Emergency Clinicians’ Perceptions of Communication Tools to Establish the Mental Baseline of Older Adults: A Qualitative Study

Anita Chary 1, Christopher Joshi 2, Noelle Castilla-Ojo 3, Iliaana Santangelo 1, Kei Ouchi 4, Aanand D. Naik 6,7, Christopher R. Carpenter 8,9, Shan W. Liu 5,10, Maura Kennedy 1,10

1. Emergency Medicine, Massachusetts General Hospital, Boston, USA 2. Medicine, University of Texas Southwestern Medical Center, Dallas, USA 3. Graduate Education, Harvard Medical School, Boston, USA 4. Emergency Medicine, Brigham and Women’s Hospital, Boston, USA 5. Psychosocial Oncology and Palliative Care, Dana-Farber Cancer Institute, Boston, USA 6. Houston Center for Innovations in Quality, Effectiveness and Safety, Michael E. DeBakey Veterans Affairs (VA) Medical Center, Houston, USA 7. Internal Medicine, Baylor College of Medicine, Houston, USA 8. Emergency Medicine, Barnes Jewish Hospital, St. Louis, USA 9. Emergency Care, Washington University School of Medicine, St. Louis, USA 10. Emergency Medicine, Harvard Medical School, Boston, USA

Corresponding author: Anita Chary, anita.chary@gmail.com

Abstract

Background
Evaluating older adults with altered mental status in emergency settings can be challenging due to the inability to obtain a history from patients directly and limited collateral information about the change from a patient’s mental status baseline. Documents and videos establishing a patient’s mental baseline could represent useful communication tools to aid emergency clinicians.

Methods
Qualitative interviews conducted with 22 emergency clinicians (12 physicians and 10 advanced practice providers) identified methods they use to determine baseline mental status of older adults in the ED and the perceived utility of document- and video-based information about an older adult’s baseline mental status. Interview transcripts were coded for dominant themes using deductive and inductive approaches.

Results
Participants determine an older adult’s baseline mental status by obtaining information about the patient’s baseline cognition (memory and communication) and function (activities of daily living and mobility). The techniques they use include 1) reviewing the electronic medical record, 2) speaking with family members or caregivers by phone or in person, and 3) obtaining verbal or phone reports from emergency medical services personnel or health care providers from short- or long-term care facilities. The majority of participants thought that a document or video with information about a patient’s baseline mental status would be useful (n=15, 68%), qualifying that content ought to be brief, clearly dated, and periodically updated.

Conclusions
Documents or videos could assist emergency clinicians in establishing baseline cognitive function when evaluating geriatric patients and may have implications for improving the detection of delirium.

Introduction
Altered mental status accounts for approximately 25% of emergency department (ED) visits among older adults [1]. Clinicians use the broad term “altered mental status” to refer to changes in cognition, level of consciousness, and behavior, which may result from diagnoses such as delirium, mild cognitive impairment, and dementia [2-4]. Delirium, a syndrome of disturbance in consciousness and attention which may be provoked by acute illness, is undetected in at least two-thirds of ED cases [1,5,6]. When detected in the ED, delirium is associated with prolonged hospitalization, falls, and increased mortality [7-9]. Cognitive impairment, or difficulty with memory and executive functioning, is similarly underrecognized in EDs [1,10].

ED evaluation of older adults with altered mental status can be challenging, as emergency clinicians cannot always obtain an accurate history from patients themselves [7,11,12]. Information from family, caregivers, or residential care professionals about a patient’s baseline mental status and any changes from it (i.e., collateral information) is often missing or not readily available on presentation to the ED [13]. These challenges have been amplified by the COVID-19 pandemic with infection control measures of social
distancing and hospital visitor restrictions [14]. Lack of collateral information can lead to delays in establishing diagnoses and under-recognition of delirium [7], which itself can be a presenting feature of COVID-19 among older adults [15].

Communication tools, or instruments that convey information about patients and serve as adjuncts to history-taking and chart review, could improve clinical evaluation of patients who cannot provide their own history. As one example, the Alzheimer’s Society developed a written packet entitled “This is me” to characterize the baseline cognition and function of a person with dementia for healthcare providers and professional caregivers in home, hospital, and residential care settings [16]. As another example, video-based testimonials communicating older adults’ pre-recorded advanced care plans can help clinicians understand patients’ goals of care and clarify written advanced care planning documentation in times of serious illness [17,18]. Similar communication tools could be deployed to offer insights into an older adult’s baseline cognitive and functional status compared to ED presentation. To our knowledge, such tools do not exist for the purpose of establishing older adults’ baseline mental status. We conducted an exploratory qualitative study with emergency clinicians to assess the feasibility and inform the development of such document- and video-based communication tools, which could ultimately facilitate delirium recognition. Improving emergency clinicians’ ability to evaluate changes in mental status could increase detection of delirium, with potential downstream effects on preventing associated adverse outcomes, both of which are priority areas in geriatric emergency medicine [7,9,11].

Materials And Methods

We performed qualitative interviews with 12 emergency physicians and 10 advanced practice providers regarding the perceived utility of communication tools to demonstrate a patient’s baseline mental status. From February to May 2021, we recruited interview participants via emails to physician and APP list-servs of EDs of two urban academic hospitals and one affiliated community hospital in the United States Northeast.

A research assistant (IS) trained by an experienced qualitative investigator with doctoral training in anthropology (AC) obtained informed consent and conducted interviews over an online audio-visual platform. Interviews focused on clinicians’ experiences evaluating and obtaining collateral information about older adults with altered mental status, prior to and during the COVID-19 pandemic. The qualitative approach to interviewing was phenomenology, which seeks to characterize phenomena as experienced and lived by individuals within a situation. Participants were asked about: 1) the information they sought to determine a patient’s baseline mental status; 2) how useful they would find a document depicting a patient’s baseline mental status, with the interviewer screen sharing the “This is me” packet as an example [16]; and 3) how useful they would find a video depicting a patient’s baseline mental status and a neurological exam.

De-identified transcripts of audio recordings served as the basis for data analysis. A team of six researchers performed thematic analysis using both a deductive approach, in which codes are created based on interview questions, and an inductive approach, wherein themes emerge from data rather than a priori hypotheses. Specifically, the researchers reviewed the first seven transcripts for codes, or repeated patterns and meanings, developed a codebook, had two team members independently apply codes to each transcript, and had a third team member reconcile discrepancies in coding [19]. The researchers elucidated common themes for each code. No new themes arose after 18 interviews, which was confirmed with four additional interviews, indicating data saturation and adequate sample size [20], and study enrollment was concluded. This research was deemed exempt by the Partners Healthcare Institutional Review Board, Boston, MA (Protocol 2020P003925). The description of this investigation follows the Standards for Reporting Qualitative Research guidelines [21].

Results

Interviews lasted approximately 15 minutes. Participants included eight attending physicians, four resident physicians, eight physician assistants, and two nurse practitioners whose practice spanned two academic hospitals and one community hospital. Half practiced in an academic hospital and half practiced in both academic and community hospitals. Additional demographics are outlined in Table 1. Information about participants’ racial/ethnic identity, gender identity, and age is not reported to avoid the identification of participants. The number of years of emergency medicine clinical practice, rather than age, is reported as a reflection of clinical experience. Themes emerged regarding 1) prioritizing domains of cognition and function when establishing baseline mental status; 2) the perceived utility of a document or video in saving time and improving understanding of a patient’s baseline; and 3) key concerns and suggestions surrounding brevity and updating of information.
### TABLE 1: Demographics of Clinician Participants in a Qualitative Study of Emergency Clinicians’ Perceptions of Communication Tools to Establish the Mental Baseline of Older Adults

| Characteristic                                      | n (%) |
|-----------------------------------------------------|-------|
| **Practice Setting**                                |       |
| Academic                                            | 11 (50%) |
| Academic & Community                                | 11 (50%) |
| **Professional Role**                               |       |
| Attending Physician                                 | 8 (36%) |
| Resident Physician                                  | 4 (18%) |
| Physician Assistant                                 | 8 (36%) |
| Nurse Practitioner                                  | 2 (9%)  |
| **Years Practicing Emergency Medicine (Range)**     |       |
| Attending Physician                                 | 6 to 41 |
| Resident Physician                                  | 1 to 4  |
| Physician Assistant                                 | 2 to 17 |
| Nurse Practitioner                                  | 1 to 10 |

**Establishing baseline mental status**

Participants used multiple sources to obtain information about a patient’s baseline mental status, including the electronic medical record (EMR), remote or in-person conversations with family members and caregivers, reports from emergency medical services personnel, and for patients arriving from short- or long-term care facilities, transfer documentation or verbal reports by phone from referring health care providers. When asked what information they sought to determine an older adult’s baseline mental status, participants’ responses fell under four major categories related to both cognitive and functional status (Figure 1).

1) Communication: The patient’s usual method of communication (verbal, written, facial expressions) and types of information able to communicate (yes/no questions, simple sentences, conversations)

2) Memory: The patient’s short and long-term recall and presence of dementia

3) Activities of daily living (ADLs): The patient’s performance of specific ADLs (shopping, toileting/bathing, feeding) independently vs. with assistance

4) Mobility: The patient’s ability to ambulate and use assistive devices (cane, walker, wheelchair).
Perceived utility of a document

The majority of participants felt that a document with information about a patient’s baseline mental status would be useful (n=15, 68%). The "This is me" packet, which the interviewer shared with participants, contains three pages of written information organized into multiple sections [16]. The content that participants identified as most valuable for emergency clinicians were related to communication, memory, mobility, and ability to perform ADLs, reflecting the categories they prioritized when trying to obtain information about a patient’s mental status baseline. Participants felt that other information described in the "This is me" packet, such as cultural and religious affiliation, habits, triggers of anxiety, and calming measures would be more useful in the inpatient setting, though three participants voiced that such information could help with delirium prevention and management in the ED. Three participants also pointed out that as a whole, the document could help humanize an older adult by helping providers “better understand who they are as a person and as a patient” (Participant 117, attending physician). A minority of participants thought a document would not be useful (n=3, 14%), given emergency clinicians’ time constraints, with two reflecting that a document like “This is me” would be “too long to be useful in the ED” (Participant 119, attending physician). Others qualified that they would find a document useful (n=4, 18%) only if brief and inclusive of key information that could be rapidly reviewed.

Perceived utility of a video

Most participants expressed that they would find a video depicting a patient’s baseline mental status and neurological exam useful (n=15, 68%). Participants noted that EMRs did not always contain accurate or complete information about prior neurologic exams and that they could not rely on family members or caregivers to describe a patient’s prior neurologic exam. Some suggested that capturing baseline speech and mobility on video would allow for rapid and objective comparison to a current ED presentation. For example, as one participant stated: "To the extent that the medical records can’t be trusted, having an actual video recording of the patient would be certainly more reliable" (Participant 115, attending physician).

Some participants expressed uncertainty about whether they would find a video helpful (n=6, 27%), offering that the utility of the video would depend on whether included elements of the neurological exam were directly relevant to a patient’s current ED presentation. They also expressed that they would find the video useful only if they were not able to obtain collateral information from a family member. One APP participant would not find a video useful and thought similar information could be obtained from other sources (n=1, 5%).

Key suggestions

Regarding both document and video options, participants emphasized that either would need to be brief and highlight high-yield information, given emergency clinicians’ time constraints. Participants noted that a potential benefit of either tool was saving clinicians’ time by having key information collated in one place, rather than necessitating that they “dig through the chart” (Participant 107, attending physician). Some suggested incorporation of a document or video into the EMR as a key report, similar to an advanced care planning tab. Participants recommended that reports or videos ought to be clearly dated and that content be periodically updated, given that changes in cognition occur over time, particularly among older adults with dementia. Further illustrative quotes for all themes are provided in Table 2.
TABLE 2: Illustrative Quotations for Selected Themes in a Qualitative Study of Emergency Clinicians’ Perceptions of Communication Tools to Establish the Mental Baseline of Older Adults

**Discussion**

In this qualitative study, the majority of emergency clinicians viewed documents and videos depicting a patient’s baseline mental status as useful adjuncts in evaluating older adults with altered mental status. The development and use of document- or video-based communication tools could have important implications for improving the detection of delirium, which goes undetected in at least two-thirds of ED cases [7,9]. To our knowledge, pre-recorded video of a patient has not previously been used to help clinicians identify delirium or dementia; this novel and pioneering approach could be promising given the recent rapid expansion and increased acceptability of telemedicine and video-based care during the COVID-19 pandemic [22].

Participants’ emphasis on brevity as an essential feature of any communication tool reflects emergency clinicians’ time constraints and competing priorities when evaluating older adults [5,7,9]. In light of such
challenges, the Geriatric Emergency Applied Research Network recommends that delirium detection measures should ideally not create significant time demands for emergency clinicians and nurses [7]. ED staff can perceive even brief geriatric screening exams that take less than one minute to perform as time-consuming and cognitively burdensome [23]. An important goal of a document or video would be saving clinicians’ time by collating key information in one place, which could be facilitated through EMR report functions, topical tabs, or information “dashboards.” A report in the EMR including key information about a patient’s baseline mental and functional status could be designed, highlighting a patient’s communication, memory, mobility, and ADLs, as prioritized by our participants. The Institute for Healthcare Improvement suggests a similar approach to incorporating the “4 Ms” of geriatrics (mentation, medications, mobility, what matters) into an EMR dashboard [24], and this strategy has been used to support interdisciplinary care for hospitalized older adults [25]. As interviewees also recognized, emergency and admitting teams do not often accurately document mental and cognitive status over - 60% of the time, as one study found [26] - making chart review a potentially unreliable source of information [1,10]. EMR dashboards have previously been shown to improve the accuracy of information conveyed and reduce medical errors in care handoffs [27]. Clear and succinct information about mental and functional status, whether in video or document format, could potentially help clinicians interpret and clarify information from other sources. Prior studies have shown that video messages can help emergency physicians and emergency medical services personnel clarify content in living wills and Physician Order of Life-Sustaining Treatment forms [17,18].

If document- or video-based interventions are developed to improve mental status evaluations of patients in the ED and within health systems more broadly, two topics raised by study participants merit further consideration. First, prioritizing content, specifically the key elements of a neurological or mental status examination that affect clinicians’ decision-making, will be important. Expert working groups from national geriatric emergency medicine associations could help determine the utility of capturing tests of baseline attention, concentration, or a brief delirium triage screen on video. Special attention should be paid to the standardization of prioritized content, as variety in the structure of such tools could introduce cognitive biases that affect decision-making. Second, stakeholders including ED administrators, end-users, and information and technology services teams should inform the accessibility of document- or video-based tools. Incorporation of video or document adjuncts into the EMR could address participants’ suggestions that information must be clearly dated and updated to allow robust comparison with a patient’s ED presentation. End-users and geriatrics experts should be queried about ideal time points for updating communication tools, such as after a care transition and recovery following hospitalization. Given potential concerns over video storage and retrieval, a smartphone-accessible online platform represents an alternative feasible system [17,18,28]. One such system called My Informed Decision on Video (MIDEO), designed to communicate older adults’ advanced care planning wishes, utilizes identification cards with QR codes allowing video retrieval in 10 seconds or less [28]. As MIDEO is external to the EMR, it is accessible across health systems and EMRs, and patients and caregivers can update video messages as their care priorities change [28]. Overall, future work should focus on how to make communication tools standardized, consistent, up to date, and relevant to ED clinical decision-making. Additional considerations which did not emerge from this study, but are nonetheless important, include but are not limited to patient consent and involvement in the generation of materials.

Limitations
This study relied on a convenience sample of volunteer participants from two urban academic hospitals and one academic-affiliated community hospital in the Northeast. Interviewees may have had a special interest in this topic and may not be representative of emergency clinicians within their institutions. Findings may not capture perspectives of emergency clinicians in rural community settings or other regions of the United States. We performed our study during the COVID-19 pandemic, and increased challenges in evaluating older adults during this time could have affected participants’ interest in and perceived utility of communication tools. Additionally, while the strength of qualitative research is eliciting participants’ perceptions and values about a topic, a larger-scale survey could provide information about the broader acceptability of communication tools and represents an important direction for future research. This study focused on emergency clinicians’ perceptions of novel communication tools that have not been validated in clinical settings. Additionally, the proposed tools would require health system resources for generation, updating, and maintenance involving multiple other stakeholders such as primary care clinicians and information technologists, whose perspectives were not sought for this study and represent an area of future inquiry.

Conclusions
Evaluating older adults with changes in mental status in the ED poses challenges to clinicians, who must obtain collateral information from various sources to establish a patient’s mental baseline and understand deviation from it. In our study, the majority of emergency clinicians interviewed perceived utility in a document or video depicting an older adult’s baseline mental status. Such adjuncts could improve emergency clinicians’ evaluations of geriatric patients while potentially enhancing their ability to detect delirium.

Additional Information
Disclosures

Human subjects: Consent was obtained or waived by all participants in this study. Partners Healthcare Institutional Review Board issued approval 2020P003925. This research was deemed exempt by the Partners Healthcare Institutional Review Board, Boston, MA (Protocol 2020P003925). Animal subjects: All authors have confirmed that this study did not involve animal subjects or tissue. Conflicts of interest: In compliance with the ICMJE uniform disclosure form, all authors declare the following: Payment/services info: ANC received funding support for this project from the Academy of Geriatric Emergency Medicine, Society of Academic Emergency Medicine. Financial relationships: All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. Other relationships: ANC and ADN receive support from the Houston Veterans Administration Health Services Research and Development Center for Innovations in Quality, Effectiveness, and Safety (CIN13-413). CRC serves on the Society for Academic Emergency Medicine Board of Directors, the American College of Physicians (ACEP) Geriatric Emergency Department Accreditation (GEDA) Advisory Panel, the Geriatric Emergency Applied Research Network 2.0-Alzheimer’s Dementia Research Core, and the Clin-STAR leadership core. SL serves on the ACEP Geriatric Emergency Medical Services Executive Board, is a reviewer for GEDA and an Executive Member of the IFEM Geriatric Emergency Medicine Special Interest Group, and was past-president of the Academy of Geriatric Emergency Medicine. MK serves on the ACEP GEDA Board of Governors. Otherwise, the authors declare no conflicts of interest.

References

1. Husty FM, Meldon SW: The prevalence and documentation of impaired mental status in elderly emergency department patients. Ann Emerg Med. 2002, 39:248-53. 10.1067/mem.2002.122057
2. Han JH, Wilber ST: Altered mental status in older patients in the emergency department. Clin Geriatr Med. 2013, 29:101-16. 10.1016/j.cger.2012.09.005
3. Wilber ST: Altered mental status in older emergency department patients. Emerg Med Clin North Am. 2006, 24:299-316, vi. 10.1016/j.emc.2006.01.011
4. Wilber ST, Ondrejka JE: Altered mental status and delirium. Emerg Med Clin North Am. 2016, 34:649-65. 10.1016/j.emc.2016.04.012
5. Élie M, Rousseau F, Cole M, Primeau F, McCusker J, Bellavance F: Prevalence and detection of delirium in elderly emergency department patients. Canadian Medical Association Journal. 2000, 165:977-81.
6. Han JH, Zimmerman EE, Cutler N, et al.: Delirium in older emergency department patients: recognition, risk factors, and psychomotor subtypes. Acad Emerg Med. 2009, 16:193-200. 10.1111/j.1553-2712.2008.00359.x
7. Carpenter CR, Hammouda N, Linton EA, et al.: Delirium prevention, detection, and treatment in emergency medicine settings: a geriatric emergency care applied research (GEAR) network scoping review and consensus statement. Acad Emerg Med. 2021, 28:19-35. 10.1111/ace.14166
8. Kakuma R, du Fort GG, Arensault L, et al.: Delirium in older emergency department patients discharged home: effect on survival. J Am Geriatr Soc. 2003, 51:445-50. 10.1046/j.1532-5415.2003.31151.x
9. Kennedy M, Webb M, Kartaganis S, et al.: ED-DEL: development of a change package and toolkit for delirium in the emergency department. J Am Coll Emerg Physicians Open. 2021, 2:e12421. 10.1002/empl.2012421
10. Carpenter CR, DesPain B, Keeling TN, Shah M, Rothenberger M: The six-item screener and ADB for the detection of cognitive impairment in geriatric emergency department patients. Ann Emerg Med. 2011, 57:653-61. 10.1016/j.annemergmed.2010.06.360
11. Shenoi C, Kennedy M, Austin CA, Wilson MP, Gerardi M, Schneider S: Managing delirium and agitation in the older emergency department patient: The ADEPT tool. Ann Emerg Med. 2020, 75:136-45. 10.1016/j.annemergmed.2019.07.023
12. Han JH, Bryce SN, Ely EW, et al.: The effect of cognitive impairment on the accuracy of the presenting complaint and discharge instruction comprehension in older emergency department patients. Ann Emerg Med. 2011, 57:662-71.e2. 10.1016/j.annemergmed.2010.12.002
13. Dyer AH, Nabeel S, Briggs R, O’Neill D, Kenny SP: Cognitive assessment of older adults at the acute care interface: the informant history. Postgrad Med J. 2016, 92:255-9. 10.1136/postgradmedj-2015-133568
14. Sahib A, Perry A, Weeks R, Malone L: Care of older adults in rural emergency departments during the COVID-19 pandemic. J Geriatric Emerg Med. 2020, 2:1-4.
15. Kennedy M, Helfand BK, Gou RY, et al.: Delirium in older patients with COVID-19 presenting to the emergency department. JAMA Netw Open. 2020, 3:e2029540. 10.1001/jamanetworkopen.2020.29540
16. Alzheimer’s Society United Against Dementia, "This is me". (2020. Accessed: November 6, 2020; https://www.alzheimers.org.uk/sites/default/files/2020-05/this_is_me_1553.pdf.
17. Mirarchi FL, Cooney TE, Venkat A, et al.: TRIAD VIII: nationwide multicenter evaluation to determine whether patient video testimonials can safely help ensure appropriate critical versus end-of-life care. J Patient Saf. 2017, 13:51-61. 10.1097/PTS.0000000000001057
18. Mirarchi F, Cammarata C, Cooney TE, Juhasz K, Terman SA: TRIAD IX: can a patient testimonial safely help ensure prehospital appropriate critical versus end-of-life care? J Patient Saf. 2021, 17:48-66. 10.1097/PTS.0000000000001387
19. Kiger ME, Varpio L: Thematic analysis of qualitative data: AMEE Guide No. 151. Med Teach. 2020, 42:846-54. 10.1080/0142159X.2020.1755020
20. Guest G, Namey E, Chen M: A simple method to assess and report thematic saturation in qualitative research. PLoS One. 2020, 15:e0232076. 10.1371/journal.pone.0232076
21. O’Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA: Standards for reporting qualitative research: a synthesis of recommendations. Acad Med. 2014, 89:1245-51. 10.1097/ACM.0000000000000388
22. Centers for Medicare & Medicaid Services, "Medicare Telemedicine Health Care Provider Fact Sheet". 10.7759/cureus.20616
23. Elder NM, Bambach KS, Gregory ME, Gulker P, Southerland LT: Are geriatric screening tools too time consuming for the emergency department? A workflow time study. J Geriatric Emerg Med. 2021, 2:1-5.

24. Age-Friendly Health Systems: Guide to Electronic Health Record Requirements for Adoption of the 4Ms. (2019). Accessed: June 15, 2021: http://www.ihi.org/Engage/Initiatives/Age-Friendly-Health-Systems/Documents/IHI_Age_Friendly_Health_Systems_EPIC_Impl...

25. Schlientz DM, Wong S, Previll L, White H, Pavon J: Implementing plan-do-study-act to optimize access to inpatient electronic geriatrics patient health data. J Am Geriatrics Soc. 2020, 68:S133.

26. Heidt JW, Carpenter CR: 259: occult cognitive impairment in admitted older emergency department patients is not identified by admitting services. Annals Emerg Med. 2009, 54:S81-2. 10.1016/j.annemergmed.2009.06.289

27. Wu DT, Deoghare S, Shan Z, Meganathan K, Blondon K: The potential role of dashboard use and navigation in reducing medical errors of an electronic health record system: a mixed-method simulation handoff study. Health Syst (Basingstoke). 2019, 8:203-14. 10.1080/20476965.2019.1620657

28. MIDEO [My Informed Decision on Video], "MIDEO Card - Video Health Care Directives". (2021). Accessed: May 30, 2021: https://mideocard.com.