ADDRESSING HEALTH LITERACY AND COLLABORATION IN MOBILE CLINICS
UTILIZING TEACH-BACK METHODOLOGY AND HEALTHCARE PROVIDER TRAINING

A Scholarly Project
Submitted to the
Faculty of Liberty University
In partial fulfillment of
The requirements for the degree
Of Doctor of Nursing Practice

By
Mark Robert Drye
Liberty University
Lynchburg, VA
February, 2019

Scholarly Project Committee Approval:

Dr. Lynne S. Sanders, EdD, MSN, RN, CNE, Chair, February 22nd, 2019
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ABSTRACT

Focused healthcare provider teaching was used to increase health literacy sensitive care and to improve interdisciplinary collaboration between providers in a mobile clinic setting that serves significantly underserved and socioeconomically challenged populations. The teach-back method was selected as one of the tools to help providers help their patients overcome health literacy challenges by increasing compliance and helping providers engage their patients in collaborative care. Multidisciplinary providers working in a large university clinic system in the southern United States ($N = 20$) were surveyed, provided focused training, and resurveyed to determine if provider practices addressing health literacy and interdisciplinary collaboration could be improved. Analysis of the pre- and post-test results demonstrated a clinically significant improvement in the overall stated competence and desire to improve in these areas. Achieving optimal health outcomes with limited resources is a continued challenge for our healthcare system today and this project demonstrates that providers can make an impact on outcomes through focused intervention. This project used focused provider training to highlight problems with health literacy and collaboration and encourage further engagement. Further research should focus on long-term patient outcomes from improved provider training.

Keywords: health literacy, interdisciplinary collaboration, focused training, patient outcomes, teach-back
Dedication

All praise, honor, and glory belong to my Savior Jesus Christ, without whom I would be endlessly chasing after my own dreams and wasting my every breath. “The heart of man plans his way, but the Lord establishes his steps” (Proverbs 16:9).
Acknowledgments

My wife has been the biggest single supporter of my work and who throughout this program has always supported me and took the brunt of the home life responsibilities so that I could focus on the seemingly never ending number of projects including this scholarly work. She amazes me each and every day and I am so thankful for her support, I definitely could not have done this without her!

I also need to thank Dr. Eva Dubois who has been an influential supporter of my past and present academic work and who helped facilitate this project’s completion and IRB support, it is always a pleasure to work with her and I appreciated her insights.

Finally, my project chair Dr. Lynn Sanders has been a constant cheerleader since the beginning when I had to completely remake my project from the ground up, she has never once stopped supporting me and providing extraordinary guidance all the way through completion.
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List of Abbreviations

Agency for Healthcare Research and Quality (AHRQ)
American Association of Colleges of Nursing (AACN)
Collaborative Institutional Training Initiative (CITI)
Doctor of Osteopathy (DO)
Doctorate of Nursing Practice (DNP)
Evidence-based Practice (EBP)
Emergency Department (ED)
Family Nurse Practitioner (FNP)
Health Literacy (HL)
Inter Professional Education (IPE)
National Assessment of Adult Literacy (NAAL)
Nurse Practitioner (NP)
Point of Care (POC)
Population, Intervention, Comparison, Outcome, and Time (PICOT)
Quick Response (QR)
Registered Nurse (RN)
Statistical Package for the Social Sciences (SPSS)
Introduction

Decreased healthcare literacy is a prevalent issue that affects costs, mortality, and morbidity for many patients and healthcare systems. Healthcare providers aggravate the problem when they do not use clear communication techniques, use excessive jargon, or fail to utilize interdisciplinary collaboration and are unable to develop plans of care that are understandable and achievable for their patients. Underserved patients and those with poor health literacy are distinctly disadvantaged when it comes to being able to comply with care plans either through lack of financial resources, or through lack of the simple inability to understand instructions. This failure to comply results in increased emergency room visits (Griffey et al., 2014), more frequent hospital admissions (Jessup, Osborne, Beauchamp, Bourne, & Buchbinder, 2017), and ultimately higher mortality (Smith, Jackson, Kobayashi, & Steptoe, 2018).

Healthcare providers have a responsibility to provide care that is culturally sensitive and appropriate for their patient’s literacy level and resources while respecting their values and preferences. Focused provider training methods have been shown to be successful when used for specific interventions (McKay & Weerasinghe, 2018) and teach-back methodology has been demonstrated to be an appropriate patient teaching tool that improves competence and compliance (Payne, 2017). These concepts were utilized in this project to encourage interdisciplinary collaboration, health literacy appropriate care plans, and the use of the teach-back method to increase patient comprehension to improve care and decrease costs associated with poor health literacy.

Background

This project involved implementation of health literacy training for providers who are working in underserved populations such as shelters, community health departments, and low-
income and elderly housing projects. A large university clinic system in the southern United States served as the organization practice site conducting these clinics using interdisciplinary students from the schools of pharmacy, school of nursing for both registered nurse (RN) and nurse practitioner (NP) programs and a doctor of osteopathy (DO) school of medicine to assist in patient care while obtaining valuable clinical experience. The organization had already been conducting these types of mobile clinics and screenings for several years without revision. Prior to this project, there had been no changes in the approach to management of chronic disease conditions or medication reconciliation, and there was an identified need to develop achievable plans for these patients from the providers to ensure patient understanding and compliance.

**Problem Statement**

Poor health literacy is a significant issue for the general population, but it is magnified by lack of resources and poverty. Underserved patients who are affected by health literacy have worse health outcomes (Bostock & Steptoe, 2012). Newer healthcare providers may not understand how health literacy affects the development of plan of care and overall patient compliance. This lack of understanding directly contributes to poorer outcomes, and a lack of interdisciplinary coordination decreases patient understanding of complex healthcare needs. There is a need for specific health literacy training and interdisciplinary collaboration to improve patient outcomes and maximize healthcare resources (Gwynn et al., 2016; Geboers, Reijneveld, Koot, & de Winter, 2018). Underserved and socioeconomic depressed patients may have difficulty in completing plans of care or acquiring appropriate healthcare resources to include medications, specialists, and transportation. These patients require additional support and understanding of those challenges from healthcare providers as well as organizational changes that improve organizational health literacy (Lloyd et al., 2018).
**Project Purpose**

The purpose of this project was to use focused health literacy and interdisciplinary collaboration training to improve attitudes, perceptions, and treatment plan construction and compliance among healthcare providers in a mobile clinic setting. Interdisciplinary collaboration can be an effective intervention addressing the needs of underserved and socioeconomic challenged patients (Wellmon et al., 2017), and this project emphasized this concept with focused training and provider feedback. Providers were selected based on their participation in the mobile clinics and were provided a pre-test prior to focused training which was conducted in an online module and then re-tested to determine if the focused training had a measurable impact on the providers’ practice.

**Clinical Question**

This project evaluated whether implementing focused healthcare provider teaching in best practices for teach-back, interdisciplinary collaboration, and health literacy considerations helped overcome barriers of health literacy for this population. The population, intervention, comparison, outcome, and time (PICOT) tool helped development of the clinical question for this project and its supporting literature (Moran, Burson, & Conrad, 2014). The population (P) of interest was identified as healthcare providers who provide care for adults 18 years of age or older, who are medically underserved as defined as living in high-poverty areas or with limited access to primary care providers who may be living in community shelters, assisted living facilities, or half-way houses and have limited resources and are strongly effected by health literacy. Primary interventions (I) included the use of an online training module outlining best practices in health literacy considerations, teach-back methods, and interdisciplinary collaboration for treatment planning and chronic disease management and a pre-implementation
provider practice survey. The comparison (C) was measured using a post-implementation survey with the outcome (O) assumption that provider practice would change after initial training leading to improvement of healthcare provider understanding of health literacy considerations, teach-back methods, and interdisciplinary collaboration. This was conducted over a three-month period in a large university clinic system in the southern United States.

**Literature Review**

**Search Strategy**

To accomplish the step of evidence retrieval searches with Academic Search Premier, CIHNAL, ERIC, Medline (ESBCO), Cochrane review, Liberty University Digital Commons, and the National Guideline Clearinghouse were made to obtain data using searches of key words “health literacy, teach-back, mortality, outcomes, and collaboration” within the past five years. Search results retrieved over 43,456 peer-reviewed articles that were narrowed down to 29 articles that were relevant to the project and current within the last five years, in the English language, and assigned an overall grade utilizing the Melnyk Levels of Evidence guide (Melnyk & Fineout-Overholt, 2015).

**Critical Appraisal**

**Health literacy.** Poor health literacy (HL) is a widespread problem that adversely affects older and socioeconomic disadvantaged individuals and families (Corrarino, 2013; Miller, 2016; Shah, Desai, Gajjar, & Shah, 2013). In a secondary analysis of the original National Assessment of Adult Literacy (NAAL) study conducted by Cutilli, Simko, Colbert, and Bennett (2018), there was strong indication that as health literacy overall decreases older adults using health information also decreases. HL can be multifactorial (Shah et al., 2013) and drives the importance of open dialog with healthcare providers and patients to understand barriers to
facilitating care and treatment. Hardman and Newcomb (2016) examined barriers to older adults in rural and semi-rural communities that limited their ability to receive appropriate follow-up and showed common trends that included misunderstanding of follow up requirements, and inability to understand medication administration. Miller (2016) validated this concept in a 220-article meta-analysis associating increased HL with positive medication adherence and HL-related interventions increasing HL and overall adherence.

**Literacy related mortality.** Overall, all cause mortality is higher among community-dwelling elderly adults who have inadequate HL, primarily measured by reading fluency. There is a significant association between reading ability and socioeconomic status and health (Baker, Wolf, Feinglass, & Thompson, 2008). In a longitudinal study conducted by Bostock and Steptoe (2012) following 7,857 adults to determine the relation between functional literacy and all cause mortality, the authors noted that poorer understanding was associated with higher all cause mortality. HL related mortality is a significant concern and is one of the driving reasons healthcare providers need to be concerned with understanding how to effectively address HL when developing and implementing care planning. Sand-Jecklin, Daniels, Lucke-Wold (2017) screened 25,557 patients for HL and identified 5,098 with low HL as high risk with a significant correlation for increased health problems and more frequent emergency room visits and admissions.

**Interdisciplinary collaboration.** Promoting quality and effective care for patients with low HL is challenging when there are increased socioeconomic barriers. It is essential for healthcare providers to engage and promote interdisciplinary collaboration to improve quality and continuums of care. Older adults perceive increased quality of care when care is comprehensive (Tsakitzidis et al., 2016) and are more likely to need multiple specialists and
resources to optimize their care. Shah et al. (2013) stressed that patient education is more effective in decreasing misunderstanding related to labeling, dosing, and other medication related issues. Medication adherence and understanding is also enhanced when NPs and pharmacists collaborate, and patients benefit from the different approaches to medication teaching and monitoring (Funk, Paffrath & Anderson, 2017).

**Teach-back methodology.** Teach-back is an education tool that has been shown to be highly effective in increasing patient understanding and compliance with treatment plans and addressing HL voids. This is a valuable skill for healthcare providers helping patients to confirm learning, remember key information, and improve communication (Samuels-Kalow, Hardy, Rhodes, & Mollen, 2015/2016). Comprehension is essential for ensuring that patients who may not have understood the information and treatment plan provided to them to be able to adequately manage their conditions while minimizing unnecessary returns for duplicate care (Griffey et al., 2015; Payne, 2017). Yin, Jay, Maness, Zabar, and Kalet (2015), in their systematic review of HL outcomes, showed that healthcare providers can address HL using methods such as teach-back, plain language materials, and positive HL environments. Fransen, Beune, Baim-Lance, Bruessing, and Essink-Bot (2015) explored the difference in perceptions between providers and patients with low HL regarding chronic diabetes management demonstrating that patients did not respond well to simple repetitive information even though providers used that method as their primary intervention in addressing low HL. This is why teach-back methodology is so effective because it incorporates patient engagement and response and is recommended by the Agency for Healthcare Research and Quality (AHRQ, 2017).
Synthesis

Within the body of research, there is overwhelming agreement that health literacy is directly related to greater mortality and morbidity, especially in lower socioeconomic groups. There is also a need to reduce the barriers of health literacy and providers can be trained to utilize methods such as teach-back, which has been shown to be effective in improving comprehension of treatment plans and can be implemented in multiple settings. Several studies indicated that there are multiple factors that can impact care plan and medication compliance, and these can include the age of clients, system barriers, and finances. Fransen et al. (2015) pointed out an often overlooked issue of the perceptions between clients and providers about their motivations and attitudes that may not be accurate. Cutilli et al. (2018) identified that the best opportunity to educate older adults is during provider patient interactions and providers should not assume that patients will obtain health information from other sources. It should be noted that the literature did not clearly define one specific intervention that was superior, and success may be influenced by multiple demographic and socioeconomic factors (Kaphingst et al., 2014).

Conceptual Framework

This project utilized the revised 2017 Iowa model of evidence-based practice (Iowa Model Collaborative, 2017), which was an ideal model for the implementation of practice change with the population due to its integrated feedback loops and continual quality improvement methodology (see Appendix D). The model specifically organized interventions that affect patient outcomes. One major benefit of this model was that it required consideration of whether an issue or trigger was significant enough to warrant the resources necessary to pursue the evidence-based practice (EBP) process and it helped to “avoid the development of
programs that emphasize processes without considering the organizational climate in which these processes occur” (Johnson, Gardner, Kelly, Mass, & McCloskey, 1991, p. 261). Key considerations, or triggers, in addressing provider competence in health literacy were noted to be the need for cost savings and the reduction of the burden of disease in disparaged groups including low-income families and minorities. Utilizing the Iowa Model, interventions were tailored to suit the community dynamics and resources through the constant use of feedback loops and evaluation in conjunction with the supporting agencies at supporting organization. Specific steps in the Iowa Model that had to be conducted included the topic selection, team formation, evidence retrieval, grading of the evidence, development of an EBP standard, implementation of the EBP in the mobile clinic setting, and final evaluation through the use of online surveys.

**Summary**

The primary trigger for this project was the growing body of evidence that demonstrated health illiteracy’s direct effect on health outcomes, which had been identified as a concern within the mobile clinic setting of this project. For healthcare providers, it is essential to understand the impact of health literacy and appropriate interventions that can reduce its impact such as interdisciplinary collaboration and teach-back methods. A literature review (see Appendix A) was conducted that provided clear indication that this is a significant issue and that there are several potential interventions that can be utilized to address the need for better health literacy support and increased interdisciplinary collaboration. Support for this project was excellent due to the buy-in from the various stakeholders and different healthcare disciplines that wanted to encourage interdisciplinary collaboration and teamwork that would benefit the community.
Methodology

Design

This scholarly project was conducted using electronic surveys administered to participants before and after implementation of focused health literacy and interdisciplinary training. The quasi-experimental design was selected as the preferred design because the same providers were delivered the focused training intervention, allowing for easier assessment of pre- and post-test results. This is consistent with the Iowa Model requirement for evaluation of pilot test results prior to implementation of practice change implementation (Hall & Roussel, 2014; Iowa Model Collaborative, 2017).

Measurable Outcomes

There were two short-term primary measurable outcomes that were expected in this project. The first was increased provider confidence in health literacy and interdisciplinary collaboration management; the second was improved likelihood of providers practicing health literacy competent care and interdisciplinary collaboration measured by direct responses from surveyed participants self-reported confidence levels.

Practice Setting

The clinical setting for this project was a mobile clinic organized and operated through grant funding at a large university system in the southern United States, which served as the supporting organization for this project (see Appendix C). The clinic model primarily operated in under-served low socioeconomic areas including shelters, senior living facilities, and community centers. The mobile clinics were permanently staffed by a family nurse practitioner (FNP) and had rotating ancillary staff including licensed pharmacists, nutritionists, physical therapists, medical doctors, and nursing staff. Diagnostic capabilities available included point of care (POC)
lipid and glucose testing, and patients could be referred to multiple agencies for additional lab work as necessary. Service provided typically included complete medication reconciliation with appropriate medication teaching by a licensed pharmacist, physical exam by medical doctor or NP, and health promotion and disease prevention teaching by nurses and nutritionists. Nursing staff obtained vital signs and initial health history information, and afterwards, evaluation recommendations were made by healthcare providers for any additional diagnostic evaluations or medications and could include referral to additional specialists or resources.

The majority of the population in this area consists of low socioeconomic minorities and underserved rural residents who utilize the emergency department (ED) as their primary care resource. The mobile clinic does not routinely serve pediatric clients but does occasionally assist families with health needs. The population served is predominantly over the age of 21 and consists of approximately 400 clients during the peak season of April-June. Follow-up care remains a major concern with these individuals as many have transient housing and because they fail to take medications and follow patient teaching regarding prevention and management.

Population

The population included a convenience sample of 20 participants from various healthcare disciplines including nurses, NPs, pharmacists, social workers, and physicians who all participated as providers in the mobile clinic. These participants were recruited by providing information at two Inter Professional Education (IPE) events at the university system campus. They all received the same training and pre- and post-test surveys as part of the quasi-experimental design structure. Demographic analysis indicated 13 nurses, 2 pharmacists, 1 physician, 2 mid-level providers, and 2 social workers responded. The primary degree held was a bachelor’s with only five participants holding a master’s degree or higher. Average age among
the participants was 25 years old and there was a significant gender bias with 18 female participants and only 2 male participants.

**Ethical Considerations**

The primary patient population setting included the vulnerable population of economically or educationally disadvantaged populations and care was taken to lower their risk. The project design did not capture any identifying participant information other than basic demographics such as age, gender, and nationality. There were no identifiable ethical issues noted with the study design itself, but the overall project purpose served to eliminate or reduce the social justice issue of access to care. Moran et al (2014) emphasized that social issues can and should be addressed using the highest-level of evidence available and this is a relevant social need. Informed consent was provided to all participants after approval by the Liberty University Institutional Review Board (IRB) (see Appendix I) and with letter of support with corresponding IRB approval from the supporting organization prior to beginning the scholarly project implementation (see Appendix J). Participants were recruited at each IPE event with information letters distributed to interested participants outlining the purpose of the project with the participant expectations and affirmation of confidentiality. All participants had to confirm that they had reviewed and accepted the informed consent (see Appendix K) prior to being able to enter and complete the initial survey. Care was taken to ensure participants that consent to participation did not necessitate a lower standard of care to their clients than they would otherwise provide as healthcare providers. Collaborative Institutional Training Initiative (CITI) certification was obtained and maintained by the principal investigator (see Appendix B).
Data Collection

After initial recruitment and informed consent, participants were directed to a project website containing the information letter, with links to both the pre- and post-test and training module. Response data was collected using an online survey platform secured by a password known only by the principal investigator. The initial survey (see Appendix L) asked participants to answer questions as they related to the participants’ current practice as part of a pre-test format. After initial surveys were completed, the participants were directed to review the training module and spend at least two weeks in practice before completing the final survey (see Appendix M) to obtain post-test data. Twenty-one participants completed the initial survey, and only 20 completed the final survey. Results were cross-linked using self-assigned pins from the participants to link their initial and final surveys, and the single non-matching survey response was removed from the data analysis. Survey results were downloaded into a spreadsheet format, which could be uploaded into the Statistical Package for the Social Sciences (SPSS).

Tools

The pre- and post-test survey questions were developed after reviewing the literature for the provider training module (see Appendix N) and were extrapolated from the teaching points to validate whether the knowledge and practices were used in practice prior to receiving the provider training or if there was improvement in those areas post provider training. The initial and final provider surveys not only reinforced the key points of training but also included the pre- and post-test outcome evaluations of provider confidence and likelihood to participate in interdisciplinary collaboration. This particular design increased the survey’s face validity as it closely focused on the specific topic related competencies (Moran et al., 2014). Reliability is directly related to validity, and the survey results were entered into SPSS and evaluated for inter-
rater reliability using the intraclass correlation coefficient (see Table 1), which was shown to be 0.885 indicating a high inter-rater reliability (Sullivan, 2012).

Table 1

<table>
<thead>
<tr>
<th></th>
<th>Intraclass Correlation$^{b}$</th>
<th>95% Confidence</th>
<th>F Test with True Value 0</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lower Bound</td>
<td>Upper Bound</td>
<td>Value</td>
</tr>
<tr>
<td>Single Measures</td>
<td>.141$^{a}$</td>
<td>.092</td>
<td>.224</td>
</tr>
<tr>
<td>Average Measures</td>
<td>.885$^{c}$</td>
<td>.827</td>
<td>.931</td>
</tr>
</tbody>
</table>

The Provider Training Module was developed as an online tool to disseminate the key points of intervention and best practices for addressing health literacy barriers and encouraging interdisciplinary collaboration. The primary source for the teach-back methodology was derived with permission (see Appendix F) and consisted of a methodology (see Appendix G) and teaching outline (see Appendix H) integrated into the teaching module.

**Intervention**

Development of this project started with the discussion of the supporting organization’s mobile clinics need for improved provider engagement and emphasis on interdisciplinary collaboration and health literacy competence. After initial intervention development and statement of support (see Appendix C), IRB approval was obtained from both Liberty University and the supporting organization IRB prior to project implementation. In conjunction with the supporting organization, the decision was made to recruit participants during the IPE events to allow for better dissemination and discussion of the project with potential participants and maximize the potential applicant pool. All potentially interested applicants were provided with a quick response (QR) code that users could scan with their smart phones or tablets which would
take them to the project website that included the full information letter, instructions for participation, informed consent documents, and the applicable online surveys and provider training modules. Participants accepted and then completed the initial provider survey that focused on eliciting current practice characteristics of their clinic and individual professional behavior that were developed from the outline of the provider training module to emphasize the specific key points that would be addressed concerning health literacy and interdisciplinary collaboration. This was estimated to take approximately 20 minutes. At the completion of the initial provider survey, instructions were provided on how to access the provider-training module, which they were expected to complete prior to their return to clinical practice and before completing the final provider survey. The provider-training module was developed as a self-guided PowerPoint™ presentation (see Appendix N) that participants would review and reference as needed. After training completion and return to clinical practice, participants were then directed to complete the final provider survey online, which reexamined the clinic and personal practice characteristics to evaluate for change.

Data from the online surveys was collected by the survey distribution portal and downloaded by the lead investigator four weeks after the initiation of the intervention. The data collected was transposed into spreadsheets for uploading into SPSS software for further analysis. All initial and final surveys were cross-linked using the user-assigned pins to ensure that there were matching pre- and post-test surveys; there was only one unmatched survey that was removed from the data sample. Initial analysis focused on demographic information and evaluation of whether there was improvement in the expected short-term outcomes. Upon completion of the data review, scholarly project results were disseminated to the supporting organization and project chair for review.
Table 2

**Timeline**

<table>
<thead>
<tr>
<th>Action Steps</th>
<th>Responsibilities</th>
<th>Timeline</th>
<th>Resources</th>
<th>Communications Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: Develop Scholarly Project Proposal</td>
<td>Develop complete scholarly project proposal</td>
<td>March 2018</td>
<td>A. Literature review (library services)</td>
<td>Completed and disseminated to department chair, affiliated agencies, practicum preceptor.</td>
</tr>
<tr>
<td>Step 2: Project Proposal Defense</td>
<td>Development of project defense PowerPoint and defense meeting.</td>
<td>March 2018</td>
<td>A. Requires PowerPoint presentation, WebEx, online connection</td>
<td>Presented and defended via WebEx meeting with project chair.</td>
</tr>
<tr>
<td>Step 3: IRB approval</td>
<td>Obtain IRB approval and letter of support from supporting organization.</td>
<td>July 2018</td>
<td>A. IRB submission paperwork, CITI certificates, approved permissions for IOWA model and teach back tool</td>
<td>Filed and IRB obtained from both Liberty and supporting organization.</td>
</tr>
<tr>
<td>Step 4: Obtain initial project data from pre-test</td>
<td>Conduct initial data collection.</td>
<td>October 2018</td>
<td>A. Completed project site with links to surveys</td>
<td>Presented at both IPE events.</td>
</tr>
<tr>
<td>Step 5: Present project intervention</td>
<td>Disseminate Focused Provider Training.</td>
<td>October 2018 – December 2018</td>
<td>A. Completed provider training module uploaded to practice site for participant access</td>
<td>Completed and uploaded to practice site</td>
</tr>
<tr>
<td>Step 6: Obtain final project date from post-test</td>
<td>Conduct final data collection and analysis.</td>
<td>January 2019</td>
<td>A. Survey database access. SPSS software</td>
<td>Data downloaded from survey site and transposed into spreadsheets for evaluation. Data analyzed using SPSS 2.0 with results disseminated to supporting organizations.</td>
</tr>
<tr>
<td>Step 7: Project completion and dissemination</td>
<td>Complete final presentation of scholarly project.</td>
<td>February 2019</td>
<td>A. Final project defense, editor.</td>
<td>Completed scholarly project report and disseminated through defense and publication.</td>
</tr>
</tbody>
</table>
Feasibility analysis. Initial feasibility was analyzed and included consideration of the available resources at the supporting organization practice site, which encompassed practice site personnel, technology needs, any budget requirements or grant funding needs, and expected cost impact of the project. The mobile clinics at the practice site, including the available healthcare provider staffing, were already completely funded with grants, and this project was not expected to require any additional mobile clinic resources. Online dissemination of the surveys, provider-training module, and data collection were all projected to be conducted using free online platforms and participant supplied computer and Internet access. The cost of the project was, therefore, considered to be minimal and presented no significant barrier or need for further planning and did not require creation of a budget for this project. The potential benefits of improved provider care and decreased cost burden from health literacy related complications far outweighed the minimal potential project cost.

Data Analysis

Data from the surveys was translated into a graphical database format, substituting the Likert-type responses with a corresponding numerical number indicating the strength of the rating where a score of “1” indicated a strong practice or individual application of the question subject, and a score of “4” indicated poor or lack of knowledge regarding the application of the question subject. These results were then analyzed using the SPSS software with an alpha value of 0.05, which corresponded to the obtained sample size. Descriptive analysis was conducted including preliminary analysis to identify any potential outliers or missing data responses and then distribution patterns. Bivariate inferential statistical analysis was conducted using the paired t-test, which evaluated the difference between paired samples before and after. The data collected was normally distributed so the Wilcox signed rank test was not required (Sullivan,
The survey tools were also evaluated for inter-rater reliability using the intraclass correlation coefficient, which demonstrated good inter-rater reliability (Sullivan, 2012).

**Increased provider confidence.** To evaluate for this outcome, a bivariate inferential statistical analysis was conducted within SPSS, a sophisticated statistical analysis software program used extensively in social science applications. Evaluation was performed using the paired t-test to determine if there was a significant change in perceived confidence in knowledge and understanding of health literacy and interdisciplinary collaboration management. The paired t-test was chosen because each subject was measured twice, allowing for paired observations and direct evaluation of improvement in mean scores (Sullivan, 2012) and as a dependent samples test was appropriate for the expected improvement in scores post intervention using a 0.05 alpha level of significance. The survey question “How would you rate your overall confidence in providing health literacy sensitive plans of care to your clients?” was the specific question used for analysis. Scores were input into SPSS with a scale of 1-5 with “1” being equivalent to “Extremely Confident” and “5” being equivalent to “Extremely unconfident.”

**Improved likelihood of interdisciplinary collaboration.** To evaluate for this outcome, a bivariate inferential statistical analysis was conducted within SPSS, a sophisticated statistical analysis software program used extensively in social science applications. Evaluation was performed using the paired t-test to determine if there was a significant change in perceived confidence in knowledge and understanding of health literacy and interdisciplinary collaboration management. The paired t-test was chosen because each subject was measured twice, allowing for paired observations and direct evaluation of improvement in mean scores (Sullivan, 2012) and as a dependent samples test was appropriate for the expected improvement in scores post intervention using a 0.05 alpha level of significance. The survey question “How likely are you to
collaborate with other healthcare disciplines in your routine practice to improve your client's outcomes?” was the specific question used for analysis of this outcome. Scores were input on a scale of 1-5 with “1” being equivalent to “Extremely Likely” and “5” being equivalent to “Not at all likely.”

Results

Descriptive Statistics of Participants

The sample population of providers ($N = 20$) represented a diverse group of clinicians that included 13 nurses, 2 pharmacists, 1 physician, 2 NP/PA providers, and 2 social workers. The primary degree held was a bachelor’s with only five participants holding a master’s degree or higher. Average age among the participants was 25 years old, and there was a significant gender bias with 18 female participants and only 2 male participants. The average amount of time in professional practice was between three and five years and participants were predominantly of White/Caucasian ethnicity with only two Asian/Pacific Islanders and five Black/African Americans. See Table 3 for participant demographics.

Increased Provider Confidence

Inferential statistics were utilized using the dependent paired samples t-test, which allowed for correlation between the pre- and post-test answers of the participants. The results included a mean difference in pre- and post-test scores ($2.85 - 1.70 = 1.15$) and standard deviation ($1.30888$) and standard error of means ($0.29267$). Using a 95% confidence level, the lower and upper limits were determined to be ($0.53743, 1.76257$). The “$t$” statistic was $3.929$ and with 19 degrees of freedom (df) ($N-1$) corresponding to a p-value of $0.001$. This p-value is less than the 0.05 significance level, indicating that participants did have a significant increase in their level of confidence in providing health literacy sensitive plans of care.
Table 3  

*Participant Demographics*

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian / Pacific Islander</td>
<td>2</td>
<td>10.0</td>
</tr>
<tr>
<td>Black or African American</td>
<td>5</td>
<td>25.0</td>
</tr>
<tr>
<td>White / Caucasian</td>
<td>13</td>
<td>65.0</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Degree</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some college but no degree</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Bachelor’s Degree</td>
<td>15</td>
<td>75.0</td>
</tr>
<tr>
<td>Graduate Degree</td>
<td>4</td>
<td>45.0</td>
</tr>
<tr>
<td>Professional Degree</td>
<td>1</td>
<td>5.0</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>18</td>
<td>90.0</td>
</tr>
<tr>
<td>Male</td>
<td>2</td>
<td>10.0</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-24</td>
<td>10</td>
<td>50.0</td>
</tr>
<tr>
<td>25-34</td>
<td>9</td>
<td>45.0</td>
</tr>
<tr>
<td>55-64</td>
<td>1</td>
<td>5.0</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100.0</td>
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</tbody>
</table>

**Improved Likelihood of Interdisciplinary Collaboration**

Inferential statistics were utilized using the dependent paired samples t-test, which allowed for correlation between the pre- and post-test answers of the participants. The results included a mean difference in pre- and post-test scores ($1.95 - 1.35 = 0.6$), standard deviation ($0.82078$) and standard error of means ($0.18353$). Using a 95% confidence level the lower and upper limits were determined to be ($0.21586, 0.98414$). The “t” statistic was 3.269 and with 19 degrees of freedom (df) (N-1) corresponding to a p-value of 0.004. This p-value is less than the 0.05 significance level indicating that participants did have a significant increase in their likelihood of collaborating with other healthcare disciplines.
Discussion

Implication for Practice

Improving health outcomes is an important goal for doctoral-prepared nurses meets the defined essentials for practice as outlined by the American Association of Colleges of Nursing (AACN, 2006). This project met the goals of several Doctorate of Nursing Practice (DNP) essentials, including DNP Essentials I and III utilizing scientific underpinnings for practice and clinical Scholarship and analytical methods for EBP (AACN, 2006), demonstrated by clinical evaluation of the literature in selecting interventions that were appropriate to the subject questions and utilized evidence-based methods such as teach-back methodology (Payne, 2017), and focused provider training (McKay & Weerasinghe, 2018). DNP Essentials II and VI were demonstrated by supporting organizational and systems leadership for quality improvement through the use of focused training to encourage increased interdisciplinary collaboration as a change agent for improved organizational practices and outcomes (AACN, 2006).

The results of this project demonstrated that focused provider training increased confidence in providing health literacy sensitive care and encouraged interdisciplinary collaboration. This is clinically significant because increased health literacy is likely to result in improved patient outcomes, decreased costs and healthcare utilization, and increased patient and provider satisfaction (Geboers et al., 2018; Gwynn et al., 2016), and is consistent with existing literature. This project provided meaningful change to the practice setting by improving provider confidence in patient specific health literacy interventions meeting the needs of the large underserved and socioeconomically disparaged community. As a low cost intervention with a potentially high cost-benefit return, organizations should consider the use of similar training programs to address health literacy and interdisciplinary collaboration initiatives that are
beneficial to healthcare organizations and communities as an alternative to costly system-wide measures that are not provider specific. The project intervention should be utilized in additional practice settings independent of the healthcare disciplines involved to increase system-wide improvement in health literacy related interventions and a culture of interdisciplinary collaboration.

**Limitations of the Study**

Primary limitations for this project include a small sample size \( N = 20 \) and there are additional disciplines that were not represented in the sample such as dieticians who are an integral part of interdisciplinary chronic disease management. There was a potential gender bias present with 18 female respondents versus only 2 male respondents. It is unclear if this would impact individual confidence levels or the perceived likelihood of interdisciplinary collaboration. The short time frame between training and re-evaluation may impact the overall scores, though it is unclear whether it would cause an increase or decrease in mean scores overall. A more extended evaluation period would be ideal to eliminate any potential confounders and provide increased reliability of results.

**Sustainability**

After development and implementation of an evidence-based or quality improvement project, long-term goals should always include sustainability (McGahee, 2016). Relevant factors that can influence support for sustainability include leadership support, stakeholder engagement, identification of a project leader, and the need for continual re-evaluation and potential modification of the developed processes (McGahee, 2016). The framework for this project, the Iowa model (see Appendix E) outlines the continual loop after dissemination requiring re-evaluation for any potential changes in organization or knowledge-based triggers indicating the
need for consistent and frequent assessment of the project results and protocols during its continued utilization. This project contains a highly sustainable and low-cost intervention adding to its likelihood of sustainable success. To maintain long-term sustainability, this project would require minimal effort to maintain the provider-training module of the project but further study will be needed to determine if the improvements identified in this project remained stable over time or require constant reinforcement. This project was remarkably well tested through a diverse group of clinicians indicating this could easily be used in multiple practice settings and with different disciplines, and the supporting organization stakeholder engagement strongly supports its continued utilization.

**Dissemination**

The dissemination plan for this project is a critical aspect of planning to improve organizational outcomes. Initial dissemination will encourage key stakeholders that the results confirm the importance and value of provider training. Clear communication strategies must be selected to maximize the results and be conducted in a timely manner to maintain relevance. The project results will help drive practice change in the mobile clinic setting to address the needs of a diverse underserved and socioeconomically disparaged patient population. The focused provider training concepts and even the module itself can be utilized and replicated in similar practice settings within the community. This project can serve as a foundation for future studies that can evaluate potential improvement in patient outcomes as a result of improved provider confidence and interdisciplinary collaboration. Initial dissemination was conducted with the supporting organization staff at the practice site. Primary project dissemination will be accomplished through Liberty University’s Scholars Crossing online institutional repository. Additional dissemination of this project will occur through submission to applicable peer-
reviewed journals, poster presentations at relevant conferences, and possible podium presentations.
References


Hardman, B., & Newcomb, P. (2016). Barriers to primary care hospital follow-up among older adults in rural or semi-rural communities. *Applied Nursing Research, 29*, 222-228. doi:10.1016/j.apnr.2015.05.003


doi:10.1016/j.gerinurse.2016.12.003

doi:10.1371/journal.pone.0145455


doi:10.1016/j.pec.2016.01.020


## Appendix A: Literature Review Matrix

<table>
<thead>
<tr>
<th>Article Title and Author</th>
<th>Study Purpose</th>
<th>Sample</th>
<th>Methods</th>
<th>Study Results</th>
<th>Level of Evidence</th>
<th>Study Limitations</th>
<th>Would Use as Evidence to Support a Change?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yin, H. S., Jay, M., Maness, L., Zabar, S., &amp; Kalet, A. (2015). Health literacy: An educationally sensitive patient outcome. <em>Journal of General Internal Medicine, 30</em>(9), 1363-1368. doi:10.1007/s11606-015-3329-z</td>
<td>Show that by determining Educationally Sensitive Patient Outcomes (ESPOs), medical education outcomes research becomes more feasible and likely to provide meaningful guidance for medical education policy and practice.</td>
<td>Systematic review of 82 peer-review studies relevant to the subject matter</td>
<td>Systematic review</td>
<td>Health Literacy is an important potential ESPO and providers can develop skills to address health literacy in practice.</td>
<td>Level 5: Systematic review of descriptive and qualitative studies</td>
<td>Model has not been tested in other settings.</td>
<td>Providers can be trained to address patient health literacy by developing specific skills such as teach-back, plain language written materials, and learning how to...</td>
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<tr>
<td>Kaphingst, K. A., Weaver, N. L., Wray, R. J., Brown, M. L. R., Buskirk, T., &amp; Kreuter, M. W. (2014). Effects of Determine whether health literacy and front-desk engagement impacted two patient outcomes of whether or not respondents.</td>
<td>Randomly selected statewide sample of 3358 English-speaking adult residents of</td>
<td>Correlationa l design. Randomized telephone sampling.</td>
<td>Patients' health literacy skills were not associated</td>
<td>Level 4: Correlational design</td>
<td>Phone sampling only and had no actual measureme</td>
<td>Yes, Important concept to consider as engageme</td>
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<tr>
<th>Sand-Jecklin, K.,</th>
<th>To determine whether</th>
<th>Patients admitted</th>
<th>Descriptive</th>
<th>5,098</th>
<th>Level 6: Convenience</th>
<th>Yes,</th>
</tr>
</thead>
</table>

reported knowing more about their health and made better choices about their health following their last doctor visit.

Missouri

with either outcome. Results may indicate that one attribute of a healthcare organization such as workplace dynamics and patient engagement through question asking may be more important to patient knowledge and health behaviors than patients' health literacy skills.

nt of health literacy from respondents and may not accurately reflect correlation between health literacy and outcomes. nt is multifactorial but weak correlation precludes disregarding importance of health literacy.

The incorporation of a health literacy (HL) screening into the electronic health record (EHR) was feasible. To a large Mid-Atlantic teaching hospital. There was complete documentation of a completed HL assessment for 25,557 of 31,195 patients within a four-month data collection period. This was a completion rate of 81.92%.

Study utilizing a convenience sample were identified as high risk for HL limitations and had a high correlation for admission. Low HL scores had correlation with ED visits, more health problems, and more frequent admission.

Since descriptive study. The sample with limited diversity, no ability to correlate education with HL status. Demonstrates correlation between HL and admission and health problems.


Determine impact of health literacy on women's health. Identify strategies for addressing this public health issue. Electronic databases including CINAHL, MEDLINE, PubMed, and Google Scholar. Key words: health literacy, health behavior, women's health, Comprehensive Literature review. Effective strategies can be used by healthcare providers to address this serious problem, including Level 1: Systematic review of literature. None Yes, demonstrates importance of professional education and community
<p>| Mullan, J., Burns, P., Weston, K., McLennan, P., Rich, W., Crowther, S, … Osborne, R. H. (2017). Health literacy amongst health professional university students: A study using the health literacy questionnaire. Education Sciences, 7(2), 54. doi:10.3390/educsci70  | Determine how health literacy affected healthcare providers and whether the HLQ was appropriate in this setting. | 374 students (24% response rate) with a median age of 25 years (range: 17-61 years), returned completed surveys. Three students who did not identify their degree programs were excluded from the final | A survey containing the Health Literacy Questionnaire (HLQ) was administered to students enrolled in university-based medical, allied health | Results show that health literacy profiles are different across student groups. In order to provide excellent patient- | Level 4: Cohort study | There was a disproportionate amount of medical students compared to other disciplines and a broad range of training stages represented | Yes, There is a demonstrated need among different healthcare profession for health literacy training. The HLQ may be an |</p>
<table>
<thead>
<tr>
<th>20054</th>
<th>The aim of the present study was to explore perceptions and strategies of healthcare</th>
<th>General practitioners (4), nurse practitioners (5), nurse midwives (1)</th>
<th>Patients with LHL have different</th>
<th>Level 5: Qualitative study</th>
<th>Small population size (n=31) and among</th>
<th>Yes, demonstrates that repetitive...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fransen, M. P., Beune, Erik J A J, Baim-Lance, A. M., Bruessing, R. C., &amp;</td>
<td>Analysis which included 371 respondents; 242 graduate-entry medical students (65%), 67 allied health students (18%) and 62 nursing students (17%)</td>
<td>or nursing degree programs. The HLQ scores and scale scores were compared across student groups.</td>
<td>centred care, and to successfully look after their own health, a high level of health literacy is required by health professionals. Health literacy training modules, tailored according to the different needs of professional groups, should therefore be included.</td>
<td>which may limit application to general population</td>
<td>ideal tool for use in this project if additional validation data can be obtained</td>
<td>---</td>
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</table>

| Providers regarding diabetes self-management support for patients with low health literacy (LHL), and to compare their self-management support with the needs of patients with LHL and type 2 diabetes | Perspectives of diabetes self-management than their healthcare providers. Most demonstrated a low awareness of what self-management involves, but did not express needing more information. Some reported several practical barriers to self-management but did not use available information sharing is not effective to counteract need for patients with low HI to obtain healthcare information. Providers described patients with LHL as uninvolved and less motivated patients who do not understand self-management. Their main strategy to improve | Provides (n=9) limits generalization. |
resources to overcome them. Providing and repeating information is not effective in reaching patients with LHL regarding diabetes self-management support. Healthcare providers do not seem to have the insight or the tools to systematically support diabetes self-management was to provide standard information on a repeated basis.
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<tr>
<td>The goal of this study was to characterize perceptions of teach-back in the emergency department (ED) by health literacy</td>
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<td>Fifty-one interviews were completed</td>
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<tr>
<td>In-depth interview study on the ED discharge process examining teach-back techniques in two tertiary care centers (adult and pediatric),</td>
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<tr>
<td>Across all groups, participants felt that teach-back would help them confirm learning, avoid forgetting key information, and improve doctor–patient communication.</td>
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<tr>
<td>Level 6: Single descriptive study.</td>
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<tr>
<td>ED setting only, small sample size.</td>
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<tr>
<td>Yes, teach-back is effective and well received and an important skill for healthcare providers.</td>
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<tbody>
<tr>
<td>To determine if teach-back improves comprehension and perceived comprehension of discharge instructions and satisfaction among patients with limited health literacy (LHL) in the ED.</td>
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<tr>
<td>408 eligible patients were included</td>
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<tr>
<td>Randomized, controlled study among adult patients with LHL, randomized to teach-back or standard discharge instructions.</td>
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<tr>
<td>Patients randomized to receive teach-back had higher comprehension of post-ED care areas: post-ED medication.</td>
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<tr>
<td>Level 2: Randomized control trial</td>
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<tr>
<td>May not be feasible for routine use.</td>
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<tr>
<td>Yes, Teach-back appears to improve comprehension of post-ED care instructions and may be...</td>
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<tr>
<td>n (P &lt; 0.02), self-care (P &lt; 0.03), and follow-up instructions (P &lt; 0.0001), applicable to mobile clinic setting.</td>
<td>numerator</td>
<td>denominator</td>
<td>numerator</td>
<td>denominator</td>
<td>numerator</td>
</tr>
</tbody>
</table>
| Payne, C. (2017). Teach-back methodology to improve patient satisfaction in an urgent care setting. Retrieved from p://digitalcommons.liberty.edu/nurse_grad_proj_schol/13 | The goal of the project was to identify an evidence-based patient education approach based on the teach-back method. | n=12 nurses working the urgent care practice site | Quasi-experimental approach. Nursing staff at urgent care were utilized to obtain information. Staff were also educated about teach-back methodology using lunch and learn sessions to learn about TJC standards | The scores revealed an increase of patient satisfaction scores on the Bivarius Patient Survey System (BPSS) on one patient satisfaction score. | Level 6: Single descriptive study | Small sample size and short time from of study. Author concludes that better longitudinal observation would be very helpful. | Yes, this is relevant to scholarly project and contains several different instruments that may either be usable or modifiable to conduct teach back portions of intervention.
<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>Evaluate the prevalence of drug noncompliance among Indian geriatric patients, explore factors affecting it and examine the impact of educating patients about importance of adhering to drug therapy.</td>
<td>n=200 geriatric patients from various outpatient departments were randomly recruited.</td>
<td>A prospective, intervention randomized control trial. Patients were randomly divided in two groups of 100 individuals; the intervention al group received education about the importance of drug compliance and related issues, and Noncompliance to drug therapy was reported in 77.5% of patients, and was significantly associated with socioecon omic status, prescription-related factors skewed instruction s for use, physical</td>
<td>Level 2: Randomized Control Trial</td>
<td>Small sample size and single hospital site were main limitations</td>
</tr>
<tr>
<td>Hardman, B., &amp; Newcomb, P. (2016). Barriers to primary care.</td>
<td>The purpose of this study was to identify barriers to primary care.</td>
<td>Elderly patients living in rural/semi-rural areas</td>
<td>Explanatory mixed methods</td>
<td>Patients encountered</td>
</tr>
</tbody>
</table>
care hospital follow-up among older adults in rural or semi-rural communities. *Applied Nursing Research: ANR*, 29, 222-228. doi:10.1016/j.apnr.2015.05.003


To assess average effect sizes in studies of: (1) the correlation between patient health literacy and both medication and non-medication adherence, and (2) the efficacy of health literacy interventions on improving health, PsychINFO and PubMed databases were searched (1948-2012). A total of 220 published articles met the criteria for inclusion. Analysis of literature and effect sizes were extracted and articles were coded for moderators.

Health literacy was positively associated with adherence (r=0.14), and this association was Level 1: Meta-analysis. Not all studies were homogenous. Yes, These findings demonstrate the importance of health literacy and the efficacy of health
| Altin, S. V., Finke, I., Kautz-Freimuth, S., & Stock, S. (2014). The evolution of health literacy assessment tools: A systematic review. *BMC Public Health* | Determine how the development of tools measuring HL proceeded in recent years and if scholars considered existing methodological | Two reviewers independently reviewed abstracts/ full text articles for inclusion according to | Systematic review of generic measurement tools developed to assess HL | Identified 17 articles reporting on the development and validation | Level 5: Systematic review of descriptive and | There was no consensus on HL measurement but there was | Yes, reviews multiple health literacy assessments and |

| literacy and treatment adherence. | | | | | | | |

<p>| literacy interventions especially among more vulnerable patient groups. | | | | | | | |</p>
<table>
<thead>
<tr>
<th><strong>Health, 14(1), 1207. doi:10.1186/1471-2458-14-1207</strong></th>
<th>guidance when developing an instrument.</th>
<th>predefined criteria.</th>
<th>by searching PubMed, ERIC, CINAHL and Web of Knowledge (2009 forward).</th>
<th>of 17 instrument measuring health literacy.</th>
<th>qualititative studies</th>
<th>evidence towards the trend of using more comprehensive tools.</th>
<th>may give foundational understanding to assessing health literacy using comprehensive tools.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuot, D. S., Davis, E., Velasquez, A., Banerjee, T., &amp; Powe, N. R. (2013). Assessment of printed patient-educational materials for chronic kidney disease. American Journal of Nephrology, 38(3), 184-194. doi:10.1159/000354314</td>
<td>To review the suitability and readability of common PEMs that focused on 5 content areas: basics of CKD, risk factors for CKD development, risk factors for CKD progression, complications of CKD and self-management strategies to improve kidney health.</td>
<td>Reviewed 69 PEMs from 19 organizations, divided into 113 content area sections.</td>
<td>Three reviewers (nephrologist, primary care physician, patient) used the Suitability Assessment of Materials to rate PEMs on message content/stimulation of learning, typography, visuals and layout and determined</td>
<td>Most PEMs for kidney disease were adequate. Outstanding PEMs shared characteristics of patient centeredness, a low literacy level, and patient interaction. Providers should be aware of</td>
<td>Level 6: Single descriptive or qualitative study</td>
<td>Study authors did not have information about how printed PEMs were developed or their original intent or purpose. Other delivery media such as web-based video or audio were not evaluated. Study</td>
<td>Yes, there was good identification of the strengths and weaknesses of printed materials that address health literacy and patient teaching. Data can be used for development</td>
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<td>This study examined the relationships between health literacy, sources of health information, and demographic/background characteristics in older adults (aged 65 years and older) related to health literacy and disparities.</td>
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<td>This study included 2,668 non-incarcerated older adults (aged 65 years and older) who were part of the 18,000-person household sample from the NAAL study. The household sample was determined through a four-stage, stratified area sample: primary</td>
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<tr>
<td>This descriptive, correlational study is a secondary analysis of the 2003 National Assessment of Adult Literacy, a large-scale national assessment.</td>
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<tr>
<td>Older adults with lower health literacy have less income and education, rate their health as poor or fair, have visual or auditory difficulties, need help</td>
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<tr>
<td>Level 6: Single descriptive or qualitative study</td>
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<tr>
<td>This study is limited by being a secondary analysis. The principal investigator did not have control over the original research questions and data collection. As a result, the analysis</td>
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<tr>
<td>Yes, The results expand our knowledge of characteristics associated with health literacy and sources of health information used by older adults</td>
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</table>

This study is limited by being a secondary analysis. The principal investigator did not have control over the original research questions and data collection. As a result, the analysis expands our knowledge of characteristics associated with health literacy and sources of health information used by older adults.
sampling units of counties or groups of contiguous counties, secondary sampling units (segments) of area blocks, housing units with households, and finally eligible persons in households.

- filling out forms, reading newspaper, or writing notes, and use each source of health information less (print and nonprint). Many of these characteristics and skills are predictive of health literacy and associated with health disparities.

- of data was limited by an insufficient number of observations and thus several variables (i.e., language, citizenship) could not be examined. The original NAAL study data is >10 years old and may not reflect changes in the population.

| Geboers, B., Brainard, J. S., Loke, Y. K., Jansen, C. M., Salter, C., Reijneveld, S. A., & ... de Winter, A. F. (2015). The association of health literacy and adherence in adults above the age of 50. Evidence for the association of health literacy and adherence in adults. | A systematic meta-review of systematic reviews was conducted to study the association between health literacy and adherence in adults above the age of 50. Evidence for the association of health literacy and adherence in adults. | Systematic reviews were included if they assessed the association between health literacy and adherence in adults. Both reviews of high and low quality. | Reviews varied widely in quality. Both reviews of health literacy and adherence in adults. | Level 5: Systematic review of descriptive and evidence on the association between health literacy and adherence in older adults. |
| Healthcare provider training | Effectiveness of adherence interventions among adults in this age group with low health literacy was also explored | Adherence or evaluated the effectiveness of interventions to improve adherence in older adults with low health literacy. The AMSTAR tool was used to assess the quality of the included reviews. The selection procedure, data-extraction, and quality assessment were performed by two independent reviewers. 17 were selected for inclusion. | Found only weak or mixed associations between health literacy and adherence among older adults. Reviews report on seven studies that assess the effectiveness of adherence interventions among low health literate older adults. The results suggest that some adherence interventions are effective for this group. The interve | Qualitative studies | Adults is relatively weak. Adherence interventions are potentially effective for the vulnerable population of older adults with low levels of health literacy, but the evidence on this topic is limited. |

<table>
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<tr>
<th>Objective</th>
<th>Study Design</th>
<th>Results</th>
<th>Conclusions</th>
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<tr>
<td>To determine whether low health literacy levels independently predict overall and cause-specific mortality.</td>
<td>Prospective cohort study of 3260 Medicare managed-care enrollees</td>
<td>Hazard ratios for all-cause mortality were 1.52 (95% confidence interval, 1.26-1.83) and 1.13 (95% confidence interval, 0.90-1.41) for participants with inadequate and marginal health literacy, as measured by reading fluency, independently predicts all-cause mortality and cardiovascular death among community-dwelling elders.</td>
<td>Level 6: Single descriptive or qualitative study. There may be multiple confounding variables not adequately addressed with multivariate analysis.</td>
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<td>Tsakitzidis, G., Timmermans, O., Callewaert, N., Verhoeven, V., Lopez-Hartmann, M., Truijen, S., . . . Van The aim of this study is to summarize indicators of effective interprofessional outcomes for this population. 689 references were identified of which 29 studies met the inclusion criteria. All outcome A systematic review is performed in the Cochrane Seventeen out of 24 outcome indicators within the category Level 5: Systematic review of descripti European study, may not accurately reflect U.S. population Yes, there are multiple positive outcomes that are</td>
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Indicators were summarized in three categories: collaboration, patient level outcome and costs.

Library, Pubmed (Medline), Embase, Cinahl and Psychinfo with a search until June 2014.

Of ‘collaboration’ reached significant difference in advantage of the intervention group. On ‘patient outcome level’ only 15 out of 32 outcome parameters met statistical significance. In the category of ‘costs’ only one study reached statistical significance. From the systematic review of the level of available evidence and qualitative studies needs were derived from interprofessional collaboration in the areas of cost, quality of life, independence for daily life activities.

McKay, G. F. M., & Weerasinghe, A. To demonstrate that teaching basic

A total of 276 candidates have Retrospective analysis Demonstrated that Level 6: Single Simulated clinical Yes, demonstrate
Can we successfully teach novice junior doctors basic interventional ultrasound in a single focused training session? *Postgraduate Medical Journal, 94*(1111), 259-262. doi:10.1136/postgradmedj-2018-135590

Interventional ultrasound skills to novice junior doctors in a single focused session is an achievable outcome. Attended the 16 JUST courses; study analyzed the results of 237 junior doctor delegates. The 39 other candidates comprised of physician associates and nurse specialists and were excluded from study.

Focused training could effectively translate into basic competency in clinical practice.

| Determine if health literacy mediates the relationship between race and patient activation.
| Steps to Health Study (*n* = 263), excluding non-English speakers (*n* = 15) and, as per scoring guidelines, excluding those who answered “strongly agree” to every question on the PAM questionnaire (*n* = 25), leaving 225. Mean age was 71, 40.9% male, 26.2% White, 67% Black, and 6.7%
| Secondary analysis of data from a randomized controlled trial
| Across all models, significant mediation paths were identified from race to lower patient activation through health literacy. The mediation effect of health literacy on patient activation.

Yes, demonstrated mediating effect of health literacy on patient activation.
Griffey, R. T., Kennedy, S. K., D’Agostino McGowan, L., Goodman, M., & Kaphingst, K. A. (2014). Is low health literacy associated with increased emergency department (ED) utilization and higher ED recidivism than patients with adequate health literacy? The objective was to determine whether patients with low health literacy have higher ED utilization and higher ED recidivism than patients with adequate health literacy.

The study was conducted at an urban academic ED with more than 95,000 annual visits with 431 patients evaluated. Cross-sectional, convenience sample study.

Patients with inadequate health literacy had higher ED utilization compared to patients with adequate health literacy. Cross-sectional, convenience sample study.

Patients with inadequate health literacy had higher ED utilization compared to patients with adequate health literacy. Cross-sectional, convenience sample study.

Level 4: Case-control or cohort study.

This was a retrospective review of usage data and is subject to limitations inherent to this design. Yes, with caution, though results are consistent with other similar studies.
emergency department utilization and recidivism? *Acad Emerg Med*, 21(10), 1109-1115.

| Determined the health literacy of hospital inpatients, and to examine if associations exist between different dimensions of their health literacy, sociodemographic characteristics and hospital services use. | A written survey was sent to 3,252 people aged ≥18 years in English, Arabic, Chinese, Vietnamese, Italian or Greek. | A cross-sectional survey | Being aged ≥65 years, not currently employed, receiving government benefits, and being from a CALD background were also associated with increased use of some hospital services. | Low response rate may limit the generalizability of results to the broader hospitalized population, and other factors limit interaction with healthcare providers. | Yes, increased age, ethnicity and other factors limit interaction with healthcare providers. |


| This study used convenience sampling, which has the potential for selection bias and spectrum bias. | Foreign study which may have secondary confounding variables.
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<tr>
<td>Estimate the prevalence of inadequate HL among a sicker sample of older adults eligible for a care coordination program and a healthier randomly selected older adult sample; to identify common characteristics associated with inadequate HL within these cohorts; and to describe the impacts of inadequate HL on patient satisfaction, preventive services. There was no association between lower scores on any HLQ scale and greater use of hospital services.</td>
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<td>Overall, 9708 responded to the surveys (31% response rate). Of these, 7334 (75%) met the eligibility criteria and were included in the study.</td>
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<tr>
<td>Cross-sectional Survey</td>
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<td>Inadequate HL was associated with lower patient satisfaction, lower preventive service compliance, higher healthcare utilization and expenditures.</td>
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<td>Level 4: Case-control or cohort study</td>
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<td>HL and its proxies were only measured by a single screener, identifying further details about HL, such as health-related oral or print literacy and numeracy, was not possible.</td>
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<tr>
<td>Yes, Demonstrates that low HL is associated with lower compliance and higher healthcare utilization.</td>
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</table>

Understand in how far the relationship between health literacy and health disparities has been systematically studied and which potential relationships and pathways have been identified.

5766 abstracts were reviewed and 92 articles were included for full revision. 36 articles were included in the final synthesis.

Systematic review

Overall, the evidence on the relationship between health literacy and disparities is still mixed and fairly limited.

Level 1: Systematic review & meta-analysis of randomized controlled trials.

Studies included in this review used different health literacy measures, cut-off points and analysis techniques, which made comparability sometimes difficult.

No, there were too many different study types making an overall conclusion difficult.
Appendix B: CITI Completion Certificate

This is to certify that:

Mark Drye

Has completed the following CITI Program course:

Blomdical Research - Basic/Refresher (Curriculum Group)
Blomdical & Health Science Researchers (Course Learner Group)
1 - Basic Course (Stages)

Under requirements set by:

Liberty University

Verify at www.citiprogram.org/verify/?w8fc3a664-fc8f-4006-81d1-0a66ed25a7fe-20607630
Appendix C: Letter of Support

April 12, 2018

Institutional Review Board
c/o Office of Research Compliance
Liberty University
Lynchburg, VA

Dear IRB Members,

After reviewing the proposed study, “Addressing Health Literacy and Collaboration in Mobile Clinics Utilizing Teach-Back Methodology and Healthcare Provider Training”, presented by [Redacted] Doctor of Nursing Practice (DNP) graduate student at Liberty University, Lynchburg, VA. I have granted permission for the study to be conducted as [Redacted].

The purpose of this project is to determine whether focused health literacy and interdisciplinary collaboration training demonstrates effective change in attitudes, perceptions, and treatment plan compliance from patients in a mobile clinic setting. Only students participating the Interprofessional Education (IPE) clinics coordinated by [Redacted].

I understand that the pre-test, educational teach-back method intervention, and post-test will occur during the fall 2018 semester. I expect that this project will end not later than December 1, 2018. [Redacted] will contact and recruit IPE students and will collect data at [Redacted].

I understand that [Redacted] will receive consent from all participants, and have confirmed that he has the cooperation of the [Redacted] faculty preceptor), and office a copy of all Liberty University and [Redacted] approved, stamped consent documents before he recruits participants on campus. Any data collected by [Redacted] will be kept confidential and will be stored in a password protected electronic file that will be in the possession of [Redacted] has also agreed to provide to us a copy of the aggregate results from his study to the professors associated with the IPE clinics at Auburn University.

If the IRB has any concerns about the permission being granted by this letter, please contact me at the phone number listed below.
Appendix D: Permission Letter for Use of Iowa Model

Permission to Use The Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Health Care

You have permission, as requested today, to review and/or reproduce The Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Health Care. Click the link below to open.

The Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Health Care

Copyright is retained by University of Iowa Hospitals and Clinics. Permission is not granted for placing on the internet.


In written material, please add the following statement:

Used/reprinted with permission from the University of Iowa Hospitals and Clinics, copyright 2015. For permission to use or reproduce, please contact the University of Iowa Hospitals and Clinics at 319-384-9098.

Please contact UIHCNursingResearchandEBP@uiowa.edu or 319-384-9098 with questions.
Appendix E: Iowa Model of Evidence-Based Practice

Used/reprinted with permission from the University of Iowa Hospitals and Clinics, copyright 2015. For permission to use or reproduce, please contact the University of Iowa Hospitals and Clinics at 319-384-9098.
Appendix F: Permission Letter for Use of Teach-Back Methodology and Tool

Wed 2/21, 10:27 AM
Dear [Name],

I would be more than honored for you to use teach-back or any portion of my project/outline in your project. I wish you the very best as you move forward! I will enjoy reading your final paper.

Regards,
Dr. [Name]

Sent from my iPhone

Reply all
Wed 2/21, 8:48 AM
collab@[email]com;
[Name], Marie
Hello [Name],

[Name] (my boss) recommended I look at your recent work regarding teach-back as I am in need of a tool for my scholarly project that is focused on addressing health illiteracy in a mobile clinic setting. My intervention is focused provider training that will include teach-back as one of several tools for providers to use. I am writing today to request your permission to let me use the teach-back methodology and educational outline you developed in your project in my scholarly project.

If you have any concerns please feel free to let me know. You can reach me via email or cell at [email] Thank you for your consideration.

Respectfully,

DNP-Student, Liberty University
Appendix G: Teach-Back Technology

Instructions:

Teach-back should be used with all patients to ensure they understand instructions. Teach-back incorporates patients verbalizing back in their own words the information given to confirm their understanding.

- Use caring voice, attitude, and tone with the patient
- Assess culture and learning needs of the patient
- Use plain language during patient education without using medical terminology
- Implement a teaching plan to meet the needs of the patient
- Once teaching has occurred, state, “I have provided you a lot of information. Can you repeat back to me what I just said to be sure I covered everything?”

- If the patient can teach-back, document what the patient verbalizes
- If the patient is unable to teach back, restate and rephrase then monitor patient’s ability to teach-back
- Document patient understanding in nurses notes
Appendix H: Teach-Back Educational Outline

I. Provide Pre-Test on Teach-Back Methodology (3 minutes)

II. Teach-Back Training

   A. “Interactive Teach-Back Learning Module”

1) Objectives

   a) Define teach-back and key elements

   b) Review research on teach-back and improvement in patient understanding

   c) Apply skills and knowledge to conduct teach-back for patients

2) What is teach-back? (2 minutes)

3) Review teach-back definition and concepts (2 minutes)

4) Teach-back support by research (2 minutes)

   a) Endorsed by TJC and AHRQ

   b) Studies demonstrate teach-back’s effectiveness (Iowa Healthcare Collaborative, 2017)

5) When and why should teach-back be used? (2 minutes)

   a) In any setting and in all situations where nurses want clarification for what is taught or said

   b) teach-back actively engages patients

   c) Many factors impact patient’s learning (health literacy, pain, fear etc...)

6) How is teach-back used? (2 minutes)
Appendix I: Liberty University IRB Approval

October 8, 2018

IRB Exemption 3372.100818: Addressing Health Literacy and Collaboration in Mobile Clinics Utilizing Teach-Back Methodology and Healthcare Provider Training

Dear [Name]

The Liberty University Institutional Review Board has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study to be exempt from further IRB review. This means you may begin your research with the data safeguarding methods mentioned in your approved application, and no further IRB oversight is required.

Your study falls under exemption category 46.101(b)(2), which identifies specific situations in which human participants research is exempt from the policy set forth in 45 CFR 46.101(b):

(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless:
(i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

Please note that this exemption only applies to your current research application, and any changes to your protocol must be reported to the Liberty IRB for verification of continued exemption status. You may report these changes by submitting a change in protocol form or a new application to the IRB and referencing the above IRB Exemption number.

If you have any questions about this exemption or need assistance in determining whether possible changes to your protocol would change your exemption status, please email us at irb@liberty.edu.

Sincerely,

[Name]

Administrative Chair of Institutional Research
The Graduate School

Liberty University | Training Champions for Christ since 1971
Appendix J: Supporting Organization IRB Approval

Approval: Exempt Protocol #18-396 EX 1809 "Addressing Health Literacy and Collaboration in Mobile Clinics Utilizing Teach-Back Methodology and Healthcare Provider Training"

IRB Administration
Thu 10/4/2018 4:28 PM
Inbox

2 attachments (6 MB)
Investigators Responsibilities: 396 revisions 1.pdf;

The IRB only accepts forms posted at http://irb.tubtm.com and submitted electronically.

Dear [Name],

Your protocol, "Addressing Health Literacy and Collaboration in Mobile Clinics Utilizing Teach-Back Methodology and Healthcare Provider Training" has been approved by the IRB as "Exempt" under federal regulation 45 CFR 46.101(b)(2).

Official notice:
This e-mail serves as official notice that your protocol has been approved. A formal approval letter will not be sent unless you notify us that you need one. By accepting this approval, you also accept your responsibilities associated with this approval. Details of your responsibilities are attached. Please print and retain.

Consent document:
Attached is a scan of your new, stamped consent or information letter. You must provide a copy for each participant to keep. Also attached is a scan of your approved protocol.

Expiration – Approval for three year period:
Continuing review of this Exempt protocol is not required; however, all modification/revisions to the approved protocol must be reviewed and approved by the IRB.

When you have completed all research activities, have no plans to collect additional data and have destroyed all identifiable information as approved by the IRB, please notify this office via e-mail. A final report is no longer required for Exempt protocols.

If you have any questions, contact our office.

Thank you,
Appendix K: Informed Consent

CONSENT FORM
ADDRESSING HEALTH LITERACY AND COLLABORATION IN MOBILE CLINICS
UTILIZING TEACH-BACK METHODOLOGY AND HEALTHCARE PROVIDER TRAINING

Liberty University
School of Nursing

You are invited to be in a research study on the impact of healthcare provider training addressing health literacy and interdisciplinary collaboration. You were selected as a possible participant because of your provider status in one of the mobile clinics. Please read this form and ask any questions you may have before agreeing to be in the study.

[Name], Doctor of Nursing Practice student in the School of Nursing at Liberty University, is conducting this study.

Background Information: The purpose of this study is to use focused health literacy and interdisciplinary collaboration training to improve attitudes, perceptions, and treatment plan construction and compliance among health care providers in a mobile clinic setting.

Procedures: If you agree to be in this study, I would ask you to do the following things:
1. Complete the initial provider survey following this consent form. This should take approximately 20 minutes.
2. Complete the associated project training in health literacy and interdisciplinary collaboration either in person at one of the symposiums (TBD), or online through the link provided at the end of the initial survey. This should take approximately 60 minutes.
3. Continue in your provider role in the mobile clinics until approximately October 1st, 2018.
4. Complete the final provider survey open between October 1st, 2018 and October 14th, 2018. This should take approximately 20 minutes.

Risks: The risk involved in this study are minimal which means they are equal to the risks you would encounter in everyday life.

Benefits: The direct benefits participants should expect to receive from taking part in this study are additional training in teach-back methodology and health care literacy and interdisciplinary collaboration. This may benefit your practice and patient satisfaction and compliance.

Benefits to society include improved care for underserved, and socio-economically challenged individuals who have decreased access to healthcare services.

Compensation: Participants will not be compensated for participating in this study.
Appendix L: Initial Provider Survey

**INITIAL PROVIDER SURVEY**

Informed Consent

* 1. Please click on link to view consent form:
   □ Informed Consent Download

* 2. Do you wish to participate in this research study? If you select yes you are verifying that you have read the informed consent below and choose to participate voluntarily. If you do not wish to participate please exit survey and close your browser.
   □ Yes

* 3. Please create a five digit pin. This will be used to delete survey results if you choose to withdraw. Please write this down and keep it for your reference. You will need to enter this pin on your post test.

   [Blank Line]
INITIAL PROVIDER SURVEY

Demographic Information

Please provide brief description of your role and background

4. What is your healthcare role?
   - Nurse
   - Pharmacist
   - Doctor (MD or DO)
   - Nurse Practitioner/Physician's Assistant
   - Dietician
   - Social Worker

5. About how many years have you been in your current healthcare role?
   - Less than 1 year
   - At least 1 year but less than 3 years
   - At least 3 years but less than 5 years
   - At least 5 years but less than 10 years
   - 10 years or more

6. What is your age?
   - 18 to 24
   - 25 to 34
   - 35 to 44
   - 45 to 54
   - 55 to 64
   - 65 to 74
   - 75 or older

7. What is your gender?
   - Female
   - Male
1. Prepare for practice change

Please select one answer that most accurately describes your practice:

11. Our practice is addressing health literacy problems
   - Our practice is doing this well
   - Our practice is doing this, but could do it better
   - Our practice is not doing this
   - I am not sure what health literacy problems exist

12. Our practice regularly re-assesses our health literacy environment and updates our health literacy improvement goals.
   - Our practice is doing this well
   - Our practice is doing this, but could do it better
   - Our practice is not doing this
   - I don’t know the answer to this question OR this is not applicable

13. Our practice has a written Health Literacy Improvement Plan and collects data to see if objectives are being met.
   - Our practice is doing this well
   - Our practice is doing this, but could do it better
   - Our practice is not doing this
   - I don’t know the answer to this question OR this is not applicable
INITIAL PROVIDER SURVEY

2. Improve Spoken Communication

19. All staff members speak clearly (e.g., use plain, everyday words, and speak at a moderate pace).
   - Our practice is doing this well
   - Our practice is doing this, but could do it better
   - Our practice is not doing this
   - I don’t know the answer to this question OR this is not applicable

20. All staff members listen carefully to patients, without interrupting.
   - Our practice is doing this well
   - Our practice is doing this, but could do it better
   - Our practice is not doing this
   - I don’t know the answer to this question OR this is not applicable

21. All staff members limit themselves to 3-5 key points and repeat those points for reinforcement.
   - Our practice is doing this well
   - Our practice is doing this, but could do it better
   - Our practice is not doing this
   - I don’t know the answer to this question OR this is not applicable
INITIAL PROVIDER SURVEY

2. Improve Spoken Communication

26. Our practice routinely provides patients with updated medicine lists that describe in easy-to-understand language what medicines the patient is to take and how to take them.
   - Our practice is doing this well
   - Our practice is doing this, but could do it better
   - Our practice is not doing this
   - I don’t know the answer to this question OR this is not applicable

27. Staff members contact patients between office visits to ensure understanding or to follow up on plans made during the visit.
   - Our practice is doing this well
   - Our practice is doing this, but could do it better
   - Our practice is not doing this
   - I don’t know the answer to this question OR this is not applicable

28. Staff members assess patients’ language preferences and record them in the medical record.
   - Our practice is doing this well
   - Our practice is doing this, but could do it better
   - Our practice is not doing this
   - I don’t know the answer to this question OR this is not applicable
32. At least one staff member knows how to assess, prepare, and simplify written materials so they are easier to read.

- Our practice is doing this well
- Our practice is doing this, but could do it better
- Our practice is not doing this
- I don’t know the answer to this question OR this is not applicable

33. Our practice gets patient feedback on written materials.

- Our practice is doing this well
- Our practice is doing this, but could do it better
- Our practice is not doing this
- I don’t know the answer to this question OR this is not applicable

34. Our practice assesses whether written materials are easy to understand.

- Our practice is doing this well
- Our practice is doing this, but could do it better
- Our practice is not doing this
- I don’t know the answer to this question OR this is not applicable

35. Our practice’s patient education materials are concise, use plain language, and are organized and formatted to make them easy to read and understand.

- Our practice is doing this well
- Our practice is doing this, but could do it better
- Our practice is not doing this
- I don’t know the answer to this question OR this is not applicable
4. Improve Self-Management and Empowerment

38. Our practice creates an environment that encourages our patients to ask questions (e.g., asking “What questions do you have?” instead of “Do you have any questions?”) and get involved with their care.
   - Our practice is doing this well
   - Our practice is doing this, but could do it better
   - Our practice is not doing this
   - I don’t know the answer to this question OR this is not applicable

39. Clinicians help patients choose health improvement goals and develop action plans to take manageable steps towards goals.
   - Our practice is doing this well
   - Our practice is doing this, but could do it better
   - Our practice is not doing this
   - I don’t know the answer to this question OR this is not applicable

40. Clinicians consider their patients’ religion, culture, and ethnic customs when devising treatment options.
   - Our practice is doing this well
   - Our practice is doing this, but could do it better
   - Our practice is not doing this
   - I don’t know the answer to this question OR this is not applicable
INITIAL PROVIDER SURVEY

5. Improve Supportive Systems

45. Staff members assess patients’ ability to pay for medicines.
- Our practice is doing this well
- Our practice is doing this, but could do it better
- Our practice is not doing this
- I don’t know the answer to this question OR this is not applicable

46. Staff members connect patients with medicine assistance programs, including helping them fill out applications as needed.
- Our practice is doing this well
- Our practice is doing this, but could do it better
- Our practice is not doing this
- I don’t know the answer to this question OR this is not applicable

47. Staff members assess patients' non-medical barriers and take initiative to address them and provide appropriate referrals or extra support as needed.
- Our practice is doing this well
- Our practice is doing this, but could do it better
- Our practice is not doing this
- I don’t know the answer to this question OR this is not applicable
6. Personal Practice

54. How would you rate your overall confidence in providing health literacy sensitive plans of care to your clients?

- Extremely unconfident
- Somewhat unconfident
- Neither unconfident nor confident
- Somewhat confident
- Extremely confident

55. How much training have you received in health literacy considerations and interventions?
- A great deal of training
- A lot of training
- A moderate amount of training
- A little training
- Not any training at all

56. How valuable do you think interdisciplinary collaboration is to your practice success?
- Extremely valuable
- Very valuable
- Somewhat valuable
- Not so valuable
- Not at all valuable

57. How likely are you to collaborate with other healthcare disciplines in your routine practice to improve your client’s outcomes?
- Extremely Likely
- Very Likely
- Somewhat Likely
- Not so Likely
- Not at all Likely
Healthcare Literacy and Interdisciplinary Collaboration Training

Thank you for completing the Initial Provider Survey!

Please indicate which one of the options below you will use to complete the associated provider training prior to completing the Final Provider Survey (Will be released October 1st, 2018). You will be asked to verify completion of this training prior to being able to complete the Final Provider Survey.

58. Health Literacy and Interdisciplinary Collaboration Provider Education

Options

☐ 
☐ 
☐ 
☐
Appendix M: Final Provider Survey

**FINAL PROVIDER SURVEY**

*Verification of Provider Training*

* 1. Have you completed the required Initial Provider Survey and Provider Training?  
   If you select yes you are verifying that you have completed these and will be  
   asked to consider your responses in relation to any changes that have occurred  
   since you received the training materials.  
   ☐ Yes

* 2. Please indicate which Health Literacy and Interdisciplinary Collaboration  
   Provider Training option you utilized:  
   ☐
   ☐
   ☐
   ☐

* 3. Please enter the five digit pin you created during the initial provider survey so  
   your responses can be linked.

   [Blank space]
### FINAL PROVIDER SURVEY

#### 1. Practice change

Please select one answer that most accurately describes your practice after implementation of the training.

4. **Our practice is addressing health literacy problems**
   - [ ] Our practice is doing this well
   - [ ] Our practice is doing this, but could do it better
   - [ ] Our practice is not doing this
   - [ ] I am not sure what health literacy problems exist

5. **Our practice regularly re-assesses our health literacy environment and updates our health literacy improvement goals.**
   - [ ] Our practice is doing this well
   - [ ] Our practice is doing this, but could do it better
   - [ ] Our practice is not doing this
   - [ ] I don’t know the answer to this question OR this is not applicable

6. **Our practice has a written Health Literacy Improvement Plan and collects data to see if objectives are being met.**
   - [ ] Our practice is doing this well
   - [ ] Our practice is doing this, but could do it better
   - [ ] Our practice is not doing this
   - [ ] I don’t know the answer to this question OR this is not applicable
FINAL PROVIDER SURVEY

2. Spoken Communication

Please select one answer that most accurately describes your practice after implementation of the training.

12. All staff members speak clearly (e.g., use plain, everyday words, and speak at a moderate pace).
   - Our practice is doing this well
   - Our practice is doing this, but could do it better
   - Our practice is not doing this
   - I don’t know the answer to this question OR this is not applicable

13. All staff members listen carefully to patients, without interrupting.
   - Our practice is doing this well
   - Our practice is doing this, but could do it better
   - Our practice is not doing this
   - I don’t know the answer to this question OR this is not applicable

14. All staff members limit themselves to 3-5 key points and repeat those points for reinforcement.
   - Our practice is doing this well
   - Our practice is doing this, but could do it better
   - Our practice is not doing this
   - I don’t know the answer to this question OR this is not applicable
2. Spoken Communication

Please select one answer that most accurately describes your practice after implementation of the training.

19. Our practice routinely provides patients with updated medicine lists that describe in easy-to-understand language what medicines the patient is to take and how to take them.
   - [ ] Our practice is doing this well
   - [ ] Our practice is doing this, but could do it better
   - [ ] Our practice is not doing this
   - [ ] I don’t know the answer to this question OR this is not applicable

20. Staff members contact patients between office visits to ensure understanding or to follow up on plans made during the visit.
   - [ ] Our practice is doing this well
   - [ ] Our practice is doing this, but could do it better
   - [ ] Our practice is not doing this
   - [ ] I don’t know the answer to this question OR this is not applicable

21. Staff members assess patients’ language preferences and record them in the medical record.
   - [ ] Our practice is doing this well
   - [ ] Our practice is doing this, but could do it better
   - [ ] Our practice is not doing this
   - [ ] I don’t know the answer to this question OR this is not applicable
3. Written Communication

Please select one answer that most accurately describes your practice after implementation of the training.

25. At least one staff member knows how to assess, prepare, and simplify written materials so they are easier to read.
   - Our practice is doing this well
   - Our practice is doing this, but could do it better
   - Our practice is not doing this
   - I don’t know the answer to this question OR this is not applicable

   - Our practice is doing this well
   - Our practice is doing this, but could do it better
   - Our practice is not doing this
   - I don’t know the answer to this question OR this is not applicable

27. Our practice assesses whether written materials are easy to understand.
   - Our practice is doing this well
   - Our practice is doing this, but could do it better
   - Our practice is not doing this
   - I don’t know the answer to this question OR this is not applicable
4. Self-Management and Empowerment

Please select one answer that most accurately describes your practice after implementation of the training.

31. Our practice creates an environment that encourages our patients to ask questions (e.g., asking “What questions do you have?” instead of “Do you have any questions?”) and get involved with their care.
   - Our practice is doing this well
   - Our practice is doing this, but could do it better
   - Our practice is not doing this
   - I don’t know the answer to this question OR this is not applicable

32. Clinicians help patients choose health improvement goals and develop action plans to take manageable steps towards goals.
   - Our practice is doing this well
   - Our practice is doing this, but could do it better
   - Our practice is not doing this
   - I don’t know the answer to this question OR this is not applicable

33. Clinicians consider their patients’ religion, culture, and ethnic customs when devising treatment options.
   - Our practice is doing this well
   - Our practice is doing this, but could do it better
   - Our practice is not doing this
   - I don’t know the answer to this question OR this is not applicable
5. Supportive Systems

Please select one answer that most accurately describes your practice after implementation of the training.

38. Staff members assess patients’ ability to pay for medicines.
   - Our practice is doing this well
   - Our practice is doing this, but could do it better
   - Our practice is not doing this
   - I don’t know the answer to this question OR this is not applicable

39. Staff members connect patients with medicine assistance programs, including helping them fill out applications as needed.
   - Our practice is doing this well
   - Our practice is doing this, but could do it better
   - Our practice is not doing this
   - I don’t know the answer to this question OR this is not applicable

40. Staff members assess patients' non-medical barriers and take initiative to address them and provide appropriate referrals or extra support as needed.
   - Our practice is doing this well
   - Our practice is doing this, but could do it better
   - Our practice is not doing this
   - I don’t know the answer to this question OR this is not applicable
6. Personal Practice

Please select one answer that most accurately describes your personal practice after implementation of the training.

47. How would you rate your overall confidence in providing health literacy sensitive plans of care to your clients?

- Extremely unconfident
- Somewhat unconfident
- Neither unconfident or confident
- Somewhat confident
- Extremely confident

48. How much training have you received in health literacy considerations and interventions?

- A great deal of training
- A lot of training
- A moderate amount of training
- A little training
- Not any training at all

49. How valuable do you think interdisciplinary collaboration is to your practice success?

- Extremely valuable
- Very valuable
- Somewhat valuable
- Not so valuable
- Not at all valuable

50. How likely are you to collaborate with other healthcare disciplines in your routine practice to improve your client’s outcomes?

- Extremely Likely
- Very Likely
- Somewhat Likely
- Not so Likely
- Not at all Likely
FINAL PROVIDER SURVEY

Healthcare Literacy and Interdisciplinary Collaboration Training

Thank you for completing the Final Provider Survey!

This project would not have been possible without your participation! Hopefully you gained some useful training that will help you to improve your care and organization practice.

51. Would you recommend this training to other healthcare provider’s?

☐ Yes, definitely
☐ Yes, somewhat
☐ No
Appendix N: Provider Training Module Slide Outline

Background
Health literacy is a significant issue for the general population but is magnified by lack of resources and poverty. Lesser health care providers may not understand how health literacy affects the development of plans of care and overall patient compliance. This lack of understanding directly contributes to poorer outcomes and a lack of interdisciplinary coordination decreases patient understanding of complex health care needs. There is a need for specific health literacy training and interdisciplinary collaboration to improve patient outcomes and maximize healthcare resources. Underserved and socioeconomic depressed patients may have difficulty in completing plans of care or acquiring appropriate healthcare resources to include medications, specialists, and transportation requiring additional support and understanding of those challenges from healthcare providers.

Health Literacy: The Problem
- Poor health literacy (HL) is a widespread problem that adversely affects older and socioeconomic disadvantaged individuals and families
- Overall all cause mortality is higher among community-dwelling elderly adults who have inadequate HL, primarily measured by reading fluency. There is a significant association between reading ability and socioeconomic status and health but education level is not a good indicator of health literacy
- Underserved patients who are affected by health literacy have worse health outcomes

Interdisciplinary Collaboration: Possible Solution
Promoting quality and effective care for patients with low HL is challenging when there are increased socioeconomic barriers. It is essential for healthcare providers to engage and promote interdisciplinary collaboration to improve quality and continuum of care. Older adults perceive increased quality of care when care is comprehensive and are more likely to need multiple specialists and resources to optimize their care.

Failure to address Health Literacy can be costly...
Interdisciplinary Collaboration: Possible Solution

- Patient education is more effective in decreasing misunderstanding related to labeling, dosing, and other medication-related issues but should not be relegated to one discipline. Medication adherence and understanding is enhanced when nurse practitioners (NP), pharmacists collaborate and patients benefit from the different approaches to medication teaching and monitoring. This concept can be used by multiple disciplines to include physicians (MD/DO), nurses, and therapists.
- Well-implemented team-based care can improve coordination, overall efficiency, effectiveness, and value of care, as well as the satisfaction of patients and providers.

Interdisciplinary Collaboration

- Building a good interdisciplinary team can be difficult because it requires the ability to communicate well and function collaboratively. Failure to communicate well can result in worsening of HL problems:
  - Patients may feel that care is fragmented and disjointed
  - Patients may have difficulty developing a relationship with the team and completing treatment plans
  - Patients may miss important interventions by delayed consults, poor follow up, and decreased reinforcement

Health Literacy Interventions

The following modules will discuss and present basic concepts that providers can use to decrease health literacy and will conclude with application of a teach-back methodology for use in your practice:

1. Oral Communications
2. Written and Non-verbal communications
3. Collaboration
4. Teach-back

Health Literacy Interventions: Written and Non-verbal Communications

Key Takeaways:
- Clear and concise communication helps to improve patient understanding of health care information and makes them feel more comfortable, engaged, and likely to discuss and follow through with plans of care.
- Greet patients.
- Make eye contact.
- Listen carefully.
- Use plain, non-medical language and avoid jargon.
- Use the patient’s words.
- Slow down and speak clearly and easy to follow pace.
- Limit and repeat content emphasizing 3-5 primary points.
- Be specific and concrete in your terms.
- Invite patient participation and encourage questions.
- Apply teach-back (Further instruction will be provided.)

Health Literacy Interventions: Oral Communications

Key Takeaways:
- Clear and concise communication helps to improve patient understanding of health care information and makes them feel more comfortable, engaged, and likely to discuss and follow through with plans of care.
- Don’t assume patients read the materials or resources you provide.
- When using or reviewing handouts:
  - Circle or highlight the most important concepts while you discuss and ask questions.
  - Personalize the material by specific case instructions.
  - Use teach-back to confirm understanding – nothing a theme.
  - You may need to give the material to the patient more than once.

Show graphics:
- Simple drawings or pictures of anatomy can help patients understand important concepts and procedures.
- Demonstrate how something is done. They may not be doing it right....
Additional Resources

If you want to learn more there are additional resources and training available at these sites:

1. 
2. 
3. 

References