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**Identifying Home Care Clinicians' Information Needs to Achieve Better Care Coordination in Fall Risk Management**

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## Outline

- Motivation and Significance
- Background
- Objectives
- Methods
- Results
- Recommendations

## Motivation

- Falls rank as the top potentially avoidable event (PAE) in Home Care CMS 2015
  - Leads to hospital re-admissions and ER visits
  - Falls → costly + lead to serious injuries or death Fortinsky 2008
- Effective fall risk management requires careful identification of clinicians' information needs to better coordinate care



## Fall Risk Management

- **Fall risk management:** Assessing patients' falls risks and reducing them by making necessary and appropriate interventions Stevens 2010
- Today, home care clinicians have access to little information that can inform the coordination of care for fall-risk management



## Significance

- HHAs are transitioning to VBP system proposed by CMS
  - Emphasis on coordinated care
- Results can help HHAs in their efforts that target reducing PAEs and improving quality of care and health outcomes



source: Google Images

## About Home Care



source: Google Images

- Challenging context
  - Requires remote interdisciplinary collaboration and care coordination [Batet 2012](#)
  - Patient homes less controllable [Gershon 2008](#)
  - Clinicians spend limited time with patients [Hirdes 2004](#)

## Objectives

1. Identify clinicians' information needs for fall-risk management and how they manage missing or inaccurate data.
2. Identify problems that impact effectiveness and efficiency associated with retaining, exchanging, or processing information about fall risks in existing workflows and currently adopted health information technology (IT) solutions.
3. Offer informatics-based recommendations to improve fall-risk management.



source: Google Images

## Research Methods

### Descriptive Case-Study

Non-participatory observations (n=5)

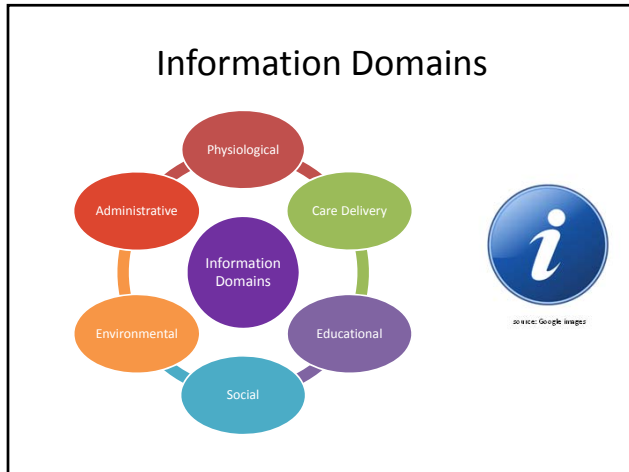
Semi-structured interviews (n=30)

Focus groups (n=15)

- Not-for-Profit HHA in Mid-Atlantic Region with three branches
- Full-time clinicians participated in the study

Objective 1

## INFORMATION NEEDS



### Physiological Domain

Information pertaining to disorders affecting organ and body system functions:

- Previous history of falls
- Functional status
- Difficulties with walking and balance
- Musculoskeletal disorders (Osteoporosis)
- Vestibular disorders
- Vision problems
- Cognitive impairments
- Neurological problems (Parkinson's disease)
- Acute conditions (Orthostatic hypotension)
- Chronic conditions (Diabetes)
- Nutritional problems

source: Google Images

### Care Delivery Domain

Information that informs the HHA's fall risk management activities and interventions:

- Brief medical history
- Hospital discharge information
  - Medications affecting balance
  - Rehab and therapy notes
  - Durable Medical Equipment (DME)
- Concise home care orders
- Specific fall-risk management goals
- Weight-bearing status (if indicated)
- Assessments (Functional Gait Assessment)

source: Google Images

## Educational Domain

- Information about educational needs of patients, caregivers, and clinicians for fall risk management:
  - Patient education level
  - Patient comprehension
  - Medications' effects on balance
  - Condition/disease's effects on balance
  - Treatment options and their associated risks



source: Google images

## Social Domain

- Information regarding patients' social ecosystem:
  - Psychosocial state
  - Culture, customs and religion
  - Values and preferences
  - Socioeconomic status
  - Language and interpretation needs
  - Caregiver availability



source: Google images

## Environmental Domain

- Information that describes physical environment in which patients lives in:
  - Broken/uneven steps and surfaces
  - Throwrugs and clutter
  - Absence of handrails/grab-bars



source: Google images

## Administrative Domain

- Information that is usually non-clinical in nature, yet crucial for fall risk management activities and day-to-day operations:
  - Patient demographics
  - Phone and address
  - Next of kin/caregiver contact information
  - Insurance and coverage information
  - Scheduling and appointment changes



source: Google images

Objective 2

**INFORMATION MANAGEMENT ISSUES****Currently Adopted Health IT Solutions  
for Fall Risk Management**The Electronic  
Health Record (EHR)

source: Google images

Fall Incident  
Reporting Application

source: Google images

**Information Management Issues**

- EHR
  - Fall-risk information hidden in individual visit notes
  - Assessments entered in once and seldom re-evaluated
  - Messaging is not done in real time
  - Not participating in HIE network
  - No integration of HHA EHR with hospital EHR
  - Many non-clinical information were not exchanged or available
  - Documentation in EHR was laborious and procedural
- Fall-Reporting Application
  - No integration with EHR
  - Reactive rather than proactive

**Data Availability, Accuracy, and  
Consistency**

- Consistency and accuracy of information was questionable at times (e.g. weight-bearing status and medication list)
- Getting accurate and consistent clinical and non-clinical patient data remains a challenge
- Better transition and handoff communication across many providers improves patient safety and outcomes [McBride 2011](#)
  - Home care clinicians start episode of care with little information [Bowles 2010](#), [Koru 2016](#) to manage fall-risks

### How Clinicians Dealt with Information Management Issues

- At patients' homes, clinicians requested, obtained, or verified information necessary for fall-risk management
  - Case communication in EHR
  - Voicemail and text messages
  - In-home observation example
- Asking patients and family members/caregivers multiple times by different clinicians
  - Trust issues = Don't you already know!
  - Becomes difficult when unable to comprehend/communicate

### Lessons Learned

- EHR had some information fall-risk information and prompted clinicians to take uniform steps
  - however it was not clear it helped reduce falls
- Health IT facilitates care coordination and improves fall-risk management programs in home care [Burton 2004](#)
  - Not clearly the case in our study
- HHA did not have any patient/caregiver-facing IT

Objective 3

### INFORMATICS-BASED RECOMMENDATIONS

### Opportunities to Improve the Currently Adopted Health IT Solutions

- EHR:
  - Revise design to make information easily accessible
  - Re-evaluate support and availability of information needs
- Fall Reporting Application:
  - Integrate/incorporate fall reporting application with EHR to support bi-directional synergy
  - Offer actionable steps to improve performance and quality

### Opportunities for Other IT Solutions

- Health information exchange (HIE) – improve exchange of relevant information
- Sensors – gather patients' physiological information such as activity levels
- Apps on mobile devices and patient portals – allow patients and caregivers to report changes in health conditions or functional status in a timely manner

### Opportunities for Other IT Solutions

- Enable efficiencies by sharing data and information via HIEs and using physician portals
- Patients and caregivers are most underutilized resource in health care [Slack 1997](#)
  - Focus on consumer-facing health IT solutions (e.g. telemedicine and patient portals)
  - Patients and caregivers were willing and eager to use IT

### Overarching Recommendations

- Evaluate how health IT responds to information needs
- Awareness training on importance of information needs
- Focus on health IT interoperability and exchange of relevant information
- Improve usability and point-of-care documentation
- Adopt health IT that supports evidence-based interventions
- Engage patients and caregivers digitally

### Study Limitations

- Qualitative nature of study
  - Aim was to obtain rich and contextual information
- A case-study at one HHA
  - Rich data gathered from multiple participants using different modes
- Difficult to recall participants without compensation
  - Only full-time clinicians participated
  - Some participated in more than one data collection step

## Conclusions

- HHAs can use this evidence to ensure that their clinicians' fall-risk information needs are addressed by:
  - improving their workflows and currently adopted health IT solutions for better coordinated care
- Findings can be useful to health IT vendors to understand the exchange and integration needs for fall-risk management in home care

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