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Educating Cliniccians on Evidence Based Interventions for Healthy Literacy

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Abstract

The need for health literate communication is evident in a changing and complex health care system. Yet, little formal training is available for nurses, physicians, and other health clinicians. Poor communication in the healthcare setting has negative effects on the patient, on the clinician, the health system and the larger community. This literature review identified techniques evident in the literature to produce positive patient and clinician health and communication outcomes. Supported interventions include communication techniques such as motivational interviewing, teach-back, teach-to-goal, the Four Habits Model and the Ask Me 3 model. The impact of such interventions can be measured through in-place measurements such as HCAHPS scores, and through measurement of clinician behavior and confidence in communication. Frameworks for understanding health literacy and the role of communication training are discussed. Nurses are in a distinct position to impact the spread of health literacy education and evidence based communication techniques in the health fields.

Introduction

With the expansion of insurance coverage in the wake of the Patient Protection and Affordable Care Act, more Americans have access to quality medical care than ever before (U.S. Department of Health and Human Services, 2015). In addition, due to provisions within the law, health providers and systems are becoming responsible not just for the provision of care, but the assurance that care delivery is effective, efficient, and of value to the patient.

This intersection between increased patient volume, changing payment structures and a demand for higher clinical quality puts clinicians in a unique position to begin to address issues of patient activation, patient engagement, and health literacy. Clinicians begin to focus on patients as partners in the changing healthcare landscape and study the interaction between the patient and the health provider. In addition, the definition of health broadens, as reform focuses care on prevention and wellness and away from traditional sick care models. The question then becomes, how can the study of health literacy and the employment of health literate care techniques improve quality of care and clinician communication. More specifically for the purposes of this paper, what evidence-based techniques can we educate clinicians on for the provision of health literate care?

Health literacy is a complex term with multiple accepted definitions. For the purpose of this paper, I will base discussions on the definition coined by Ratzan and Parker (2000) and the expansion of that definition as explained in the Calgary Charter. Ratzan and Parker define health literacy as the *degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions.* The Calgary Charter (2008) expands this definition by noting the ability of the health system to either create barriers or enhance a person's ability to interact with their health. In this paper, I will discuss how clinicians can address health literacy for the purpose of increased patient engagement, activation, and improved clinical outcomes.

Purpose

The purpose of this work is to identify techniques clinicians can utilize to address health literacy in their practice. Health literacy interventions encompass both efforts to increase the health literate skills of the individual and efforts to reduce barriers created by the complex health system. In both cases, patient-provider communication is key. Teaching communication techniques can be difficult, must be individualized, and require an evidence –based skill set.

Educational interventions must be chosen to strategically meet the needs of the clinician, and are best utilized when integrated into current practice or educational plans. As such, the results of this study will be disseminated in easy to access ways for clinicians use. Through the use of a poster presentation, supplemented with an internet-based toolkit, findings of this study will be distributed to help clinicians find actionable practices to improve health literacy in their population. An educational training plan will also be presented, to assist organizations in educating clinicians.

Communication skills can be seen as "soft", or dependent on context or learner. As such, it will be important that all findings from this study reflect proven outcomes represented in the literature. In this time of clinical quality, streamlining communication skills among interdisciplinary groups is paramount. This study aims to synthesize outcomes-based evidence on health literate education and interventions in clinical populations, and use that evidence to improve clinical practice.

Significance

According to the 2003 National Assessment of Adult Literacy, only 12% of Americans have proficient health literacy. Proficient health literacy is described as being able to find health information, evaluate and interact with health forms and health insurance forms, and problem solve in health care environments. Health literacy tasks may include reading a prescription bottle, following a treatment plan, or communicating symptoms to a health care provider. (Abrams et al, 2014).

If only 12% of Americans are proficient in these health related tasks, that leaves 88% of the adults studied in an intermediate, basic, or below basic rating of health literacy skills. In the large study, 14% of adults measured in the below basic category, 21% rated as basic health literacy, and 53% rated as intermediate on measure. Low health literacy is a significant issue for the majority of those who interact with the American health system.

Abrams et al (2014) described the effect of health literacy on quality of care and healthcare costs. In their instruction to healthcare systems, Abrams et al highlighted the poor health understanding, poorer health status, and greater use of inappropriate emergency care for patients with low health literacy. Further, in a 2012 article published in the British Medical

Journal, low functional health literacy was correlated with a higher mortality risk (Bostock, 2012). Older adults, racial and ethnic minorities, people with less than a high school education, those with low income levels, those who speak a non-native primary language, and persons who are ill are reported as highly vulnerable to issues with communication and low health literacy (Abrams et al, 2014).

With the vast majority of people who interact with the health system at risk for communication or health literacy issues, clinicians must possess health literacy knowledge or skills to address the need and bridge the communication gap between clinicians and clients. Yet, as Schillinger (2011) reports, persons most at risk often receive clinical care that is not sufficient to meet their health literacy needs. Remarking on the Inverse Care Law, Schillinger (2011) describes a paradox, where those who need the most help navigating a health system actually receive the least amount of help.

The high prevalence of low health literacy among patients and the increasing complexity of the health care system combine to make an urgent need to address health literacy skills in clinicians. Clinicians in every health setting are in a unique position to enact interventions aimed at both increasing the health literacy of a patient, through patient education, coaching and conversation, and to reduce the demands of the health system on the low literate patient. Currently, clinicians report little training on evidence based communication techniques, and little standardized programs to address health literacy needs in their organization. This project will provide clinicians with evidence based methods to improve their communication with patients, in an effort to assure their health literacy.

Theoretical Framework

There are two theoretical frameworks that serve as the basis for this work. Due to the nature of the work, both frameworks are used to ascertain appropriate study. First discussed is the systems framework, the Health Literate Care Model. Later discussed is the Health Literacy Skills Framework.

Health Literate Care Model

The Health Literate Care Model was first introduced in 2013 by authors Koh, Brach, Harris and Parchman. Built upon the Care Model introduced by Wagner in 1996, the Health Literate Care Model requires systems to work with community partners, and focus on communication as a primary intervention for good health.

In their discussion of the Health Literate Care Model, Koh et al, (2013) make the case for an increased focus on patient engagement and understanding. Highlighting the lack of knowledge for patients in a complex medical system, Koh et al, (2013) demonstrated the resulting negative outcomes of uninformed patients. Noted are decreased preventative services use, lack of self-management of conditions, more hospitalizations and visits to the emergency department. Koh et al (2013) also demonstrate that often in healthcare, patient understanding may be assumed by the provider and not confirmed. This is validated in a 2013 study where nurse's estimation of a patient's health literacy level was shown to be overestimated by roughly 60% of the time (Dickens, Lambert, Cromwell & Piano, 2013).

The framework of the Health Literate Care Model focuses the on how organizations train clinicians in order to achieve population health outcomes. It creates a layer of "how to" between system goals and patient and provider outcomes. This "how to" layer describes effective

communication techniques both written and oral, improvement methods, supportive systems, and engaged patients and providers. The framework supports that in this increased communication training the positive outcomes of an informed, engaged patient and a satisfied provider are found. The author purports that *"the leadership of an updated, health-literate system would explicitly address health literacy as a part of continuous quality improvement"* (p. 360).

Health Literacy Skills Framework

The second framework considered for this study is the Health Literacy Skills Framework, developed by Squiers et al in 2012. This study sought to find the commonalities between accepted health literacy definitions and frameworks, and to propose a new framework that encompasses all aspects. This framework notes health literacy skills to be on a full continuum of moderators and mediators and their effect on health literate outcomes. Whereas other frameworks may focus on a moderator, or mediator view, this framework presents characteristics of all constructs.

Key factors identified in the foundational studies for the Health Literate Skills Framework are communication, knowledge, health outcomes and societal influences. Within communication, Squier at al, (2012) refer to previous frameworks that indicate the communication between patient and provider as a significant factor in the determination of health outcomes. Patient knowledge, referring to prior knowledge the patient brings with them to the health encounter, is identified as a mediating factor to the health literate outcome. The distinct measurement of health outcomes and the recognition and effects of societal influences are noted as foundations for the framework as well.

The Health Literacy Skills (HLS) Framework makes clear that the ownership of health literacy skills lays within the patient, but delineates ecological influences such as the health care provider as a force affecting the skill of the individual. The HLS allows that health-related stimuli are influencing factors on a persons' health decisions. For example, written or illustrated health information presented in a public setting will force a person to interpret or encode portions of the message. Health systems and clinicians have a causative factor here, and should be aware of the effect of health messaging and how it is best used. The framework specifically highlights how the demand of a health messaging stimulus interacts with an individual's skills to influence comprehension of the message.

The authors of the HLS note the need for further research on the framework. However, this framework gives an ecological view of the many factors associated with positive health outcomes for patients interacting with a health system. Approaches to increase the health literate skill of the individual are highlighted as needed in the model. In addition, approaches to influence the mediators in the patient-provider interaction are repeated throughout the model.

Definitions

Health Literacy: For the purposes of this paper, the accepted definition of health literacy is: "the degree in which individuals have the capacity to obtain, process and understand basic health information and services needed to make appropriate health decisions." (Abrams et al, 2014, pg. 17).

Health Literate Organization: According to Brach et al (2012), *health literate organization* is one that "makes it easier for people to navigate, understand, and use information and services to take care of their health" (pg. 1).

Patient Engagement: Koh et al (2013) refer to Center For Advancing Health's definition of *patient engagement* as "actions individuals must take to obtain the greatest benefit from the health care services available to them."

Provider: For the purposes of this paper, a provider is defined as any healthcare role with prescriptive authority. Examples would be physicians, certified registered nurse practitioners, or physician assistants.

Clinician: For the purposes of this paper, a clinician refers to other healthcare roles in which clinical care is delivered, but without prescriptive authority. Examples of a clinician would be a registered nurse or medical assistant. Administrative health care roles, such as patient representatives, would not be considered in this definition.

Proficient Health Literacy: Proficient health literacy is a classification of an individual's skill on a standardized health literacy scale. In order to be considered proficient, a person must have scored between 335-500 in the health categories of the 2003 National Assessment of Adult Literacy.

Teach-Back: For the purposes of this paper, Teach-back is defined as a communication method in which clinicians or providers guide patients to explain health teaching in their own words, after a demonstration or teaching time period. The teach-back method is similar in composition to other methods such as teach to goal, or show me methods. Reviews in this paper may have referenced other similar methods, but must have reported on teach-back in name in order to be considered.

Process

To determine best practice for educating clinicians on health literate strategies, a thorough literature search was completed. Using the databases of CINAHL, PubMed and Cochrane Review, articles were collected for review. In addition, postings in the international list-serv for health literacy, supported and maintained by Institute for Healthcare Advancement was utilized. Topic-specific internet sources, as well as public and governmental resources were reviewed. Search terms included: *health literacy, health literate organizations, teach-back, patient engagement, patient activation and health communication.* Search results were then limited to articles that showed resulting outcomes for clinician education or patient health or knowledge improvement.

An initial search of PubMed using the search term Health Literacy produced over 8000 results. Switching to a MeSH category, again with the search terms health literacy, this author chose the qualifiers of *nursing, manpower, methods, standard, organization and administration and utilization.* 297 articles were identified, 267 of which were published in the last 5 years.

A second search was completed within CINAHL, using search terms health literacy and nursing. Initial search returned 657 results. Limitations of English Language, peer reviewed, academic journals and a five year publication date were then applied. 245 articles were then identified, and screened for programs aimed at clinician education.

Throughout the length of this project, articles and experience reports were gained through postings in the Institute for Healthcare Advancement's Health Literacy list-serv. The list-serv is an international forum for experts in the health literacy field to post successes, questions, and hold discussions on health literate topics. Peer review articles, as well as organizational

experiences and topic papers were isolated from this list-serv over an 18 month time frame. Whenever necessary, list-serv archives were reviewed for additional content.

In the midst of this project an additional list-serv community was created. Global Health Delivery Online is an international forum for clinicians to discuss care issues with colleagues throughout the world. Intentionally framed discussion times are supported by this forum, with highlights on practice experiences with health literate interventions. Practice reports were obtained from these online forum discussions.

In reviewing results obtained from the multiple searches, a local health task force was consulted for discussion of findings. It was determined that findings from the study can be made applicable to clinicians at the bedside, clinicians in the outpatient sector, and community health workers in community based organizations. Aging and Health Disparities Task Force (Task Force) members from the Foundation for Enhancing Communities in Harrisburg Pennsylvania were engaged in discussion about findings and applicable interventions in the various settings. In addition, a medical librarian from the local health system provided feedback on selected articles.

Findings from the literature are conducive to dissemination in multiple avenues. In addition, clinicians require multiple approaches to engage in the information presented. For health system nurses, educational classes were planned and supported for communication improvement. Evaluation of nurse's knowledge was completed through post education surveys, as well as monitoring of objective patient satisfaction scores, as reported through the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) report. The HCAHPS measurement question of *"Did your nurse explain things in a way you could understand?"* was specifically monitored pre and post educational delivery.

For community based organizations, and in conjunction with the Task Force, content gained from the literature search was developed into a website toolkit. In addition, educational sessions were planned for community organizations to access and utilize information on the toolkit. The toolkit web address is www.tfec.org/health-literacy. Screen views of the website are included in Appendix D. The website was chosen as a vehicle of information dissemination due to the ease of accessibility by multiple organizations, the sustaining medium for the collection, and the broad spread of access. Within the website toolkit, community based organization can review known health literacy information and design their strategy to assist their clients with health literate needs. Focusing on the areas of communication, medication safety, reliable health information and health insurance literacy allows community based organizations to impact health literacy levels in their clients.

To reach multiple areas of practicing clinicians outside of the hospital or community organization setting, poster presentations were created and submitted to local and national conference venues. Posters are attached to this document, and have been displayed at the 2015 Wisconsin Health Literacy Summit, the 2015 Penn State Public Health Day Symposium, and the 2015 IHA Health Literacy Conference in Irvine, California. The presented posters can be found in Appendix B & C. Finally, an sample educational program was created to foster communication in both the inpatient and outpatient settings. The educational outline can be found in Appendix A. This outline was utilized in four educational sessions provided for Registered Nurses at PinnacleHealth in Harrisburg Pennsylvania. In addition, this educational outline is scheduled to be presented to community based organizations in August of 2015, in Harrisburg Pennsylvania.

Review of the Literature

This review of the literature produced articles on many different aspects of patient-provider communication. The terms provider and clinician are used to reflect the different healthcare roles of physician, nurse, physician assistant or nurse practitioner. In some cases, and where noted, medical assistants or community health workers were involved. When describing levels of evidence, the Johns Hopkins model will be utilized.

Assessment of Need for Provider/Clinician Training

First reviewed is a case study of the environment of care from a health literacy scope. Weaver et al (2012) performed a health literacy needs assessment of three clinic sites of a federally qualified health center. The needs assessment was built upon three prior known health literacy assessment tools, domains focusing on patient-provider interaction, patient education, print materials, technology and inter-staff interaction and policy. Observational episodes and interviews were utilized to look for themes, and theme saturation was reached in the assessment. Thirty five interviews were completed as a part of the assessment, and interviews were scattered over many different job roles and perspectives. Patient and non-clinician interviews were also held after the initial interviews, but the authors noted they added little information to the data collection as saturation had been reached. The authors reported a high level of morale among staff at the three clinics.

Staff in the needs assessment noted very little formal training on health literacy matters. Respondents noted that most communication education was learned by watching others on the job. Providers and patients alike noted lack of understanding on medical diagnosis and

noncompliance as barriers to care and communication. Staff also noted a lack of formal policies to address health literacy.

When the case study was presented to administrators of the clinic, administrators and researchers collaborated to create a strategic plan to address the gaps noted in communication. For example, researchers noted a difference between how provider's valued print communication, and the high value patient's put on print communication. Also, patients noted that even post-visit, they were unaware of their diagnosis. Together, the leadership team developed in-print tools to aid in diagnosis communication with patients.

Weaver et al (2012) also completed a comprehensive needs assessment and readiness for change review in the three clinics. While difficult to generalize, this information provides a basis for work with other clinicians and facilities. The authors noted barriers to implementing health literate techniques such as lack of formal policies or protocols. Limitations of the study are noted, for example – completing assessment at different times of day may produce different results. This study reflects how assessment data and clinician input can be valuable to the creation of a health literate strategic plan. It lays a basis for similar work in other settings, and the value of educating clinicians on health literacy issues.

Two reviewed studies demonstrated the need for education in nurse and physician populations. Macabsco-O'Connell and Fry-Bowers (2011) utilized a web survey to assess nurse knowledge in 76 Registered Nurses. The population studied included nurses in the roles of Nurse Practitioner, RN Staff nurse, Clinical Nurse Specialists and RN managers. Respondents noted a lack of formal health literacy training (59%), and although the majority of nurses surveyed indicated a moderate or great deal of knowledge about health literacy, almost all nurses responded with incorrect answers when asked factual questions about the basics of health

literacy. In addition, a majority of respondents noted being unaware of any formal health literacy programs or low literacy educational materials for patients. Despite the clear disparity between nurse's understanding of health literacy and confidence in their own knowledge, the nurses reported health literacy as a low priority for education in their home programs. This article demonstrated the mismatch between need for health literacy understanding and the state of nurse clinician knowledge. Authors then outlined education techniques used to bridge the gap, and highlighted the need for education on health literate techniques and assessment tools. The recommendation was given to include this education in nursing schools and other venues.

Howard, Jacobson & Kripalani (2013) report similarly on physician use of evidence-based communication techniques. In this study, 82 resident physicians in their second year of residency were assessed for self-reported communication confidence. The majority of the residents surveyed reported little to some communication or plain language training in their history. Upon measure and assessment, 48% of residents surveyed reported using the teach-back technique regularly. However, upon assessment only 22% of the residents actually employed the technique in the patient encounter. Jargon was also noted more often in the observed patient encounter. This study demonstrated the mismatch between physician understanding, confidence, and actual use of evidence based communication techniques.

Results of the needs assessment highlighted some health literate practices in place, however due to decreased knowledge about health literacy, staff were unable to speak to the efforts as health literate in nature. Staff reported use of print materials, plain language during communication, and an ability to assess for understanding at the time of visit.

Training Program Outlines

Sudore & Schillinger (2009) brought together a compendium of interventions aimed at improving clinician skill and allowing for health literate patient care. This literature review highlighted best practices for health literate organizations and clinicians. The authors note the responsibility of the clinician to provide health literate care as to prevent communication mistakes, ensure patient safety and reduce health disparities.

Sudore and Schillinger (2009) highlighted techniques outlined in this paper, and in addition highlight the need for numeracy and risk information sharing. Focusing on utilizing verbal, written, pictures, and graphs to demonstrate numerical information is highlighted as a health-literate technique. Utilizing standard comparison tools (such as consistent denominators) and specific time spans are also highlighted as health literate approaches to closing the numeracy gap. The authors speak further on organizational and policy change needed to support health literate care in all aspects of the health system. The authors point to several free or easily accessible training modules to support clinician education on these topics, and more. They highlight the need for health literacy education within clinician schooling and within community organizations. Also highlighted is the benefit to all patients when clinicians employ health literate techniques. Benefits to these clear communication methods are not limited to low health literacy patients alone.

Outcomes of Training Programs

Some articles reviewed focused on the outcomes of provider or clinician training programs. Percival's (2014) report outlined the process of a nurse training program on the health literate technique of motivational interviewing. This Level III report identifies clinician-

identified issues in communication prior to training. Issues include frustration with patients who are seemingly unwilling to change, patients who are unwilling to listen, and patients who are looking for a "quick fix" to health. The authors discuss the development of the clinician education program, including teaching on Prochaska's 1983 stages of change model and the general principles of motivational interviewing. While no patient level data was collected as a part of this study, clinician outcomes were measured 12 weeks after educational intervention. Clinicians who attended the program noted increased ease in having difficult conversations with patients, and noted a change from traditional communication methods to methods that were thought-provoking and encouraging. The authors concluded that clinician training on the health literate technique of motivational interviewing can improve nurse's confidence in providing effective communication for positive patient outcomes.

Focusing the client-clinician conversation in a health literate manner requires additional training not always present in schooling. Lamiani & Furey (2008) describe the lack of education present in nursing schools which engages nurses in evidence-based manners of patient-centered communication. By instituting additional training in the workplace setting, the researchers were able to change the way nurses communicate in both an outpatient and inpatient setting. Focusing on the health literate techniques of patient centered education, a workshop was held to engage nurses in dialogue about evidence based patient education. Including in the instruction of this course was a former patient and a health educator. Teaching skills such as using open-ended questions, paraphrasing patient responses and teach-back, researchers were able to demonstrate how a change in nurse's skills can affect patient communication. In the post-surveys following the workshop, nurse's communication showed a decrease in nurse verbiage and an increase in patient participation in conversation. In addition, content of the conversation switched from

nurse's instructing patients on medical information to increased conversation about psychosocial issues and knowledge checks. Unique about this study is the inclusion of an objective assessment of nurse's communication skills, through the use of the evaluated dialogues. Nurse's also reported an increase confidence in their communication skills post-workshop. This study demonstrates a positive outcome for patient interaction in the patient-clinician communication relationship, and an increase in nurse confidence resulting from a two day training session on patient-centered communication, a health literate technique.

Health Literate Technique Interventions

White, Howland and Clark (2015) add additional knowledge to the field in describing their work in teaching the health literate technique, *teach-back* to outreach coordinator nurses caring for you with human immunodeficiency virus. In this level III study, the outreach coordinator was trained on the use of the teach-back method in sequential visits with the youth. The authors reported a very small sample of patient participants for the final evaluation. However, within those evaluated, youth knowledge of medications and navigating the health system were increased. Also noted was a qualitative report from the youth, indicating their approval of the techniques used by the coordinator to clarify misunderstandings.

White's (2015) report indicates the potential for a positive nurse-patient communication environment through the use of standard visit pathways and teach-back communication technique. In addition to positive nurse outcomes, positive patient outcomes are demonstrated in this study. While outlook is good, this study is lacking in follow through and overall number enrolled. However, the study can be used to show a model for educating clinicians, especially clinicians in a navigation role. It also shows patient response to the use of the teach-back method, which is positive.

Kripalani et al (2011) report on the formation of a workshop aimed at improving resident physician's ability to communicate about medications. Highlighting the difficulties with medication adherence for many patients and the lack of physician awareness on communication about medications, researches set out to evaluate the effectiveness of a medication counseling workshop implemented in resident education.

Developers of the workshop followed a standardized curriculum format and created a two-hour curriculum. Within the workshop, interactive techniques were utilized such as story-telling, patient case study recall, and role playing of health literate strategies and technique, such as the use of teach-back and adherence-building communication. Outcomes of the workshop were measured through Likert-scale questionnaires. 24 behaviors were self-reported by the residents enrolled in the study. Behaviors on the survey included interviewing patients for adherence assessment, assisting patients to develop self-managed barrier-focused interventions, considering cost and expense of the therapy, avoiding jargon and using teach-back. Pre- and Post-test surveys were used to compare both self-reported counseling behaviors and confidence in such behaviors. 54 resident physicians were enrolled in the study, and all completed the pre-survey. Only 35 residents completed the follow up post-survey. Demographic characteristics of both groups were similar. Upon evaluation, resident's confidence scores increases significantly. Self-reported behaviors also improved, but not to the level of confidence scores. In follow up evaluation, residents who participated in the study reported using health literate techniques more often in their daily practice. Authors of this study noted that physician confidence on communication and medication assessment may be low in many populations. As such, educational interventions should be well structured and utilized widely.

Grice et al (2013) highlighted the need for community pharmacies to assess and educate on communication. Noting that 250 million people utilize community pharmacies each week, training pharmacists and pharmacy technicians is an opportunity to improve patient-clinician interaction and resulting health literacy of many patients. Grice et al (2013), in conjunction with the St. Louis College of Pharmacy, utilized the Four Habits Model to coach 284 pharmacy students on interacting with clients. The Four Habits Model is a structured interview technique used to enhance communication in client visits. The model breaks down communication within the visit to include a focus on creating rapport, eliciting patient's responses, demonstrating empathy and closing the visit well. The model has been long utilized as a technique to engage patients on communication during medical interviews. The training was completed in 2009 (158 students) and 2010 (126 students). Student performance in the Four Habits Model (FHM) was evaluated by trained assessors and measured on ability to engage patient communication according to the FHM. Assessors were both trained identically on the materials and developed the assessment criteria together. Inter-rater reliability was high. Findings of the study not only supported improvement in pharmacy clinician ability, but also the potential to increase patient health literacy after repeated interactions with a trained pharmacy student.

Wilson, Baker, Nordstrom and Legwand (2008) report on an intervention designed to increase vaccine communication with low income mothers through use of the teach-back method. In this quantitative/qualitative study, multiple research questions were posed. Researchers addressed the relationship between ability of the mother to communicate and personal factors such as number of children, literacy levels of the mother, and age of the mother. Nurses were trained to engage the mother in story-telling about the child's health, and then to include teach-back within the visit. 30 mothers were enrolled in the study, 15 with one child and

15 with multiple children. Research nurses were utilized to follow a script of educating the mother on two vaccines, and then request the patient to respond using the teach-back technique.

The mothers in this study were predominantly low income, and single heads of the household. When measured, mothers in this study read between a 7th and 8th grade level, despite self-reported grade level accomplishments of 9th-12th grade. Data analysis showed no statistical different in knowledge responses between mothers with one child and mothers with more than one child at home. The authors report mixed results from the study. Age was not correlated with number of correct answers upon teach-back, however was correlated with an increase in general knowledge about the vaccines. The researches note an interesting connection between REALM (Rapid Estimate of Adult Literacy in Medicine) scores and correct teach-back responses. Mothers with higher REALM measures (indicating higher levels of health literacy), were more likely to report completely correct responses when asked to teach-back the vaccine education. Authors of this study noted sample size as a limitation, and indicate benefits from further research on how vaccine information is received by patients. Authors emphasized the importance of nurse clinicians utilizing verbal communication techniques to improve health literacy levels of patients. Stressed is the importance of not relying on printed educational information alone, and employing teach-back techniques to confirm understanding, knowledge transfer, and increase health literacy levels of patients.

Organizational Health Literacy Changes

Coulter & Ellins (2007) highlighted the need to address health literacy in organizational plans as a method to strengthen patient engagement and reduce inequalities seen in health. This Level IV article originally published in the British Medical Journal reports on a literature review aimed at patient focused quality interventions that address health literacy, self-care, patient safety

and clinical decision making by providers. Consistent with other reviews reported in this paper, Coulter & Ellins (2007) identified multiple variants to outcome measures, and thus note the difficulty in comparison of results. Results of this review were categorized in four areas: Improving health literacy, Improving clinical decision making, Improving self-care and self-management of chronic disease and Improving patient safety. In total, 25 reviews were found that addresses health literacy outcomes. Positive effects on patients' knowledge and health behavior were noted in ten of the reviews. Positive effects on patient experience and use of health services were noted in ten and nine reviews respectively. 22 studies were reviewed that addressed improved clinical decision making, with between two and eight studies reporting positive outcomes in the same categories. 67 reviews were studied for results improving self-care and self-management. 19 of these reviews noted a positive improvement in patient knowledge. More than half of articles that addresses self-care outcomes reported positive outcomes in patient experience and use of health service. Fewer reports were noted in the patient safety outcomes category, however in those reported positive outcomes were found in all categories.

One intervention highlighted in Coulter and Ellins (2007) review is the use of decision aides as visual sources of information to improve clinical decision making. Decision aides were evaluated in ten systematic reviews reported. Coulter and Ellins (2007) describe the use of decision aides as a partnership opportunity between the patient and provider. A decision aid is any type of visual media that provides information to patients to help prepare the patient for a medical decision. Often time videos or descriptive graphs are used to impart statistical data or medical knowledge in a patient friendly manner. Decision aids are described as being cost effective and tools that increase patient participation in decision making, a health literate technique.

Another intervention noted in the Coulter and Ellins (2007) review was the ability of patient's to access their own medical notes, as a health literate intervention aimed at improving self-care and self-management of chronic disease. Whether through tele-health programs monitored by home health agents, or open-record programs where patients can access medical records, patient held records were shown to be a cost-effective intervention aimed at improving patient self-care and health literacy. Through the reporting and engagement of these patient based outcomes, the authors have described additional health literate interventions clinicians can use to engage their patient population.

Novant Health (2014) described how health system change was sought after and measured. As a case study example, Novant Health shared their story with both the Institute of Medicine and Agency for Healthcare Research and Quality in 2014. Novant Health, a multi-site and multi-focus health system strategically placed health literate interventions in their corporate plans. Focusing on the Ask Me 3 health literate model from the National Patient Safety Foundation and adding a layer of teach-back, Novant was able to show increased knowledge for patients and decreased hospital admissions. Novant Health focused on instructing over 19,000 clinicians in their health system on the health literate communication techniques. Their 2014 report shows a 78% increase in Stroke patient's understanding of treatment plan, 200% increase in Heart Failure patient's knowledge on needs for self-management of condition, decreased hospital readmission rates for heart failure patients and an increase in patient satisfaction as measured by HCAHPS.

To achieve these outcomes, Novant (2014) instructed staff on utilizing the Ask Me 3 technique at each patient interaction. The Ask Me 3 technique was developed by the National Patient Safety Foundation, and proposes including three main topics in each patient-clinician

communication. Those three items are: *1) What is my main problem? 2) What do I have to do? 3) Why is it important for me to do it?.* Novant also instructed clinicians on the use of teach-back. Novant's improvement in patient outcomes is reported to have stayed at the current level for the two years since intervention began. Novant's work shows concrete education for clinicians, specific patient outcomes for measure, and the ability to implement health literate clinician education on a large-scale.

Nurse clinicians function in a variety of settings. Wong (2012) discussed health literate practices in occupational health settings as a priority for improving health of the population served. In this Level IV article, Wong (2012) highlighted an action plan to improve health literacy strategies for employers, and describes the health literacy landscape from the view of the employer. Noting the prevalence of low health literacy, Wong (2012) reported the need to focus on health literate interventions in what is considered a vulnerable population for occupational health nurses. Wong (2012) highlighted the Attributes of a Health Literate Organization (Brach, 2012) as discussed earlier. She noted the ability of the Attributes to serve as a framework for employers looking to increase health outcomes in their most vulnerable employee populations. Wong's (2012) report provided examples of employers and advocacy groups who have joined together to bring literacy or heath interventions to the employee population. The report focuses on highlighting effective communication as a strategy organizations can employ to improve the health literacy skills of their employees and impacting health in the region served. In Wong's (2012) summary, the focus is shifted to interventions aimed at increasing the health literate qualities of the employer or organization.

Improving Patient Health Literacy

Evidence found in the literature also focuses on distinct interventions to improve a patient's health literacy. Often focused on increasing patient's basic literacy skills as a venue to increasing health literacy, these interventions can be termed as simple or complex. Clement et al's 2009 systematic review of interventions aimed to improve literacy for improved health outcomes noted the difference between simple or complex interventions. Simple is noted to be an intervention aimed at unimodal direction, as in changing an intervention tool or improving a resource. The complex interventions are described as multimodal and involving behavioral measures. Clement's systematic review is aimed at the complex interventions used to improve health outcomes.

Two researchers independently reviewed common databases for evidence. Inclusion criteria was reported in the study and focused on adult participants in randomized controlled trials or quasi-randomized controlled trials, with at least one health-related outcome measured. Ultimately, 15 trials were reviewed for inclusion in the study. The majority of studies (n=13) were conducted in the United States, and five were in outpatient settings. The authors note that measures varied between reviewed studies, and very infrequently overlapped. Clinical measures, such as blood pressure, weight, and blood cholesterol were measured. In addition, self-reported health status was measured in reviewed studies.

Interventions described in this systematic review focused on patient knowledge improvement. One study reviewed utilized an educational session with pharmacist or health educator, combined with a plain-language informational booklet. Another studied relied on training clinicians, and providing informational booklets to the patients. A few studies utilized a

telephone intervention to impart knowledge to the patient, and more utilized scheduled educational programs over several weeks' time.

In the 15 studies reviewed, 13 reported positive outcomes as measured. The authors reported on a detrimental outcome noted of decreased physician satisfaction. The authors note the potential ability to mediate this response with increased physician health literacy training. All studies reviewed focused on patient literacy interventions. Authors of the review note that in some studies, poor quality design may factor into some measured outcomes. While review authors note limitations of the review as being unblended and open to potential publication bias, they highlight the strength of the search criteria as creating a good outcome for review. Authors concluded that interventions aimed at improving patient literacy can have positive health outcomes for patients with measured low health literacy. Noted in the review is the extensive resources needed for some of the interventions described. Cost and expected benefit should always be considered when planning a literacy intervention.

An earlier (2005) systematic review examined similar interventions aimed at improving health for persons with measured low health literacy. Pignone et al reviewed interventions between 1980 to 2003. Included in this review were articles measuring a health related behavior, clinical outcome (biologic), cost or utilization of care, or self-reported health status. Process of this systematic review is similar, with multiple researchers utilized in a systematic process. 683 articles were selected from an initial 2331. After full review, 73 articles were retained for further evaluation. Studies included in this systematic review must have demonstrated a health outcome, included baseline data, and measured literacy of the patient. In total, 20 trials were reviewed. Studies were classified as randomized controlled trials, nonrandomized controlled trials and uncontrolled, single-group trials.

Of the 20 trials reviewed, 12 examined health knowledge. Interventions described including adjusting informational pamphlets, use of videos, computer-generated modules, and even package labeling. One trial studied included six classes over a scheduled time frame, another included 8 scheduled classes for an educational program. The majority of studies (n=19) were graded as having fair or good quality. Common study limitations are noted in the review and include an inability to address multifactorial variants, and design issues related to random assignment or statistical review.

At the time of this statistical review, the authors noted that similar studies to measure effect of health literate interventions on patients' health outcomes were few. These authors also noted mixed results, and an inability to draw global conclusions. However, in some cases, purposeful manipulation of patient education materials to improve literacy was effective in increasing health knowledge, behavior, and short term use of preventative care services. No positive or negative biological marker adjustments were noted in the studies reviewed. The authors of this review noted the study limitations, and highlighted the inability to obtain meta-analysis based on the lack of biological health outcomes and the variety of knowledge and behavior outcomes studied.

Sorenson et al (2012) recognized the varied definitions and approaches to health literacy. In their 2012 report, they aimed to align definitions and responsibilities for health literacy interventions in a framework to address public health outcomes. The authors note that the health literacy of a patient must always be taken in context with their family life, social surrounding and more. These influencing factors can either hinder or help a person to "take responsibility for one's own health as well as one's family health and community health" (p. 1). As a part of this study, researchers completed a thorough literature review to both define and conceptualize health

literacy. In identifying the factors in health literacy as a concept, the authors note multiple avenues to explore. Issues such as civic literacy, fundamental literacy, functional health literacy and interactive literacy. Models identified in this systematic review focused on the role of a health-related experience in the development of one's health literacy.

Highlighted in this review were consequences of the health literacy of the person. Having to interact with the health system and understanding disease prevention are two factors on the proposed continuum of healthcare. A third factor, operating as a member of the larger community and addressing health promotion needs is highlighted. This movement in the continuum is referred to as the progression of health literacy out of the health system and into a larger public health sphere. The authors note the implication of the study of these conceptual models as moving health literacy interventions from within the health system to external foundations and organizations. The implications of this indicate a need for involvement and education of community health workers, community based organizations, and public health advocates.

Interpretation

The literature clearly demonstrates the need for structured health literacy education for clinicians in various roles of healthcare. While the variety of interventions and outcomes makes a meta-analysis or measured systematic review difficult, it provides clinicians the opportunities to choose interventions specific to their setting for implementation. Health education and provision of care does not occur in only one setting, and as such, the interventions needed should encompass a wide range of settings and practice structures.

As modeled in the literature, the imperative is for clinicians to assess the health literacy needs of their organizations. Models are present and available for assessment of the environment

and practices. However, without increased education on such models, clinicians may not be in a position to assess and employ these tactics. The Health Literate Care Model identifies the need for health literate interventions in order to provide comprehensive clinical care with positive health outcomes. However, clinician education on such a model is inadequate.

The Health Literacy Skills Framework describes several concepts present within health literacy. Communication, knowledge, health outcomes and societal influences are listed as the constructs in which health literacy skills are gained, measured and tested. As such, clinicians can employ health literacy skills in these four domains. In this literature review, I identified the outcomes of interventions aimed at improving clinician skills to increase patient health literacy. Theme saturation was noted among the articles, with the most frequently noted interventions reported as the use of teach-back and plain language use. The interventions are described as a part of the framework below.

Communication

Clinician skills such as the use of teach-back, motivational interviewing, teach-to-goal, and models like the Four Habits Model and the Ask Me 3 model all demonstrate positive results on the clinician's ability to communicate effectively within the patient-clinician relationship. Focusing on patient-centered communication, clinicians are guided on ways to assess knowledge, assess ability for change, guide the patient toward change, and then re-assess transfer of knowledge through these techniques. In the HLS skill framework, the clinician's ability to communicate well is a factor in how the patient's health literacy skills are developed and framed.

Knowledge

Almost all studies reviewed indicated a positive shift in patient knowledge when health literate techniques were utilized. In the HLS framework, patient's current and prior knowledge is a factor in the patient's health literate ability, and the patient-provider interactions. While behavior or biological change was not noted in each study, improvement in knowledge was shown to be significant.

The HLS framework proposes the relationship between health literacy and health related outcomes. In multiple studies, health outcomes were positively impacted by clinician use of health literate techniques. Patient outcomes were measured in biochemical responses and/or number or length of interactions with the health care system.

In addition to the skills of the individual and the single interactions between the patient and the providers or clinicians, also proposed in the literature review is the influence health literate patients have in their community of health. For example, Sorenson et al (2012) noted the role a health literate individual plays in contributing to the health of their community, the spread of disease, and the management of chronic disease in the community setting.

This literature review demonstrates the effect improving clinician's health literate techniques can have on the patient-clinician interaction. According to the demonstrated framework, repeated exposure to health literate communication can increase a person's health literacy skills. Persons with higher levels of health literacy are then better skilled to function in their larger environment in addition to future health visits.

Implications for Nursing

Education

It was demonstrated within the literature that nurse clinicians especially were in a position to impact communication in patient interactions. However, most nurses received little to no education on health literate communication techniques in both nursing school and on the job training. While specialty groups and communication advocates may focus on health literate techniques in their training, this represents a smaller population of trained nurses. One distinct aspect of the value of nursing is the role the nurse plays in patient education. Without nurses trained in health literate techniques, nursing as a profession will be less effective in imparting knowledge and supporting patient health behavior change. Fundamental nursing training should be adjusted to include evidence on health literate communication techniques, and should be followed up with in-context training in health systems. Effective communication training techniques outlined in this study involve role-play techniques, story-telling, and guided practice. Training center, schools and health systems should employ similar techniques to increase nurse's skill and should not solely rely on computer based or impersonal methods for communication training.

Practice

In one study, physicians noted they typically relied on the nurse for patient education and follow up of patient understanding. This indicates an attitude in physician culture which decreases the perceived responsibility of the physician to engage in evidence based communication techniques. However, studies reviewed indicated the positive health effect

physicians can impart by using such techniques. As such, physicians and nurses should be engaged together to impact the health literacy of their patients by engaging in health literate care.

Communication practice for both providers and clinicians should include the health literate practices outlined in this review. Clinical skills such as communication about medications, using the teach-back method and patient centered communication directions should be employed as standards of care in practice. Educating and employing communication techniques can be difficult when addressing large populations of clinicians or providers, and should not rely only on computer based learning techniques. In the interventions reviewed in this paper, education and practice changes were completed after simulation and role play training scenarios. Impacting individual practice requires continual attention to these best practice techniques.

Demonstrated in this review are the roles other health clinicians play in impacting patient communication. As leaders in patient education, nurses are in a position to influence their colleagues in the need for health literate techniques and the positive patient outcomes resulting from use. Knowing the outcome and implications for public health, nurses have a responsibility to ensure health literate communication occurs and education is shared with peers. Research is needed regarding the effect nurses have when leading health literate training and impacting organizational and regional communication policies. The implication for nurse advocacy organizations, schools of nursing, and employers of nurses is to address health literacy training within their individual settings.

Policy

Nurse leaders should be aware of the principles of health literate care and the effects low health literacy has on both the health system and the health of a population. Nurse leaders an in a position to influence health systems and organizations to create health literate environments of care by influencing training requirements and process within the health system structure. Creating policies that support and mandate the use of health literate techniques, and supply the training needed can help to impact both health quality metrics and individual patient health. In public arenas, nurse leaders can influence governmental policy to include health literacy provisions. As an example, the Affordable Care Act includes language on the provision of health literate care. In addition, the National Standards for Culturally and Linguistically Appropriate Services also include health literacy provisions. Nurse leaders can assist their organizations and fellow clinicians to meet these standards by employing techniques and training outlined in this paper.

Dissemination

Studies in this literature review were included in a compendium produced for the Central Pennsylvania region. Highlighting efforts aimed at improving communication and knowledge, resources were made public through the work of the Aging and Health Disparities Task Force for the Foundation for Enhancing Communities. Upon request of the task force and in an effort to reach community based organizations, this author has developed training modules to support use of the website toolkit and improve health literate knowledge of the community health workers. The educational training outline can be found in Appendix A. In attempts to engage clinicians in health literate conversation, a poster was also developed from the content reviewed. This poster,

reflected in Appendix B, was presented at the Penn State Public Health Symposium, on Wednesday April 29th in Harrisburg Pennsylvania.

In addition to supporting the Aging Task Force initiatives, this author has utilized content from the review in long-term health literacy training for inpatient nurses. Information about the process of that training and the measured outcomes is represented in Appendix C. For the pilot unit, 60 Registered Nurses from a medical surgical nursing unit completed a three hour health literacy training course over a one month time frame. Nurse's communication skill was objectively reported through patient response on HCAHPS, notably the HCAHPS question "My nurse explained things to me in a way I could understand." Two – month follow up to the intervention shows a positive impact. Long-term assessment of both the course and the HCAHPS reporting is still under review at the time of this paper. The initial results, in poster form, were presented at the 2015 IHA Health Literacy Conference in Irvine California on May 7, 2015.

Conclusion

In this climate of health care reform and the need for measured patient outcomes, clinicians have an important role in ensuring evidence based communication techniques. The implications of the use of such techniques are far-reaching, and show promise for immediate health system related improvements as well as long-term positive effects on public health. Current literature suggests training models for health literacy are not present in standard clinician education, leaving both clinicians and patients vulnerable and without a framework for good communication.

Many techniques are supported for use in clinician communication. The evidence supports a variety of interventions and their use in specific care settings. Clinicians can look to the evidence for guidance on both the format of education sessions and specific interventions.

Nurse advocates are in a privileged position and hold responsibility in educating nurse peers and other clinician colleagues in health literate communication techniques.

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Appendices

Appendix A: Education Program Outline

The Age of Health Literacy

Addressing Health Literacy in Central Pennsylvania

Health Disparities Among the Aging Population Task Force 2015

What is Health Literacy?

The degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions (Ratzan and Parker, 2000)

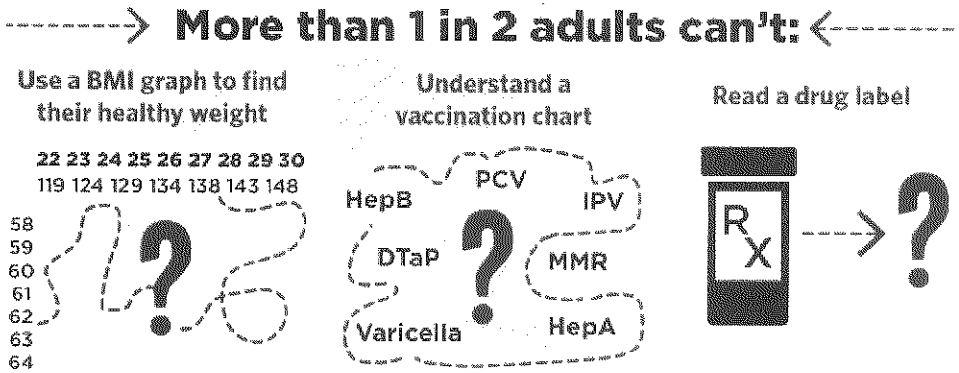
AHRQ
Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

Health literacy allows the public and personnel working in all health-related contexts to find, understand, evaluate, communicate, and use information.
Health literacy is the use of a wide range of skills that improve the ability of people to act on information in order to live healthier lives. (Calgary Charter, 2008)

The Centre for Literacy

So really…what is it?

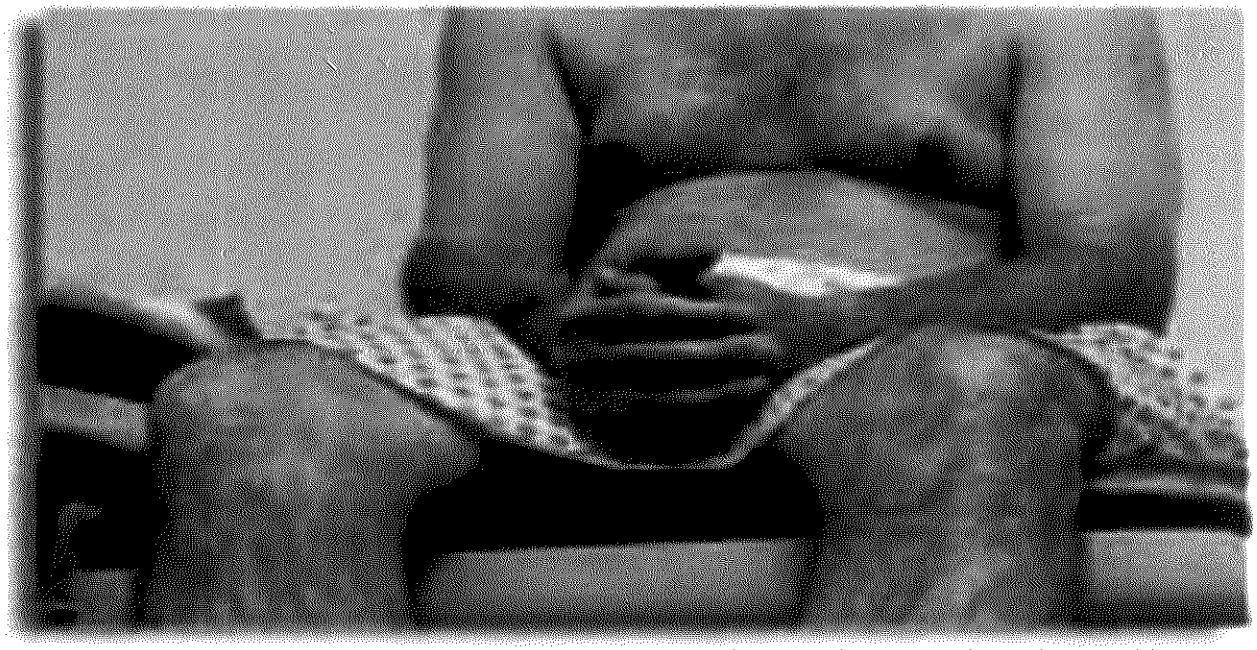
- **Reading**
- **Writing**
- **Listening**
- **Speaking**
- **Numeracy**
- **Critical analysis**
- **Communication**
- **Interaction**



CommunicateHealth

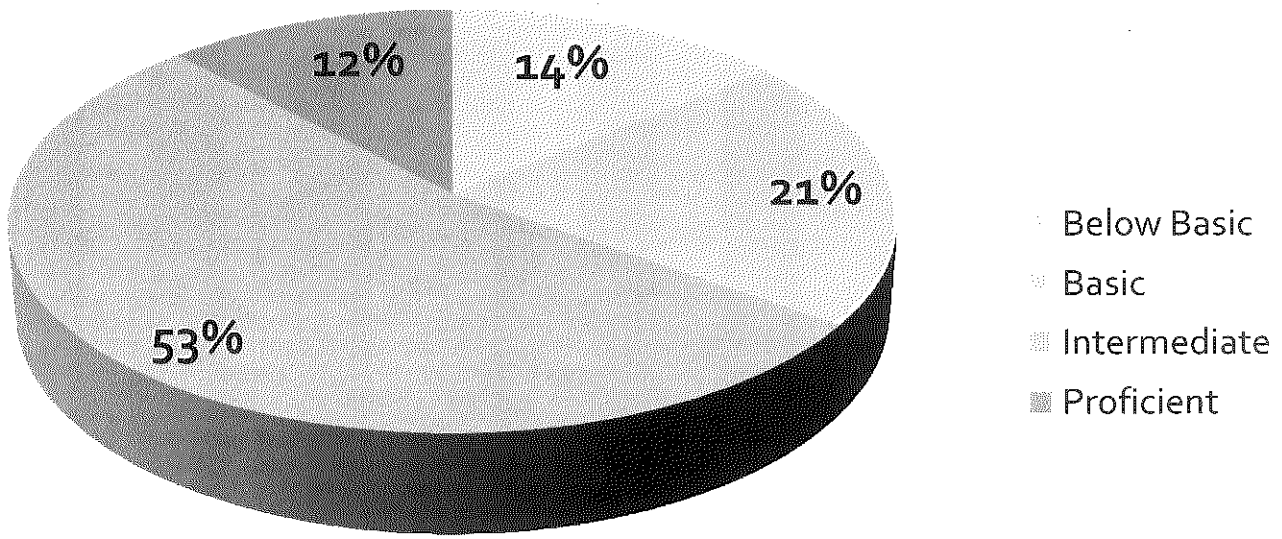
Let's Listen

Medical studies indicate most people suffer a 68% hearing loss when naked.



Slide source: CJR, NNLM

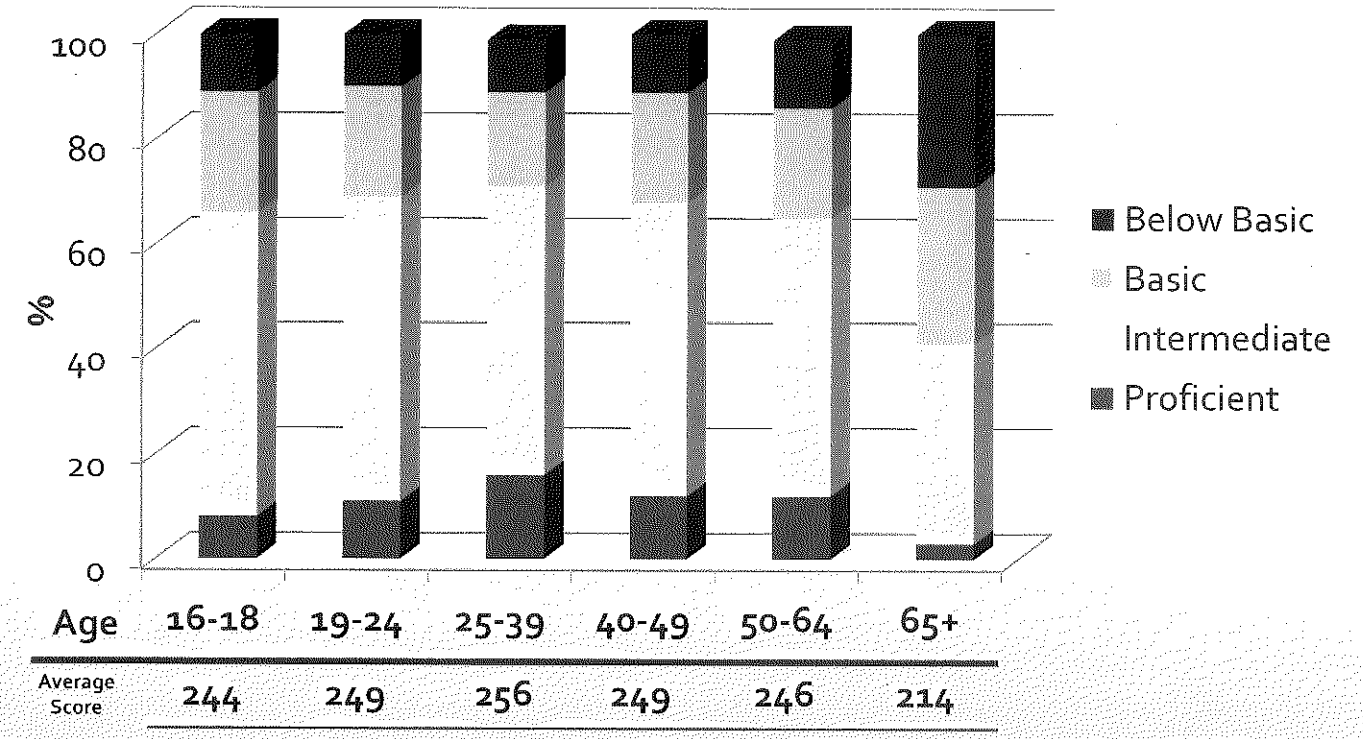
What We Know



U.S. Department of Education
2003 National Assessment of Adult Literacy

America's Health Literacy: Why We Need Accessible Health Information. An Issue Brief From the U.S. Department of Health and Human Services. 2008. American adults age 16 and > Over 19,000 adults from 38 states & D.C. surveyed

What about our Older Adults?



National Assessment of Adult Literacy, 2003

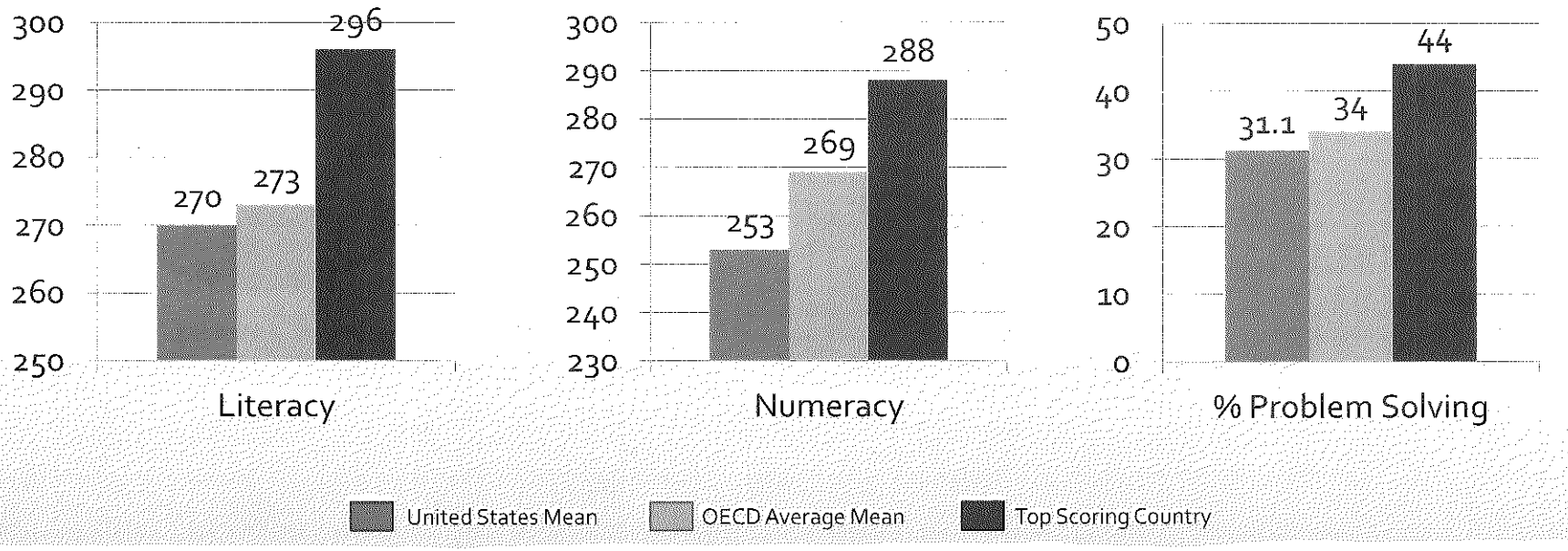
Vulnerable Populations

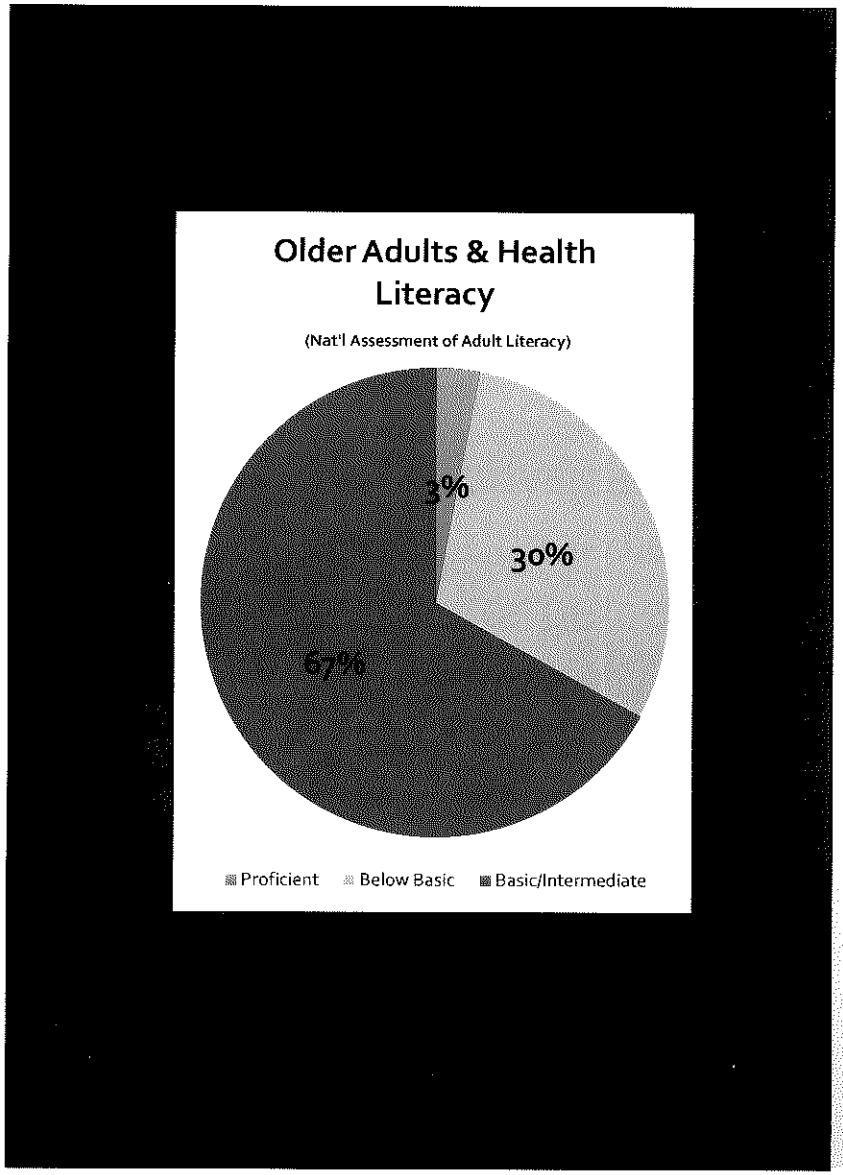
- People living below the poverty line
- Ethnic & cultural minorities
- People with less than a HS diploma
- People over 65
- People who speak English as a 2nd language

So What's New?

OECD
BETTER POLICIES FOR BETTER LIVES

Program for the International Assessment of Adult Competencies (2012)





Increased Cost

Increased number of chronic conditions

Decreased (self-reported) mental health

Increased Hospital Admissions

Decreased participation in age appropriate screenings

Even after adjusting for

dementia
physical illness
emotional disturbances
sensory or perceptual deficits
decreased vocabulary

the connection between lower health literacy and increasing age is significant.

Baker (2002) as reported by (Ownby, 2012)

Provider Involvement

Patients are able to recall as little as 50% of what they are told by physicians (Schillinger et al, 2003)

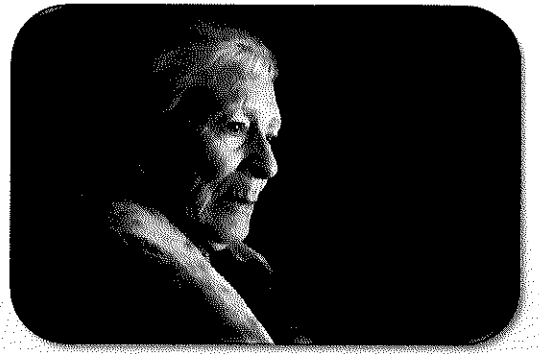
Up to 80% of verbal instruction is forgotten immediately by the patient. (Kessels, 2003)

A key component of health literacy:

The interaction between the skills of individuals and the requirements and assumptions of health and social systems. (Institute of Medicine, 2010)

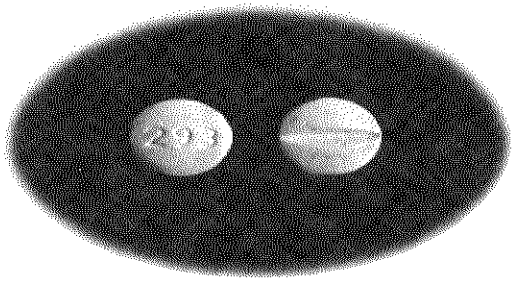
What's Happening?

We are overestimating patient understanding, nearly all of the time.



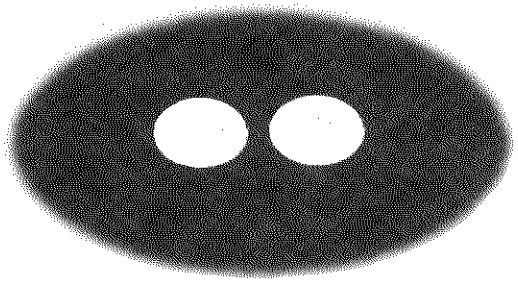
Let's Look

Name that drug…



Lopressor

Twice a day

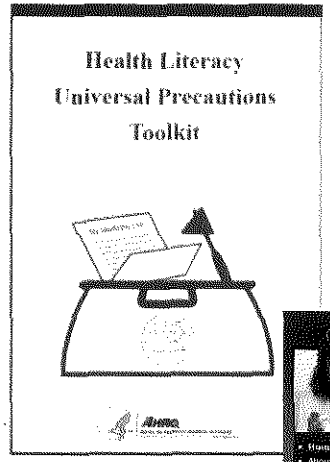


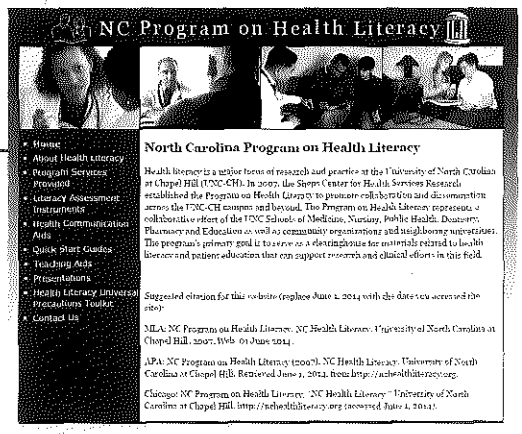
Lorazepam

Once before bed

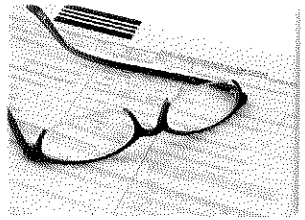
What I Can Do…

- Avoid Robotic Thinking
- Slow down
- Encourage Questions
- Communicate with Pictures
- Use Plain Language
- Approved Translation Use
- Use Teach Back Every Time
- Adult Education Methods



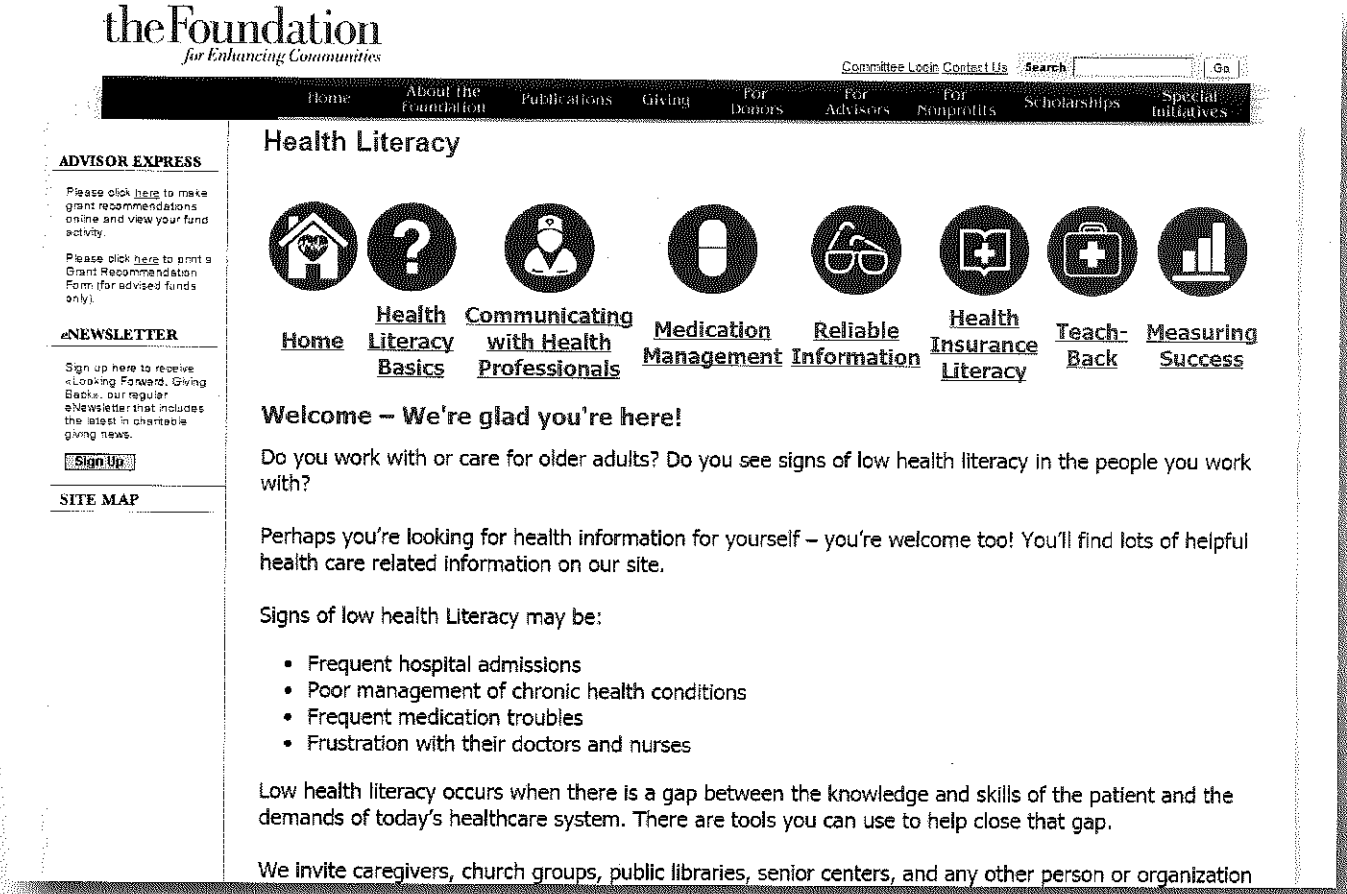


What We Can Do…



- Transition of Care Models
  - Project RED/Transitional Care Model/BOOST /INTERACT, etc/
- Improve Material Design
  - Utilize the PEMAT for measurement
- Utilize Focus Groups/Field Testing
- Evaluate Marketing/Way Finding/Web Design
- Health Literate Interventions

….and add Health Literacy to your curriculum!



Tools for your journey..

Communicating with Health Professionals

NIH National Institute on Aging
Turning Discovery Into Health

CFAH CENTER FOR ADVANCING HEALTH
Evidence. Engagement. Equity.

AHRQ Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

Proven Campaigns

National Patient Safety Foundation

1. What is my main problem?

i.e. too much fluid

2. What do I need to do?

i.e. weigh myself daily

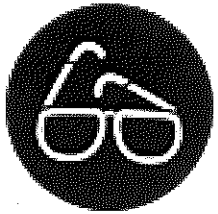
3. Why is it important for me to do this?

i.e. to prevent hospitalization

Medication Management

EDUCATE *before* YOU MEDICATE
www.talkaboutrx.org

The NCPIE Coalition: working together to promote safe medicine use



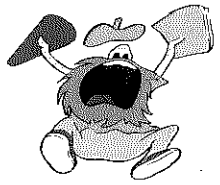
Reliable Information

NIHSeniorHealth

Built with You in Mind

Design & Format

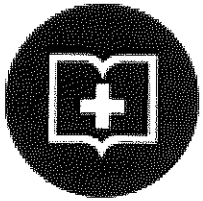
- Keep instructions brief, in a logical order, and placed where readers need them.
- Use *italics*, **bold** and color sparingly.
  - They can be distracting, and lose their meaning if overused.
  - Colors often make your materials more difficult to read.



○ Use consistent, easy to read fonts.

Studies have shown that if a font is difficult to read, people will think that the information is difficult to understand.

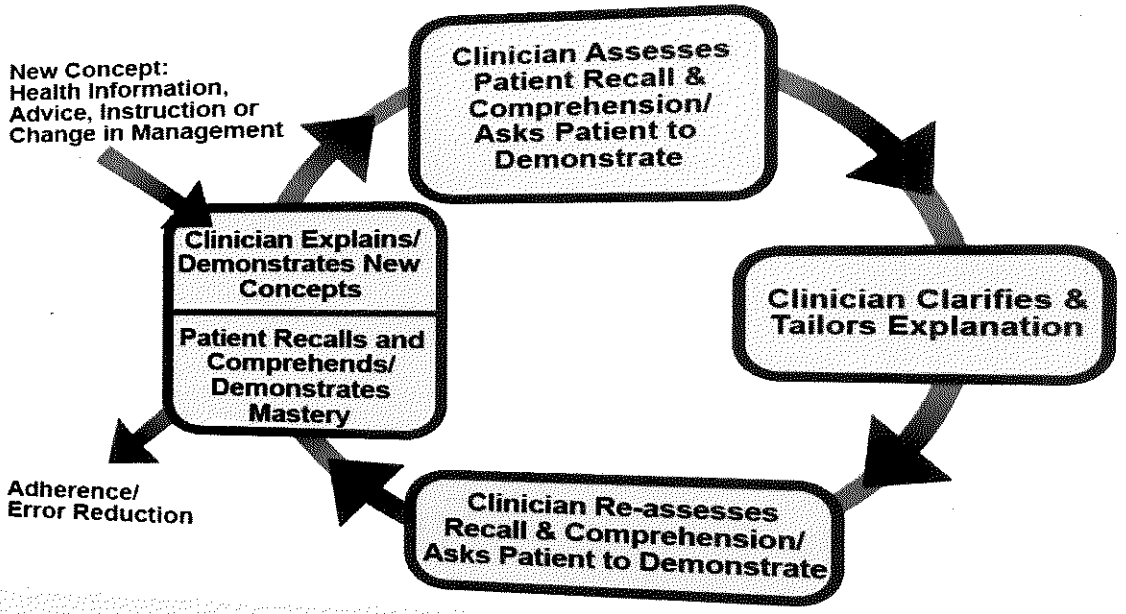
- Don't use **ALL CAPS**
  - **ENTIRE PARAGRAPHS WRITTEN IN ALL CAPS ARE MORE DIFFICULT TO READ THAN PARAGRAPHS WRITTEN WITH NORMAL CAPITALIZATION.**
  - **In the online world, ALL CAPS often means that you are "yelling."**



Health Insurance Literacy

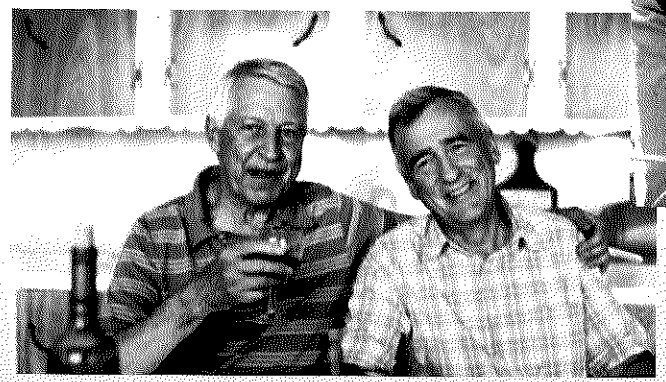
What do I need to know about my health insurance?

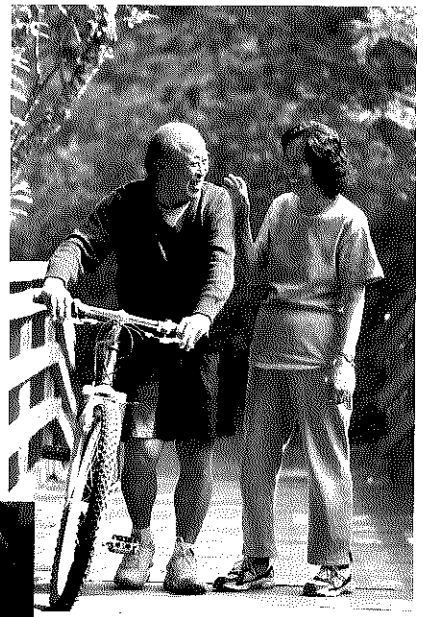
Always Use Teach-Back



AHRQ, 2010

Measuring Your Success





Let's talk business..

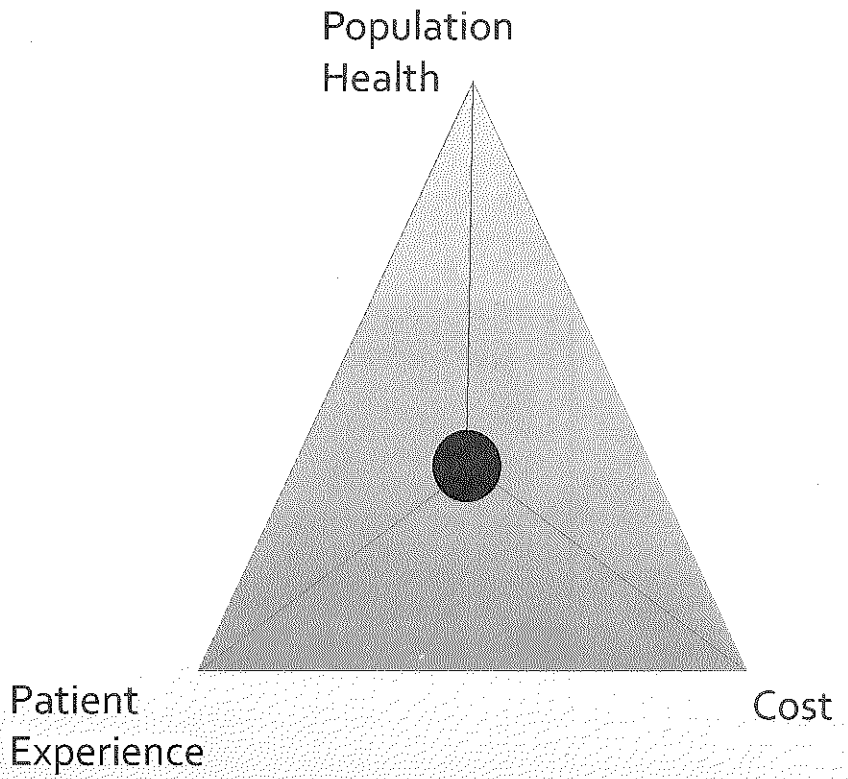
IHI's Triple Aim

- Population Problems
- CAHPS Questions
- Cost per Case

Lean /Six Sigma

- Consistency

6σ



Thank you TFEC!