , Dickler, Gerecitano, et al (2011)	N/A	Level II Controlled trial w/o randomization Pre / post survey design	N=80 Inclusion / exclusion criteria defined for population poor prognosis cancer returning to oncologist English speaking	IV=video decision aid DV= preference for life- prolonging; basic or comfort care— change from pre video to post video	Preferred goals of care: Life prolonging=vent / CPR Limited / basic care=hospital / ATB but no CPR Comfort care=symptom relief Evaluated goals of care pre and post video decision aid	Significant p<.05	Not significant for change in goals of care was significant for decision for no CPR from 71% to 62% post video (p=.03) and no vent 80% to 67% post video (p=.008) Documented code status in chart not reflective of decision—only 5% reflected wishes with CI -.06 - .04	Very strong worth to practice participants recognized resuscitation impacted by dx and not as effective	
“New hospice facts and figures,” Medical Ethics Advisor, March 2012, p. 31.) California HealthCare Foundation	N/A	Survey	No details given	Opinion EOL wishes knowledge communication of wishes	Presence / absence survey details not provided	Percentage	80% respondents thought important to put EOL wishes in writing < than 25% had actually put their wishes in writing 40% had discussed w/ loved one 75% had heard of hospice <40% heard of adv directives “too many other things to worry about” was top reason for not discussing w/ loved one	Moderate worth— survey population unknown / survey questions not detailed	

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Nicholas, Langa, Iwashyna & Weir (Oct 5, 2011)	N/A	Level IV Prospective Medicare data correlated to death index for Medicare recipients Retrospective analysis	Health & Retirement Study Medicare beneficiaries died between 1998 and 2007 correlated to National Death Index N=3302	Adv directives=IV Expenses at EOL = DV hospice care=DV death in hospital = DV life sustaining tx = DV	Correlation between having adv directives and EOL expenditures based on Medicare claims in last 6 months of life	Regions specified by high, medium and low EOL inhospital expenses in last 6 months life Multivariable regression	High spending regions—Adv dir limiting tx impacted EOL Medicare expenses: dec \$5585; 95% CI (-\$10903 to -\$267) Not sig impact in med / low expense regions; Directives were associated with lower adjusted probabilities of in-hospital death in high- and medium-spending regions (-9.8%; 95% CI, -16% to -3% in high-spending regions; -5.3%; 95% CI, -10% to -0.4% in medium spending regions). Advance directives were associated with higher adjusted probabilities of hospice use in high- and medium-spending regions (17%; 95% CI, 11% to 23% in high-spending regions, 11%; 95% CI, 6% to 16% in medium-spending regions), but not in low-spending regions	Strong worth to practice: EOL Medicare expenditures use public tax dollars Opportunity to reduce spending and improve quality of life so pt wishes match care
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Levi, Heverley & Green (Fall 2011)	N/A	Level III Controlled trial w/o randomization of patients / docs randomized	N=19 patients N=14 physicians interactive, computer generated adv dir increase agreement between doc & patient wishes	IV=computer interactive decision aid DV=pt / doc agreement based on computer generated adv dir	3 physicians made tx decisions based on adv dir in 6 scenarios Pt reviewed doc tx decision to evaluate if it matched their wishes	Percentage agreement; 10 point scale on agreement	84% agreement between doc & pt for all tx decisions 82% agreement on use of vent as tx 75% agreement on use of CPR as tx Pt evaluation of doc ability to support their wishes 8.4 on 1-10 scale with range 6.5 – 10 Doc evaluationof ability to accurately reflect pt wishes 7.8 on 1-10 scale with range 6.1 to 9.3	Moderate worth to practice sample size small no power analysis	F/U “Making Your Wishes Known: Planning Your Medical Future.”
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CPR Decisions in Nursing Home Residents

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Hirschman, Abbott, Hanlon, Bettger & Naylor (2012)	N/A	Level IV Cross sectional study	N=470 AL=153 NH=145 Comm=144 Philadelphia or NY spoke English / Spanish exclude MMSE <12 exclude prior use of comm services / LTSS Include initial use of long term support services <6 months	IV=initial use of LTSS DV=presence of adv directives / livingn will / DHCPOA	Interview questions: Presence adv dir / living will / DHCPOA sig health changes < 6 months MMSE Basic demographics	Multivariate logistic regression	61% reported living will / adv dir / DHCPOA (living will: X^2 : 120.9; $P < .001$; health care power of attorney: X^2 69.1; $P < .001$). In multivariate logistic regression models, receiving LTSS at an ALF (OR $\frac{1}{4}$ 5.01; $P < .001$), being white (OR $\frac{1}{4}$ 2.87; $P < .001$), having more than 12 years of education (OR $\frac{1}{4}$ 2.50; $P < .001$), and experiencing a significant health change in past 6 months (OR $\frac{1}{4}$ 1.97; $P \frac{1}{4}$.007) were predictive of having a living will. Receiving	Strong worth to practice—timing of adv directives discussion
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						LTSS at an ALF (OR $\frac{1}{4}$ 4.16; $P < .001$), having more than 12 years of education (OR $\frac{1}{4}$ 1.74, $P \frac{1}{4}$.022), and having had a significant change in health in the last 6 months (OR $\frac{1}{4}$ 1.61; $P \frac{1}{4}$.037) were predictive in having an health care power of attorney in this population of LTSS recipients.		
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Appendix G: CPR Video Decision Tool EBP Implementation Plan

PICOT Question	Do nursing home residents and their decision makers who use a CPR video decision tool, choose CPR less frequently than nursing home residents and their decision makers who do not use a CPR video decision tool over a three month time period?
Team Members	Dr. Todd Sobol, Suzanne Fischer, Judi Segbefia, Sharon Phillips, Ginger Bryant, NPs and DNP student
EBP Mentor & Contact Info	Dr. Gail Moddeman (937) 545-5140 cell

Preliminary Checkpoint	Who are stakeholders? Active & Supportive? Project team leadership & roles Acquisition of necessary approvals for project implementation <i>Begin relationship with EBP Mentor</i>	Identified & on board Identified & on board In process—expedited IRB approval and proposal defense needed yet
Checkpoint One	Hone PICOT question & assure team is prepared Build EBP knowledge & skills <i>Begin relationship with EBP Mentor</i>	Completed Skills in EBP continually improving Relationship established and committee assembled
Checkpoint Two	Conduct literature search & retain studies that meet inclusion criteria Connect with librarian TEAM BUILD with implementation group <i>Begin relationship with EBP Mentor</i>	Completed and updated 16 studies included March 2011—librarian Ongoing team building and stakeholder communication Relationship continues to deepen
Checkpoint Three	Critically appraise literature Meet with group to discuss how evidence answers question; pose follow up questions; re-review literature as necessary <i>Begin relationship with EBP Mentor</i>	Literature review updated CPR video tool demonstrated to leadership team Continue to massage stakeholders
Checkpoint Four	Meet with group Summarize evidence with focus on implications for practice & conduct interviews with content experts as necessary to benchmark <i>Begin relationship with EBP Mentor</i>	Met with leadership team and medical director CPR % established for all facilities as baseline Six identified for initial implementation and corresponding NPs Continue to build relationship with Project Chair
Checkpoint Five	Define project purpose—connect the evidence with the project Define baseline data collection sources (e.g. dataset, EHR, methods & measures)	Project clarified to NP intervention vs group intervention Outcome measures established and baseline obtained for

	<i>Begin relationship with EBP Mentor</i>	comparison Continue to build relationship with Project Chair
Checkpoint Six	<p>Meet with implementation group</p> <p>Discuss known barriers & facilitators of project</p> <p>Discuss strategies for minimizing barriers & maximizing facilitators</p> <p>Finalize protocol for implementation of evidence</p> <p>Identify resources (human, fiscal & other) necessary to complete project</p> <p>Supply EBP Mentor with written IRB approval & managerial support</p> <p>Begin work on poster for dissemination of initiation of project & progress to date to educate stakeholders about project</p> <p>Include specific plan for how evaluation will take place: who, what, where, when & how, and communication mechanisms with stakeholders</p> <p><i>Begin relationship with EBP Mentor</i></p>	<p>Met with leadership team in October 2011 to review project</p> <p>Resources identified</p> <p>Met with Dr. Volandes and negotiated fees</p> <p>Invoices submitted for payment</p> <p>Continue to work with Project Chair for expedited IRB approval and project proposal defense.</p> <p>Application submitted for May 2012 Ohio Health Care Association conference as presenter to begin to disseminate findings to long term care industry</p> <p>Evaluation of outcomes is through CIS report which is pulled from EHR quarterly and % residents requesting CPR is one metric identified only by facility not by resident name</p>
Checkpoint Seven	<p>Meet with implementation group to review proposed poster</p> <p>Make final adjustment to poster with support staff</p> <p>Inform stakeholders of start date of implementation & poster presentation</p> <p>Address nay concerns or questions of stakeholders</p> <p><i>Begin relationship with EBP Mentor</i></p>	
Checkpoint Eight	<p>Poster presentation (preferred event is a system-wide recognition of quality, research or innovation)</p> <p>LAUNCH EBP implementation project</p> <p><i>Begin relationship with EBP Mentor</i></p>	
Checkpoint Nine	<p>Mid-project meet with all key stake-holders to review progress & provide outcomes to date</p> <p>Review issues, successes, aha's & triumphs of project to date</p> <p><i>Begin relationship with EBP Mentor</i></p>	
Checkpoint Ten	Complete final data collection for	

	project evaluation Present project results via poster presentation—locally & nationally <i>Celebrate with EBP Mentor & Agency Leadership</i>	
Checkpoint Eleven	Review project progress, lesson learned, new questions generated from process <i>Consult with EBP Mentor about new questions</i>	

Tool from Melnyk & Fineout-Overholt, 2011—permission granted for student use per Appendix M, p 557.

Appendix H: Sample Clinical Indicator Report

SIGNIFICANCE TEST LEGEND:

CLINICAL CHARACTERISTIC MEASURES

Statistically significant differences at 95% confidence level.

NS - Statistically Significant.

Data with 2 std dev of the mean.

NA - Insufficient Sample Size.

CLINICAL PRACTICE MEASURES

Statistically significant differences at 95% confidence level.

TP - Top Performer.

OI - Opportunity for Improvement/Investigation.

Data with 2 std dev of the mean.

CLINICAL INDICATOR STUDY (CIS) REPORT

PERIOD:

SITE:

FACILITY:

DEMOGRAPHIC MEASURES

	EVERCARE	SITE	EVERCARE BENCHMARK	N	FACILITY METRIC
Total Population	0.00%	0.00%		0	0.00%
Average Age (Years)	0.00%	0.00%		0	0.00%
Gender(s) - Female	0.00%	0.00%		0	0.00%
ALOS in Evercare (Months)	0.00%	0.00%		0	0.00%
Race Caucasian	0.00%	0.00%		0	0.00%
Denies CPR	0.00%	0.00%		0	0.00%

CLINICAL CHARACTERISTICS MEASURES

	EVERCARE	SITE	EVERCARE BENCHMARK	N	FACILITY METRIC	HIGH or LOW	Significance Test ***
						Outlier Result Facility vs Evercare	Facility vs Evercare Facility vs Site Facility vs Benchmark
Bladder Incontinence	0.00%	0.00%		0	0.00%		
Bowel Incontinence	0.00%	0.00%		0	0.00%		
Involuntary Urinary Catheter	0.00%	0.00%		0	0.00%		
Feeding Tubes ****	0.00%	0.00%		0	0.00%		
Feeding Tubes - Present Prior to EYC Admission ****	0.00%	0.00%		0	0.00%		
Pressure Ulcers - At Risk	0.00%	0.00%		0	0.00%		
Pressure Ulcers - Current	0.00%	0.00%		0	0.00%		
Pressure Ulcers - Stage II or Greater ****	0.00%	0.00%		0	0.00%		
Pressure Ulcers - Present Prior to EYC Admission ****	0.00%	0.00%		0	0.00%		
Weight Loss	0.00%	0.00%		0	0.00%		
Weight Loss - Unexpected	0.00%	0.00%		0	0.00%		
Fall - in the Last 30 Days	0.00%	0.00%		0	0.00%		
Fall - Resulting in Serious Injury	0.00%	0.00%		0	0.00%		
Physical Restraints - Excluding Side Rails	0.00%	0.00%		0	0.00%		
ADL Dependence - Average # Excluding Ambulation	0.00%	0.00%		0	0.00%		
ADL Dependence - 4 or More Excluding Ambulation	0.00%	0.00%		0	0.00%		
Active Depression	0.00%	0.00%		0	0.00%		
Chronic Dementia	0.00%	0.00%		0	0.00%		

CLINICAL PRACTICE MEASURES

	EVERCARE	SITE	EVERCARE BENCHMARK	N	FACILITY METRIC	HIGH or LOW	Significance Test ***
						Outlier Result Facility vs Evercare	Facility vs Evercare Facility vs Site Facility vs Benchmark
Vaccine - Pneumococcal	0.00%	0.00%	0.00%	0	0.00%		
Vaccine - Pneumococcal - Refused	0.00%	0.00%	0.00%	0	0.00%		
Vaccine - Influenza	0.00%	0.00%	0.00%	0	0.00%		
Vaccine - Influenza - Refused	0.00%	0.00%	0.00%	0	0.00%		
Medications - Routine - 0 or More	0.00%	0.00%	0.00%	0	0.00%		
Medications - Routine - Average Number	0.00%	0.00%	0.00%	0	0.00%		
Depressed 0 or More Depressed	0.00%	0.00%	0.00%	0	0.00%		
Medication - Anxiolytic - Routine ****	0.00%	0.00%	0.00%	0	0.00%		
Medication - Anxiolytic - PRN ****	0.00%	0.00%	0.00%	0	0.00%		
Medication - Antipsychotic - Routine ****	0.00%	0.00%	0.00%	0	0.00%		
Medication - Antipsychotic - PRN ****	0.00%	0.00%	0.00%	0	0.00%		
Medication - Hypnotic - Routine ****	0.00%	0.00%	0.00%	0	0.00%		
Medication - Hypnotic - PRN ****	0.00%	0.00%	0.00%	0	0.00%		
Medication - Mood Stabilizer	0.00%	0.00%	0.00%	0	0.00%		
Medication - VLD Prescription	0.00%	0.00%	0.00%	0	0.00%		
Pain Assessment	0.00%	0.00%	0.00%	0	0.00%		
Functional Assessment	0.00%	0.00%	0.00%	0	0.00%		
Advance Care Plan	0.00%	0.00%	0.00%	0	0.00%		
Annual Medication Attestation - Noncompliance	0.00%	0.00%	0.00%	0	0.00%		
Post-Discharge Medication Reconciliation - Noncompliance	0.00%	0.00%	0.00%	0	0.00%		

FOOTNOTES

- For each measure, provider patient populations were limited to approximate a normal distribution. Once normality was established, the benchmark was based on the mean of the top 50% of providers.
 - High or Low Outlier results are defined as outcomes that display a greater than 2 standard deviation difference from Evercare mean.
 - For each measure, provider patient populations were limited to approximate a normal distribution. Once normality was established, 2-tests between groups were calculated to determine significant differences. Providers with insufficient patient populations were excluded from the analysis.
 - The denominator is the same for "Pressure Sores" and "Pressure Sores-Present prior to EYC Admission."
 - The denominator is the same for "Feeding Tubes" and "Feeding Tubes-Present prior to EYC Admission."
- PLEASE NOTE: Null Values are excluded from the Numerator, but included in the denominator of the calculations. The Routine and PRN medication categories are not mutually exclusive, therefore the sum will not equal the total members on medications.

Appendix I—NP Implementation Survey

CPR Video Pilot

Scale

1-strongly disagree 2-disagree 3-acceptable 4-agree 5-strongly agree

1. Did you feel the initial preparation and education was sufficient to implement the CPR video decision tool?

Range 3-4; Mean 3.375

2. Did you feel you were able to integrate the CPR video decision tool into advance care planning discussions?

Range 1-2; Mean 1.25

3. Recommendations to improve use of the CPR video decision tool:

Implement at or prior to admission when family present—3 comments
Try using at a family night group presentation—2 comments

4. Recommendations to improve initial preparation and education process:

Do presentation to nursing home DON & LSW
Do presentation to MDS nurse and other nursing leadership

5. Detail challenges you identified in integrating the CPR video decision tool:

Lack of family involvement—4 comments
Unable to get family to call back or respond—4 comments
Lots of technological challenges—6 comments
Seemed too late—need to use before admission to nursing home

Appendix J—Post Implementation Call Log

Date	Concern	Action Plan	Comments
Jan 3, 2012	Unable to get video to load on laptop	Work with Jason in IT	New software pushed to all NPs' laptops
79% participation		Obtain file in different software from Dr. Volandes	
		Jason to download video files to sharepoint site	
Jan 10, 2012	Everyone verified access to video on laptop and sharepoint		
79% participation	Request for hard copy DVDs to share with family members	Gina to burn DVDs and send to families at NP request	Software requested & installed on Gina's computer to burn DVDs
Jan 17, 2012	Families / residents state it's "God's will" and will die despite CPR	Mirror terms used by pt/ family; emphasize control of destiny; decide for self in advance; Support spiritual piece for pt / family	
65% participation			
Jan 24, 2012	Shared with nursing leadership and had positive comments	Add to list of improvements for next rollout	
79% participation			
Feb 28, 2012	When can use be expanded beyond pilot facilities?	4/1/12 is plan to implement across site	
50% participation			