Understanding OTC Medication Behaviors of Older Adults

Research Is Needed to Better Understand and Promote Safe and Effective Use
Webinar Panel

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Quick Poll of Audience

Who is attending?
Webinar Agenda

• Introductions
• OTC and Health Literacy
• OTC and Cognitive Processes/Decision Making
• OTC and Clinician Interface
• OTC and Lay Caregiving
• Technology to Support Safe and Effective Use
• Conclusions
• Questions
• GSA and CHPA National Summit on OTC Medication Behaviors of Older Adults
• Omni Shoreham, Washington, DC
• April 10, 2013
Summit Participants and Focus

46 attendees from industry, academia, and practice convened to evaluate current research on OTC medication behaviors in older adults and identify gaps in the evidence base. Specific areas of focus included OTC medication literacy, the perceptual and cognitive basis of OTC medication decision making, the interface between clinical and family care and OTC use, and technologies to support optimal OTC behavior.
Goals of the Summit—Overall

• Develop the science of OTC behaviors among older adults to promote safe and effective use of OTC medications
  – Recruit cadre of behavioral scientists with appropriate expertise to work in this critical and relatively neglected area
Goals of the Summit—Specific

- Identify **gaps in research** required to improve OTC medication behaviors of older adults
- Assess **factors that influence older adults’ choice of OTC medications**, e.g., health literacy, vision, cognitive strategies, packaging
- Examine **contexts of OTC use**: role of clinicians and lay caregivers
- Identify **emerging technologies** that may support optimal OTC medication practices
• OTC Medication Patient Behaviors
  – Health Literacy (Michael Wolf, PhD, MPH)
  – Decision Making (Ruth Day, PhD)
• Contexts of OTC Knowledge and Use
  – Clinical Care (Elaine Leventhal, MD, PhD)
  – Lay Caregivers (Laura Gitlin, PhD)
• Technologies to Support Safe and Effective Use
  – Products (Chris Mayhorn, PhD; Patricia Meisner, MS, MBA; Anthony Sterns, PhD)
• Comment: M Dyer-Chamberlain, L Bix, M Bridgeman, S Albert, P Neafsey
Summit Dissemination

White Paper: Measuring OTC Medication Behaviors Promoting Safe and Effective Use
June 2013

Conference Calls
July-Aug 2013

Webinar
Sept 2013

GSA Annual Meeting Symposium: OTC Medication Behaviors of Older Adults: Results from a GSA Workgroup
November 2013
OTC Use Among the Elderly: The Role of Health Literacy

Dr. Michael S. Wolf, PhD, MPH, Northwestern University
Health Literacy

- patient engagement
- patient-centered care
- health information
- healthcare competencies
- healthcare access
- health behavior
- self-management
- Numeracy
- health communication
- motivation
- awareness
- Cognitive Function
- comprehension
- Unintentional non-adherence
- shared decision making
- navigation
- medical cognition
- knowledge
- behavioral failure
- equity
- adherence
- Language access
- health learning capacity
- health promotion
- motivation
- health literacy
- experience
- personnel
- therapy
- misadventures
- comprehension
- human factors
- CARE COORDINATION
- compliance
- health education
- health promotion
- care coordination
The business case for health literacy

- Inadequate/inaccurate knowledge of disease, treatment
- Poorer self-care skills (medication use, monitoring, device use)
- Inappropriate health services use

*Translates to:*

- Non-adherence
- Costly urgent services (unscheduled visits, ED, hospitalizations)
- Medication errors and adverse events
- Poorer outcomes (HTN, diabetes, CHF, asthma/COPD)
• 1 in 5 adults severely lack cognitive and psychosocial skills to manage personal health
• Greatest risk among those who are: >60 years old, less than high school educated, racial/ethnic minorities, multi-morbidity
• Prior studies suggest MDs, RNs, and PharmDs cannot easily identify at-risk patients
• Kripalani et al – low health literacy patients ask fewer questions; Weiss et al – don’t self-identify problems
Identify three substances that may interact with an over-the-counter drug to cause a side effect, using information on the over-the-counter label.

Average HL score for adults >65:

214
The Effect of Age on Health Literacy and Cognitive Function

Performance preserved:
- Verbal Ability
- REALM

Performance declines:
- Long-Term Memory
- Working Memory
- Inductive Reasoning
- Processing Speed
- TOFHLA
- NVS
The Health Literacy Task of OTC Use

- Recognize Symptom(s)
- Know Proper Dosing
- Concomitant Use Warnings
- Know When to Stop
- Self-Select OTC Product(s)
- Know Active Ingredient(s)
Some Unique Challenges

• Number of Product Choices
  – Brand and generic options
  – Single and multi-ingredient products

• Problematic Labeling
  – Variable, poor quality
  – Front-of-package, Drug Facts, container vs. package
  – Size of font, sequence

• No “learned intermediary”
Key Problem in OTC Behavior: Unintentional Misuse

- 42% of older adults use OTC drugs regularly (Qato et al. 2008)
- 1 in 4 (24%) adults take more than recommended max dose for one OTC product (Wolf et al. 2012)
- Nearly half (46%) of adults misuse OTC products by concomitant use (Wolf et al. 2012)
- BUT older age not consistently found to be a risk factor (NO: Taylor et al, 2012; Calamusa et al, 2012; Wolf et al, 2012; YES Qato et al. 2008)
- What DOES matter: sex, education, health literacy, prior experience
Can you take these products together?

Acetaminophen 650 mg

Acetaminophen 500 mg
Diphenhydramine HCl 25 mg

Acetaminophen 500 mg

Acetaminophen 325 mg
Chlorpheniramine maleate 2 mg
Dextromethorphan hydrobromide 10 mg
Phenylephrine hydrochloride 5 mg

Acetaminophen 250 mg
Aspirin 250 mg
Caffeine 25 mg
How Big a Problem?

• Rates of actual overdose (i.e., acetaminophen) not as high as demonstrated misuse (<10%)

• Serper et al (in prep): Examined actual misuse among 246 ED patients
  – 2% exceeded maximum daily dose
  – 11% “double-dipped” (concomitant use)
  – 49% were unaware of double-dipping with common OTCs

• Potential Serious Problem: Knowledge of ACTIVE INGREDIENT
Reduce Health Care Complexity and Demands to Match Consumer Abilities

... and Simplify

“Can we confuse patients less?”

Alastair J.J. Wood, MD
Many studies document high readability of OTC labeling
(Luk et al, 2010; Homewood et al, 2009; Zite and Wallace, 2009; Stevens et al, 2007; Pawaskar and Sansgiry, 2006)

Our study: marketing to symptom and multi-ingredients root causes of potential misuse (Wolf et al, 2012)

Few studies report prevalence of provider counseling: ~30%-60%
(Serper et al, 2013; LaCivita 2009; Fry et al, 2007; Hensrud et al, 1999)
86% of patients believe their doctor is aware of all OTC medications they are taking regularly. But...

Only 46% reported that they routinely tell their doctor about these OTC medications...

Evidence strong for best practices:

- Plain language, written materials (Doak, 1993; AHRQ, 2012)
  - Content, format, quantity (Seligman, 2007; Wilson, 2010)
  - Understandability vs. actionability

- Broader evidence base to guide multimedia
  - Use of imagery or icons with text (Morrow et al, 2012)
  - Use of interactive testing for OTCs (Neafsey, 2002)
  - Video vs. print (Wilson et al, 2012)
  - Best practices for video/web design (Wilson, 2010; Sweller, 2005)

- Web/mobile apps require further study (Chomutare, 2011)

Redesigning labels alone may yield limited benefit
Limited evidence for verbal counseling

Single Event
• “Teach back” technique (Schillinger, 2003; Kandula, 2011)
• Implementation intention (Park, 2007; Armitage, 2009)

Repeat Event
• Teach-to-goal (Baker et al, 2011)
• Brief counseling (DeWalt, 2009; Wallace, 2009)
Addressing practice redesign issues

- “Hardwiring” consumer education in practice
  - The reality of limited resources (Wolf et al, 2012)
  - Leveraging electronic health records (EHRs)
    - Patient portals

- Multifaceted interventions
  - Necessary but difficult to implement (Kripalani, 2012)
  - Deconstructing what actually worked (Rothman et al, 2004)
Summary

- Overall, evidence remains limited and mixed
  - Both problems and solutions
  - Can infer from other areas (i.e., Rx)
- Potential risk for problems high
  - Elderly at risk for low health literacy, cognitive decline, OTC misuse
  - Other factors to consider: sex, prior experience, social support (?)
- Solutions: improve labeling, increase counseling
  - At prescribing: include in medication reconciliation activities
  - At dispensing: getting pharmacists out from behind the counter
  - Both: increase awareness via public health campaigns (print, multimedia)
Available Evidence on the OTC Decision-Making Process in Older Adults

**WHAT IS KNOWN**
- Some types of decisions
- Demographic factors
- Social factors
- What people say they do

**WHAT IS NOT KNOWN**
(*BUT COULD BE*)
- How decisions are made
- Cognitive processes involved
- Decision strategies
- How factors interact
- Trade-offs
- What people do in controlled situations

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What Decisions?

• Get an OTC product?
  • Which type of product?
  • Which specific product?

• Self-selection?
  • Risks?

• How much to take?
  • How to take it?
  • When to take it?
  • What not to do while taking it?
  • What to watch for?
  ...
“Older adults are slower”

Why? (Sensory deficit, More thoughtful, ...)  
Implications? (Quality of decisions, ...)

“Older adults may have visual problems”

What types? Implications?  
(Miss words vs. overall layout?)
“Older adults may have ... trouble reading OTC labels”
Sansgiry and Cady, (1996); Braus, (1993); Holt et al, (1990)
Drug Facts

Read

Test

- Uses
- Warnings
- Other

Drug Facts
Active ingredients
Purpose
Uses
Warnings
Directions
Inactive ingredients
Drug Facts

Time

Read

Test

Uses

Warnings

Other

Good

Poor

Performance
Aspirin

**Warnings**

*Reye’s syndrome:* Children and teenagers should not use this medicine for chicken pox or flu symptoms before a doctor is consulted about Reye’s syndrome, a rare but serious illness reported to be associated with aspirin.

*Allergy alert:* Aspirin may cause a severe allergic reaction which may include:
- hives
- facial swelling
- asthma (wheezing)
- shock

*Alcohol warning:* If you consume 3 or more alcoholic drinks every day, ask your doctor whether you should take aspirin or other pain relievers/fever reducers. Aspirin may cause stomach bleeding.
Warnings
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Allergy alert: Aspirin may cause a severe allergic reaction which may include:
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Alcohol warning: If you consume 3 or more alcoholic drinks every day, ask your doctor whether you should take aspirin or other pain relievers/fever reducers.
Stomach bleeding: Aspirin may cause stomach bleeding.
Promoting Safe and Effective OTC Medication Behavior Through Interface With Clinical Care

Elaine Leventhal, MD, PhD, Robert Wood Johnson Medical School
Asymptomatic Chronic Illnesses Can Be Responded to as ACUTE

DEVIATIONS FROM “HEALTHY SELF”
SYMPTOMS / Sensory Feel FUNCTION ENERGY – MOOD Implicit or Aware

AM I SICK??

IS IT BETTER?

PROTOTYPES FOR A COLD (I hope) OR IS IT

BASED ON Symptoms Pattern/Location Rate of Onset/Duration Severity /Dysfunctions Perceived Cause

DELIBERATE RESPONSE Choose To: Take Medication; Talk to Someone; Seek Care

AUTOMATIC – RESPONSE

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If doctor said BP is silent, “you can’t tell when BP is high” and contradicted the patient’s ACUTE, DEFAULT MODEL...
Medication Adherence—Treatment Patients

53% of compliers vs. 24% of noncompliers have blood pressure in good control

Key Message

- Clinicians must ask questions about OTC use that will elicit, address, and change patients’ misperceptions about medication use and illness
  - Communicate a rationale regarding need for treatment
  - Elicit and address concerns
  - Ensure regimen is as convenient and easy-to-follow as possible
Promoting Safe and Effective OTC Medication Behavior Through Interface With Family Care

Laura N. Gitlin, PhD, Johns Hopkins University
### Estimates of Individual Caregiving Prevalence by Age of Recipient

<table>
<thead>
<tr>
<th>Type of Recipient</th>
<th>Prevalence</th>
<th>Estimated Number of Caregivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>28.5%</td>
<td>65.7 million</td>
</tr>
<tr>
<td>Only child recipients</td>
<td>1.7%</td>
<td>3.9 million</td>
</tr>
<tr>
<td>Only adult recipients</td>
<td>21.2%</td>
<td>48.9 million</td>
</tr>
<tr>
<td>Both adult and child recipients</td>
<td>5.6%</td>
<td>12.9 million</td>
</tr>
</tbody>
</table>

National Alliance for Caregiving in collaboration with AARP - November 2009
Care Tasks

Sporadic Care
- Checking in and monitoring medications
- Accompany physician appointment
- Light errands
- Communicate with health providers

Initiate IADL Care
- Monitor symptoms and provide medications
- Manage finances and household tasks
- Hire carers
- Coordinate care

Expand to ADL Care
- Monitor symptoms and provide medications
- Manage behavior and location
- Personal care
- Deal with insurance issues

Placement
- Monitor symptoms and oversee medications
- Advance care planning
- Advocacy
- Personal care

Death
Major Shift from Personal Care to Medical and Nursing Tasks

Reinhard et al, (Sept. 2012) Home Alone: Family Caregivers Providing Complex Chronic Care, AARP, United Hospital Fund
• **Key Problem:** Unintentional misuse

• **Potential Remedy:** Increase knowledge of active ingredient; move away from marketing to symptom; increase access to intermediaries (pharmacist)
• **Key Problem:** Label complexity and sequencing; use vs. warnings

• **Potential Remedy:** Simplification; “chunking” of information
• **Key Problem:** Common sense models of health complicate chronic care; challenge to adherence

• **Potential Remedy:** Clinician elicitation of OTC medications as part of patient record; patient as partner for effective use of OTC
• **Key Problem:** Lay caregivers are OTC gatekeepers without adequate guidance

• **Potential Remedy:** Caregiver interventions to enhance OTC knowledge
Some Progress But More Work Ahead

• What is optimal labeling for OTC meds?
• How do older and younger people differ in use of OTC meds?
• How to ensure optimal personalized OTC use for older adult?
• How to integrate OTC medications into medical management?
• How can lay caregivers support safe and effective OTC medication use?
Technologies to Support Safe and Effective Use
Technology to Promote Optimal Use of OTC Medications

• Great promise for smartphone apps, SMS text messaging, integrated databases:
  – Enhance accessibility to relevant information when and where needed (point of purchase)
  – Support adherence; alert to hazards
  – Monitor drug-taking behavior and reconcile medications in care transitions
• Challenges with age: Visual disorders (including color discrimination, glare), hearing loss, cognitive impairment; changes in tactile ability
Understanding OTC Medication Behaviors of Older Adults

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Appraisal

• “The Summit exceeded my expectations! From the collegial atmosphere, to the well-facilitated sessions, to actually feeling like we accomplished the goals set before us! Great work!”

• “The Summit was a great start, but there are major factors that were not addressed. The issue will need more than one day to address. It could be a semester course on its own at a university.”
THANK YOU/Q&A

Emailed to Attendees Following the Webinar:

- Webinar Power Point
- Summit White Paper
- Webinar Recording
In an effort for continual improvement, we would like to hear your thoughts. Please provide feedback by clicking the survey link at the end of the webinar.

Thank you again and hope you enjoyed the program!