Hazards & Information Chaos in the Primary Care of the Elderly

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Proactive Risk Assessment of Primary Care of the Elderly

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Relevance: Primary Care

- Wide-reaching
  - Greatest share of health care interactions in the United States
  - 58% of patient visits (576 million)
- Inherently complex due to the 4 essential characteristics of Primary Care:
  - First contact
  - Longitudinal
  - Comprehensive
  - Coordinated

Hsiao, Cherry, Beatty, & Rechtsteiner, 2010; Beasley et al., 1983; Starfield, 1993

Relevance: Elderly Patients

- Have higher rates of:
  - Doctor visits
  - Medication use
  - Activity, visual, hearing & memory limitations
  - Chronic conditions
- Present more often, with more problems
  - Higher complexity, number of decisions, potential for error
- **Thus, increased likelihood of hazards being present at during primary care visits**

Hsiao et al., 2010
Huang et al., 2002
Pleis, Lucas, & Ward, 2009
Goulding, 2004
Tierney, 2003
Beasley et al., 2004
Gurwitz et al., 2003
NCHS, 2011

What is a Hazard?

- A safety term that that is analogous to “risk factor” in health care or epidemiology
  - Do not necessarily lead to errors or harm, but they increase the risk of them
  - Some hazards increase the risk of errors, and errors themselves may be hazards for patient harm.
- When analyzing errors, these are the “causes”

Why study hazards?

- Much of the attention in patient safety is focused on errors and harm
- The heart of safety lies in hazard identification and correction
  - By correcting the hazards we can decrease unwanted outcomes: errors, patient and clinician harm

Proactive Risk Assessment of Primary Care of the Elderly

- Multiple methods of hazard identification:
  - Secure online hazard reports from physicians
  - Observations of patient-physician care episodes
  - Physician focus groups
  - **Patient focus groups**

Relevance: Patient's Perspective

- Could hazards present or be perceived differently?

"One of the most remarkable features of the patient safety movement is the lack of attention paid to the patient's perspective."

- Koutantji et al. 2005, p.99

- Research Question:

What safety hazards exist in the primary care of the elderly, from the perspective of the elderly patients themselves?

Methods: Patient Recruitment

- 15 Primary Care Clinics recruited from the Wisconsin Research and Education Network (WREN)
  - One physician per clinic involved in the study
- Study started with observations elderly primary care visits
  - Clinic staff identified and recommended potential elderly patient focus group subjects with upcoming appts

Methods: Patient Recruitment

- Physician mailed letter to subjects: introduction, physician support, invitation
- Researcher met with subjects before their visit: research summary, answer questions, obtain consent
- 18 subjects consented, visit observed from arrival until departure
  - 14 of 18 subjects participated in focus groups

Focus Group Question Development

- Used observation data to develop a list of tasks and subtasks completed by the patient and physician
- Total of 70 hours of observations of 50 patient-physician visits across the 14 clinics
- Resulting task list had 32 major tasks & 683 detailed subtasks occurring at least once across all of the visits
  - E.g. Major task: review test results
  - Subtasks: locate test result, show results to pt, review values, explain values to pt , compare results to previous results, discuss options for correcting values, answer pt questions

Wetterneck et al, Development of a primary care physician task list to evaluate clinic visit workflow. BMJ Quality & Safety 2011

Focus Group Question Development

- Tasks informed development of focused questions
  - E.g. Task = Physical exam
  - Question = “What kinds of problems or difficulties might you have during the physical exam portion of the visit?”
- Subtasks functioned as detailed probes
  - E.g. Subtask = Getting on exam table
  - Question = “Did you have any problems getting up onto the exam table?”

Methods: Focus Group Procedure

- 3 different focus groups, with 4 – 6 patients each
  - Occurred during the Summer of 2008
- 60 minute sessions over the telephone with a weekly set meeting time
- 11 focus group sessions total
- Sessions were audio-recorded, transcribed & de-identified (281 pages of data)

Analysis: Data analysis

- Main Goal: Identify hazards to patient safety
- Hazard was defined as any thing that could either:
  1) Increase the risk of patient harm
  2) Increase the risk of quality problems, defined by IOM's six aims: (safe, effective, patient-centered, timely, efficient, to equitable care)

Institute of Medicine, 2001

Analysis: Coding Process

- General inductive thematic analysis approach
  - Multiple readings and interpretations of the raw data
  - Developed categories from the raw data from which to determine the key themes
  - Data were shaped by the assumptions & experiences of the coders & readers
    - Both engineers & physicians involved
  - Consensus reached through iterative process
- Hazards initially coded by one researcher in NVivo 9
- Re-read and verified by two additional researchers
- Themes developed in similar manner

Boyatzis, 1998; Patton, 2002

Results: 8 Hazard Themes

1) Fragmentation of care & problems with care coordination
2) Problems information transfer between healthcare professionals
3) Problems with patient communication & feedback
4) Problems with paper and electronic health records
5) Physical and memory limitations
6) Medication management and expense
7) Reliance on others
8) Delays and difficulties accessing care

1. Fragmentation of Care

- Characterized by the many healthcare clinicians & the many healthcare encounters elderly patients have
  - "Years ago, you used to go to the same doctor for everything. So makes it harder for me to get that in my head…"
- Specific hazards:
  - Patients not comfortable seeing the "covering doctor" or talking to the "covering nurse" and not comfortable with their recommendations
    - "it confuses everything"
  - Multiple doctors prescribing medications
    - Reliance on the pharmacist: consensus on dose changes, finding drug interactions

2. Information Transfer between HCP

- Information not transferred or lost
  - Visit details, Test results
  - Medication orders or changes
- Rely on patient for information transfer
  - Written or verbal instructions through patient to PCP or specialist
- Patient confidence about information transfer
  - “I don’t know how the specialist gets in touch with [the PCP], because like I said, I’m not knowledgeable about these computers, but anyways how she gets the information, she gets it somehow…”

3. Patient Communication & Feedback

- Poor communication between physician & Pt
  - Reason for the visit – two agendas, not known to both
  - Medication orders or changes
  - Reasons for lab/test orders, specialist consultation
- Breakdown in communication with the patient
  - Pharmacy did not contact patient about delayed medication
- Lack of feedback to the patient

  "I just had an echocardiogram done two weeks ago, and I was told that it would take a week and the doctor would get in touch with me, but I haven't heard anything, so I'm guessing that it was all right."

4. Patient Records: Paper and EHR

- Incomplete or scattered information
  - Multiple locations and systems
  - Limited or difficult access
- Lack of communication and integration between systems
  - Electronic vs. paper, scanned documents
- Patient confidence in electronic health records
  - Completeness, accuracy, accessability

Moderator: When you are telling the doctor or nurse about any outside care... at a specialist, or an emergency room, do you usually have to let them know that that happened, or do they usually know before you get there?

Subject 1: They know it better than I do.

Subject 2: Yeah, it's all in the computer.

5. Medication Management & Expense

- Difficulty keeping track of medications
  - What medications are for
  - Changes and reasons for changes to medications
- Insufficient medication information provided
  - Lack of indications on medication printouts
- Gaps in medication use due to
  - Waiting for mail order Rx
  - Expired prescriptions or changes – slow comm between doc & RPh
- Cost Concerns

6. Physical and Memory Limitations

- Physical limitations common
  - But also vision, hearing, balance; hard to fast for tests!
- Problems with reliance on patient's memory
  - Scheduling visits, refilling meds, getting labs, med list, passing information to other clinicians
- Memory limitations in general
  - Visit details
  - Physicians instructions – often only verbal
  - Own medical history
- "Well I just tell [the doc] he's going to have to check his records, because I don't remember when they were."

7. Reliance on Others

- Others help with:
  - Transportation to and from clinic
  - Asking questions during visit
  - Remembering visit details
  - Remembering physician instructions

- "Well, because I'm old, my children usually take me, and they come in with me and listen to what is happening..."

8. Delays & Difficulties Accessing Care

- Time delays and waiting
  - Phone, in waiting room and in exam room
  - But then it feels like things are rushed during visit…
- Availability and accessibility of care
  - Insurance limitations
  - Lack of after hours care, specialist visits

- "I live in a small town, and would have to go into [city] in order to have it …and their therapy for me, would be in the middle of my work day, and therefore I can't do it."

Limitations

- Small sample size: 14 subjects
- Convenience sample, no random selection
- Exploratory study, may not be generalizable

Rivera-Rodriguez & Karsh, 2010

Discussion

- Most findings align with existing patient safety literature
- Many of the themes are interconnected
  - Fragmentation of care
  - Information transfer between HCP
  - Patient records
- Interesting paradox:
  - While patients describe inaccurate & incomplete data in EHRs, they all put a lot of trust in & reliance on the completeness & accuracy of EHR data

Our Next Steps

- Plan to compare hazard data across physician & patient focus groups & observation data

Information Chaos

- The most common hazard identified across all of our data
- A theme that unites much of the hazard data

- Defined as information:
  - Scatter
  - Underload
  - Overload
  - Conflict
  - Erroneous

Information Chaos

- Hypothesize that information chaos impacts physician cognitive work during visit:
  - Increases mental workload
    - The amount of cognitive resources required for a task
  - Decreases situation awareness (SA)
    - A person's awareness and understanding of his/her task-related situation.
  - Poor SA further increases mental workload
  - High mental workload further decreases SA
- Ultimately impacts patient safety

Our Next Study

- A Human Factors Intervention to Reduce Risk in Primary Care of the Elderly
  - Ben-Tzion Karsh, PI; Wetterneck, temp PI
  - Funded by AHRQ, R18 HS017899
- Develop and test an intervention to improve information availability at elderly patient visits.
  - We hypothesize the intervention will:
    - Increase PCP SA before & during the visit
    - Decrease PCP mental workload during the visit

Thank you!

- Questions?

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