Overview

1. Health Literacy: A Few Basic (but important) Assumptions
2. Challenges of a Rapidly Aging America
3. Making it Simple: A Health Literacy Research Agenda
4. …But Significant: A Healthcare Activation Research Agenda
5. Advancing Health Literacy among Older Adults
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Design of effective, scalable, health system-based strategies to promote patient self-management

Since 2004

Department of Medicine
- Division of General Internal Medicine & Geriatrics
- Department of Surgery
- Department of Medical Social Sciences
- Department of Psychiatry & Behavioral Sciences
  - Clinical Psychology PhD Program
Confluence of 2 Age-related Problems

**Body**
80% of adults over 65 live with ≥2 chronic conditions (vs. 18%; 18-44 years)

**Mind**
'Fluid' cognitive abilities necessary for self-care are known to decline with increased age.

**Assumptions**

1. A person’s cognitive skills are a major determinant of health literacy skills
Health, Literacy, and ‘Health Literacy’

Health Literacy...
The cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health.

– World Health Organization
Assumptions

1. A person’s cognitive skills are a major determinant of health literacy skills

2. The requisite health literacy skills needed to successfully manage health is determined by the design, accessibility of a healthcare system

3. Reducing the ‘cognitive burden’ of healthcare means…
   - better communication
   - simplified patient roles
   - proactive, learning healthcare systems

4. Addressing cognitive burden alone will not remediate all existing health literacy concerns
Health Literacy in Older Age

- Strong, consistent evidence that adults 65+ have more limited health literacy skills compared to younger adults
  - drivers: cognitive decline + educational attainment + sensory impairment (hearing, vision)
- Moderate, increasing evidence of within-subject health literacy declines
- Increasing healthcare needs
Need for a Patient-Centered Approach...

“Keep watch also on the faults of patients, which often make them lie about the taking of things prescribed”

- Hippocrates

“America’s healthcare system is neither healthy, caring, nor a system.”

- Walter Cronkite
Our Target – The Burden of Healthcare

Challenges to Patients

- Polypharmacy
- Multiple lifestyle behavior changes (diet, physical activity)
- Burdensome self-care tasks associated with monitoring conditions and managing symptoms (foot exams, blood pressure monitoring)
- High prevalence of functional limitations affecting self-care ability
- Requisite illness/treatment knowledge to problem solve around self-management
- Frequent healthcare provider visits with multiple prescribers
- Frequent pharmacy visits to collect typically unsynchronized prescriptions; sometimes multiple involved pharmacies
- Financial costs
- Changes in cognition, caused either by age, illness, or treatment
- Co-existing behavioral health issues
- Unmet health-related social needs (housing instability, food insecurity, transportation, etc.)
Challenges to Primary Care

- Evidence-based guidelines typically focus on a single chronic condition
- Potential for treatment interactions for different conditions, and as a result inappropriate prescribing
- Knowledge of the effect of certain treatments less understood among patients with MCC
- Involvement of one or more specialists, and quality of provider-provider communication
- For many practices, lack of continuity of care
- Visit time constraints and length of time between visits
- Inadequate patient involvement in treatment decision making
- Familiarity and/or availability of referral sources in the community to support patient self-management
- Incomplete, outdated documentation on patients’ most current psychosocial circumstances that may be interfering with proper self-management of chronic conditions and healthcare utilization

Aligned Conceptual Frameworks

The Cumulative Complexity Model

Life demands

Workload

Capacity

Resource scarcity

Burden of treatment

Outcomes

(1) Access care
(2) Use care
(3) Enact self-care

Resource scarcity

Health literacy

Patient-Provider Interaction

Patient factors

Provider factors

Self-care

Healthcare Access and Use

Patient factors

System factors

Occupational Employment: Book Support Culture

Cognitive Function

Health Status: Hearing, Vision, Mobility

*Shippee et al. J Clin Epidemid 2012

Abnormal PTSD Exposure & Well Am J Health Behav 2007
AHRQ Complexity Model Addressing Healthcare for Patients with MCC

Making it Simple.
$2.7 Billion

Cognitive Load of Self-Care Tasks

- Physical health (co-morbidities, functional independence)
- Mental health
- Cognitive health
- Number of healthcare providers, frequency of visits
- Polypharmacy & regimen complexity
- Medical devices
- Involved technologies
- Monitoring responsibilities
- Health insurance
Health Literacy 1.0: Cognitive Load of Health Information

- Incomplete or vague information & instructions
- Conflicting sources, nature of source
- Modality (spoken, print, multimedia)/opportunity for re-review
- Lack of coordinated ‘system’ of information
- Factual vs. procedural content
- Amount of content
  - Reading grade level
- Format, organization
- Distraction (e.g. extraneous information, discordant imagery, environment)
- Communication speed (audio, visual)

Deconstructing Self-Care Tasks (NIH/NIA)

- Following multi-step written instructions
- Consenting to clinical research studies
- Accessing/navigating online health resources (e.g. portal)
- Recalling spoken medical instructions
- Comprehending/recalling multimedia health information
- Organizing and properly dosing multi-drug regimens
- Problem-solving around treatment and self-care regimens
- Long-term care decision making
Health Literacy Interventions

A Case Example

Universal Medication Schedule (UMS)

- **Take**: 1 pill in the morning (bedtime)
- **Take**: 1 pill in the morning, 1 pill in the evening
- **Take**: 1 pill in the morning, 1 pill at noon, 1 pill in the evening
- **Take**: 1 pill in the morning, 1 pill at noon, 1 pill in the evening, 1 pill at bedtime

- **Morning**: 5-8 am
- **Noon**: 11-1 pm
- **Evening**: 4-6 pm
- **Bedtime**: 9-11 pm
Universal Medication Schedule (UMS)

- Provides more explicit guidance as to when to take prescribed medicine
- Reduces variable prescribing, dispensing practices that lead to regimen complexity
- Aligns with a ‘pill box’ schema
- Evidence-based: multiple studies have found the UMS
  - reduces dosing errors
  - improves regimen efficiency
  - improves adherence (14% increase)
- Yet only 1 in 8 prescriptions written using UMS
- NCPDP, USP, NAM identify it as a best practice
Simple and Significant

staying engaged with patients

beyond the point of care

Activated Healthcare System, Activated Patient/Family

Some Current Projects

NIH/NIDDK
AHRQ
Eli Lilly

Gordon & Betty Moore Foundation
TAKE IT
Treatment Adherence among Kidney Recipients by Engaging Information Technologies

- Routinely monitor regimen use, adherence & persistence via EHR portal
- Provide ‘adherence alerts’ to transplant center with specific patient concerns
- Mobilize appropriate resources to map specific problems to tailored solutions

Treatment Concern?

- Cognitive
- Psychological
- Medical
- Regimen
- Social
- Economic

Mobile Med App
(Transplant Hero)
TAKE IT

1. Mobile Med App
   (Transplant Hero)

2. Monthly Assessment
   (Patient Portal)

3. Transplant Nurse Coordinator Triage
Electronic Health Record (EHR)-enabled Complete Communication (EMC²) Strategy

Step 1. Best Practice Alert

- The FDA recommends additional considerations:
  - Suicide thoughts or actions
  - Changes in behavior and thinking
  - Loss of interest or disengagement
  - New or worsening depression
  - The FDA recommends medication information sheets should be printed automatically after the prescription is filled.

Open PDF for more information.
Electronic Health Record (EHR)-enabled Complete Communication (EMC²) Strategy

Step 1. Best Practice Alert

Step 2. MedSheet

Step 3. IVR

Step 4. Lab Report
Meaningful sharing of primary care EHR with community pharmacies to:

- Reconcile medication regimens
- Perform medication reviews
- Provide adherence alerts, updates
Meaningful sharing of primary care EHR with community pharmacies to:

- Reconcile medication regimens
- Perform medication reviews
- Provide adherence alerts, updates
- Offer clinical decision support

Patient Engagement: Keeping Pace

- Uptake of post-visit patient participation is high:
  (~65%) - (IVR, portal, SMS) within 72 hours
Other Preliminary Evidence

News Releases

Web-Based System for Self-Reporting Symptoms Helps Patients Live Longer
Study Supports Increased Use of Patient-Reported Outcomes in Oncology

FOR IMMEDIATE RELEASE
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Contact
Aline Fisher
571-483-1354
aline.fisher@ascco.org

ASCO Perspective

- Improved quality of life
- Fewer ED/hospital admissions
- Better survival

Patient Engagement: Keeping Pace

- Uptake of post-visit patient participation is high: (~65%) - (IVR, portal, SMS) within 72 hours
- Bandwidth of primary care to respond limited
Advancing Research Priorities

Moving Forward

- Direct more attention to the ‘user interface’ of healthcare
  - Strong evidence base of health literacy best practices

- Create opportunities to keep older patients engaged
  - leverage technologies, offer multiple modalities

- Identify/classify individuals at risk
  - screen for low health literacy, low ‘activation’?
  - allocate more resources to those most in need
“For God’s sake, stop researching for awhile and begin to think”.

- Sir Walter Hamilton Moberly
  British Scholar, Philosopher, 1949

Thank You!

Michael Wolf, PhD MA MPH
Professor, Medicine & Learning Sciences
Associate Vice Chair, Department of Medicine
Associate Division Chief
General Internal Medicine & Geriatrics
mswolf@northwestern.edu