EMERGENCY DEPARTMENT INTERVENTIONS FOR OLDER ADULTS: A Systematic Review

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Full-length report available on ESP website:
http://www.hsrd.research.va.gov/publications/esp/reports.cfm

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VA Evidence-based Synthesis Program (ESP)

- Funded by QUERI and established in 2009, Durham is one of four VA ESP centers nationwide

- MISSION: To support policy and clinical decisions for VA stakeholders through high value evidence synthesis
  - Products are tailored to stakeholders’ needs and may include rigorous systematic review, evidence brief, review of reviews, or evidence map
  - All reports include a “Future Research” section that identifies gaps in the existing literature and offers potential recommendations

- Reports are disseminated through multiple avenues and have supported numerous VA clinical and policy decisions
Background

- Older adults, those aged 75 years and over, visit the Emergency Department (ED) at nearly twice the rate of younger adults.

- Within the Veterans Health Administration (VHA), older adults account for roughly 45% of the 2.4 million annual ED visits.

- Care received within the ED may be compromised by a range of challenges:
  - **Individual**: Multi-morbidity, polypharmacy, atypical symptoms, impaired cognition and/or function, reduced social support.
  - **Staffing**: Poor knowledge of geriatric population and/or clinical procedures.
  - **Physical environment**: Rush, hurried pace of ED may be difficult for older patients to navigate.

References:
Background

- Poor and/or uncoordinated care received in the ED is associated with adverse outcomes
  - Older adults, including those aged 75 years and older, are three times as likely to be admitted to the hospital from the ED

- Prior research has evaluated the effect of various interventions on patient and utilization outcomes
  - Care delivery, case management, transitional care and discharge planning

- In recent years, there has been growing attention to systems-level changes, as demonstrated by the focus on Geriatric Emergency Departments and the 2014 Geriatric ED Guidelines

Rationale for Review

• Commissioned by VHA Office of Emergency Medicine and Geriatrics and Extended Care Operations

• Purpose: to identify and evaluate intervention strategies that could be implemented across 141 VA Emergency Departments (EDs) and Urgent Care Centers

• Address gaps in literature:
  — Prior reviews focused on single-strategy interventions; effect of multi-strategy interventions unclear
  — No research has identified individual intervention components
  — Clinical outcomes, including functional status and quality-of-life have typically been overlooked
How effective are Emergency Department health system interventions in improving clinical, patient experience, and utilization outcomes in older adults (age ≥ 65)?
Older Adults Presenting to Emergency Department

Emergency Department Intervention Strategies
- Discharge Planning
- Medication Safety
- Case Management
- Geri ED Guidelines

Patient-Focused Intervention Components
- Assessment and/or Screening
- Education and/or Support
- Intervention: Medication or Rehabilitation

Clinical Outcomes
- HRQOL
- Functional Status
- Patient Experience
- Other

Utilization Outcomes
- Hospitalization
- ED Readmission
- Length of Stay

Provider or Systems-Focused Intervention Components
- Referral to Primary Care Provider or Specialist
- Referral to Community-Based Services
- Planned Follow-Up Visit or Communication
- Continuity of Care/Care Coordination
- Change(s) to ED Environment and/or Procedures

Provider or Systems-Level Modifiers
- (eg, Provider training, provider knowledge, beliefs, and attitudes, practice environment)

Socialdemographic Factors
- Current residence
- Social Support
- Financial Security
- Insurance Status

Clinical Characteristics
- Medical
- Complexity
- Functional Status

Individual Characteristics
- Personal Preferences
- Prior Experience

Access to Services
- Primary Care
- PCMH
- Urgent Care
- Specialty Care
- Telehealth

Patient-Level Modifiers
- (eg, Health Literacy, Financial Security, Social Support, Functional and Cognitive Health)
Standard Systematic Review Methods

**Literature search & study selection**
- Search databases: PubMed, Embase, CINAHL, Cochrane
- Pre-specified eligibility criteria, determined in collaboration with stakeholders and technical experts
- Identify eligible studies

**Data abstraction & quality**
- Abstracted data elements
- Rated study quality
- Data described and synthesized qualitatively
- Meta-analysis where feasible; sensitivity analyses
- Strength of evidence
# Eligibility Criteria

**POPULATION**  
Adults aged 65 or older who present to ED for acute, urgent or emergency care to address general illness or concern (condition-specific studies excluded)

**COMPARATORS**  
Usual or enhanced ED care

**TIMING**  
30 to 90 days

**SETTING**  
Emergency Department

**STUDY DESIGN**  
Randomized Controlled Trials  
Quasi-experimental studies

**Other**  
English language, 1990 forwards
## Intervention Strategies

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharge planning</td>
<td>Discharge planning is time-limited, taking place fully within the ED, and encompassing the process of thinking about and formalizing a plan of care prior to a patient’s discharge from the ED</td>
</tr>
<tr>
<td>Case management</td>
<td>Case management takes place over time and across settings, initially beginning within the ED and continuing after discharge, and includes the activities that a physician or other health care professional performs to ensure coordination of medical services needed by the patient</td>
</tr>
<tr>
<td>Medication safety/ Medication management</td>
<td>Interventions that assist patients or caregivers in managing and monitoring drug therapy for older adults with chronic conditions</td>
</tr>
<tr>
<td>Geriatric Emergency Department</td>
<td>EDs designed or guided by the 2014 Geriatric ED Guidelines</td>
</tr>
</tbody>
</table>

*MULTI-STRATEGY=* studies that employed two or more intervention strategies
# PATIENT-FOCUSED INTERVENTION COMPONENTS

*Information is collected from or provided to the patient or caregiver*

## Assessment and screening

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geriatric assessment</td>
<td>A multidimensional interdisciplinary evaluation to ensure that problems are identified, quantified, and managed appropriately. Common elements include assessment of medical, psychological, biosocial, functional, cognitive, and environmental capacity. Results from the assessment may be used to inform other elements of discharge planning.</td>
</tr>
<tr>
<td>High-risk screening</td>
<td>Use of 1 or more risk-screening tool(s) to evaluate a specific risk factor, condition, or potential outcome. Risk screening tools are typically brief and shorter in nature than a comprehensive, multidimensional assessment.</td>
</tr>
</tbody>
</table>

## Patient and/or caregiver education or support

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient education</td>
<td>Key information provided in writing or explained to patient and/or caregiver. The information provided is related to diagnosis or treatment but does not encourage specific behavior change.</td>
</tr>
<tr>
<td>Self-management</td>
<td>Patient-directed education or coaching that focuses on enhancing the patient's ability to self-manage care needs. This may include education or coaching around specific behavior(s) (e.g., weight control action plan) and/or disease specific information (e.g., congestive heart failure action plan).</td>
</tr>
<tr>
<td>Caregiver education</td>
<td>Education directed toward the caregiver, which may include any of the following: basic disease education, behavior management strategies, guidance on how to support the patient in self-care, or information on how to provide direct care, including information related to condition, symptoms, treatment, or medication management.</td>
</tr>
<tr>
<td>Caregiver support</td>
<td>Supportive counseling or guidance focused on self-care, coping skills to manage caregiver burden and expectations, tips on identifying local resources, communication skills, etc.</td>
</tr>
<tr>
<td>Shared decision-making</td>
<td>Decision-making around testing, treatment, and/or discharge are shared between different individuals, potentially including the patient and/or caregiver. May include use of a decision aid.</td>
</tr>
</tbody>
</table>

## Intervention

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medication intervention</td>
<td>Medication reconciliation or special education aimed at improving medication understanding or adherence.</td>
</tr>
<tr>
<td>Rehabilitation intervention</td>
<td>Patient receives occupational and/or physical therapy aimed at improving functional status.</td>
</tr>
<tr>
<td>Telemonitoring</td>
<td>Use of remote technology designed for the patient to transmit objective measures of health status with or without connected subjective assessment (e.g., health buddy).</td>
</tr>
</tbody>
</table>
### Provider and/or System-Focused Intervention Components

#### Follow-up call or visit
- **Patient hotline and/or patient-initiated appointment systems**: An open line for patient-initiated communication. Systems that enable patients to make urgent appointments when they feel they cannot manage their condition or where something has changed unexpectedly.
- **Follow-up visit scheduled**: A follow-up visit is scheduled prior to discharge from ED and/or prior to the end of the intervention period.
- **Follow-up communication**: ED provider or intervention staff initiate telephone follow-up communication after discharge from the ED.
- **Follow-up visit completed**: In-person follow-up visit completed during the course of the intervention period.
- **Home visit**: In-person visit to patient’s place of residence by 1 or more intervention providers.

#### Referral to services
- **Referral(s) to primary care**: ED provider initiates and/or recommends referral to primary care.
- **Referral(s) to medical specialist(s)**: ED provider initiatives and/or recommends referral to medical specialist(s).
- **Referral(s) to home or community-based services**: ED provider initiates and/or recommends referral to 1 or more home or community-based services. Examples include physical/occupational therapy, meal delivery, home-based primary care, or adult day health care.

#### Continuity of care/care coordination
- **Communication between providers ("clinician continuity")**: Processes that ensure the responsibility of care is passed from 1 provider to another. This may include increased provider presence before and after ED discharge, verbal or written communication between providers, strategic follow-up with primary clinician after discharge, or the involvement of a “bridging” clinician.
  - Increased provider presence before and after ED discharge; may include involvement of PCP in patient care or strategic follow-up with inpatient clinician after discharge or “bridging” clinician.
- **Interdisciplinary care team meeting**: Team meeting as part of discharge planning or ongoing case management.
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Staffing/administration</strong></td>
<td>Presence of Geriatric Emergency Department Medical Director or Nurse Manager.</td>
</tr>
<tr>
<td><strong>Follow-up and transition of care</strong></td>
<td>Detailed procedures on how to provide age-friendly discharge planning within ED and appropriate referrals to post-ED services in the community.</td>
</tr>
<tr>
<td><strong>Provider education</strong></td>
<td>A formal, competency-based educational program designed to educate staff on the needs of older adults.</td>
</tr>
<tr>
<td><strong>Quality improvement</strong></td>
<td>Implementation of a formal quality improvement (QI) program designed to collect and monitor data related to program success.</td>
</tr>
<tr>
<td><strong>Equipment and supplies</strong></td>
<td>Structural and/or physical modifications to best support unique functional, clinical, and behavioral needs of older adults.</td>
</tr>
</tbody>
</table>
### Key Intervention Components

<table>
<thead>
<tr>
<th>Component</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment</td>
<td>A structured assessment may include a comprehensive geriatric assessment or biopsychosocial assessment covering multiple domains (e.g., cognitive performance, functional status, social status)</td>
</tr>
<tr>
<td>Referral plus follow-up</td>
<td>Referral to one or more of the following: primary care provider, specialty provider, or community resource or services <em>plus</em> planned communication or visit(s) with intent of following up on referral.</td>
</tr>
<tr>
<td>Bridge</td>
<td>An intervention that takes place across settings, including one or more planned contacts <em>before</em> discharge from the ED <em>and</em> again <em>after</em> discharge.</td>
</tr>
</tbody>
</table>

**COMPREHENSIVE INTERVENTIONS** = *studies that employed all three key intervention components*
<table>
<thead>
<tr>
<th>Clinical</th>
<th>Patient Experience</th>
<th>Utilization</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Functional status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Quality-of-life</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Mortality</td>
<td>• Patient experience</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Hospitalization at the ED index visit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Hospitalization after ED discharge</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Return/Repeat ED visit</td>
<td></td>
</tr>
</tbody>
</table>
Literature Flow

Search results for title and abstract screening: 1,878 references*

Retrieved for full-text review: 100 references

Included studies: 17 references reporting 15 unique studies

Excluded = 83 references
- Not full publication: 26
- Not eligible country: 5
- Not population of interest: 8
- Not eligible setting: 8
- Not eligible intervention: 10
- Not eligible design: 22
- Not eligible outcome: 4

* Unique citations after combining all searches and manual bibliography review
Description of the Literature

• 15 studies (9 randomized; 6 nonrandomized)

• Studies recruited broad patient populations (n>16,000)
  – One-half of studies recruited high-risk populations, as determined either by a risk assessment tool or clinical criteria (eg, dependent in one or more ADLs)

• Intervention staff varied
  – Number of staff members ranged from 1 to 4
  – Disciplines: physician, nurses, social workers or case managers, physical therapists, occupational therapists
  – Eight studies utilized a geriatrician, geriatric nurse provider, or other provider with geriatrics training

• Gaps in the literature
  – No studies specified enrollment of Veterans
  – No studies evaluating a Geriatric Emergency Department (ED) or interventions based on the 2014 Geriatric ED Guidelines
### Evidence Profile

<table>
<thead>
<tr>
<th></th>
<th>Studies n= 15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median patient age</td>
<td>79 (Range: 74-86)</td>
</tr>
<tr>
<td>Patient sex</td>
<td>59% women</td>
</tr>
<tr>
<td>Race</td>
<td>66% White</td>
</tr>
<tr>
<td>Patients with cognitive impairment</td>
<td>12.25%</td>
</tr>
<tr>
<td>Living status</td>
<td>24% living alone</td>
</tr>
</tbody>
</table>

(11 studies NR)  
(10 studies NR)  
(6 studies NR)
# Frequency of Intervention Strategies and Key Intervention Components

## Strategies

<table>
<thead>
<tr>
<th></th>
<th>Randomized Studies (N=9)</th>
<th>Non-Randomized Studies (N=6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharge planning</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Case Management</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Medication Safety/Management</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Geriatric Emergency Department</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Multi-Strategy</td>
<td>5</td>
<td>2</td>
</tr>
</tbody>
</table>

## Key Components

<table>
<thead>
<tr>
<th></th>
<th>Randomized Studies (N=9)</th>
<th>Non-Randomized Studies (N=6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Referral plus follow-up</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Bridge design</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>All three key components included</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>
Outcomes Reported

- Hospitalization at index
- Hospitalization after DC
- ED return
- Quality of life
- Patient experience
- Mortality
- Functional status

Randomized vs. Non-Randomized
Results: Clinical Outcomes

**Functional Status**

- 6 studies (5 randomized) evaluated the effect of ED interventions on functional status
  - Primary outcome in 5 studies
  - A variety of outcome measures were used; all focused on ADLs/IADLs

- Study Characteristics:
  - 3 multi-strategy interventions
  - 2 studies included all three intervention components

- Overall, ED interventions were associated with less decline in functional ability
### Results: Clinical Outcomes

**Mortality**

- 6 studies (3 randomized) evaluated the effect of ED interventions on mortality
  - Primary outcome in 3 nonrandomized studies; no randomized studies included mortality as a primary outcome
  - Information collected from Electronic Health Record (EHR)

- Study Characteristics:
  - 4 studies evaluated multi-strategy interventions
  - 2 studies included all three key intervention components

- Overall, there was no effect of ED interventions on mortality. However, no studies had a large number of events (deaths).

<table>
<thead>
<tr>
<th>Study</th>
<th>Randomized</th>
<th>Strategy</th>
<th>Components</th>
<th>ED Events</th>
<th>Control Events</th>
<th>N</th>
<th>Relative Risk [95% CI]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caplan 2004</td>
<td>Yes</td>
<td>Case manage</td>
<td></td>
<td>3 55 370 53</td>
<td>369</td>
<td></td>
<td>1.03 [0.73, 1.47]</td>
</tr>
<tr>
<td>Mion 2003</td>
<td>Yes</td>
<td>Multi</td>
<td></td>
<td>3 4 326 2 324</td>
<td></td>
<td></td>
<td>1.99 [0.37, 10.78]</td>
</tr>
<tr>
<td>Biese 2017</td>
<td>Yes</td>
<td>Multi</td>
<td></td>
<td>0 0 974 5 975</td>
<td></td>
<td></td>
<td>0.09 [0.01, 1.64]</td>
</tr>
<tr>
<td>Pedersen 2016</td>
<td>No</td>
<td>Case manage</td>
<td></td>
<td>2 84 693 99 657</td>
<td></td>
<td>0.86 [0.65, 1.13]</td>
<td></td>
</tr>
<tr>
<td>Arendts 2013</td>
<td>No</td>
<td>DC planning</td>
<td></td>
<td>1 15 1098 14 1098</td>
<td></td>
<td>1.07 [0.62, 2.21]</td>
<td></td>
</tr>
<tr>
<td>Miller 1996</td>
<td>No</td>
<td>Multi</td>
<td></td>
<td>2 33 356 32 331</td>
<td></td>
<td></td>
<td>0.99 [0.60, 1.52]</td>
</tr>
</tbody>
</table>
Results: Clinical Outcomes

Quality-of-Life

- 3 studies (2 randomized) evaluated the effect of ED interventions on quality-of-life (QOL)
  - Primary outcome in 2 studies
  - Measures included SF-36 and a single item from a validated scale

- Study Characteristics:
  - 2 studies evaluated multi-strategy interventions
  - Both multi-strategy studies included all three key intervention components

- There were no statistically significant effects on physical or mental health-related QOL. However; results favored the intervention.
Results: Patient Experience

- 5 studies (4 randomized) evaluated the effect of ED interventions on patient experience
  - No studies included patient experience as a primary outcome
  - Variety of measures used, including Client Satisfaction Questionnaire and Satisfaction with Care Scale

- Study Characteristics:
  - 2 studies evaluated multi-strategy interventions
  - 1 study included all three key intervention components

- 2 of the 5 studies reported higher satisfaction with care or greater knowledge of community resources after ED discharge
Results: Utilization Outcomes

Hospitalization at ED Index Visit

• 4 studies (2 randomized) evaluated the effect of ED interventions on hospitalization at index ED visit
  • Primary outcome for 3 studies
  • Prospective report of hospitalization- yes/no

• Study Characteristics:
  • 2 studies evaluated multi-strategy interventions
  • 1 study included all three key intervention components

• No effect on hospitalization at the ED index visit
Results: Utilization Outcomes

Hospitalization after the ED Index Visit

- 8 studies (5 randomized) evaluated the effect of ED interventions on hospitalization after the index ED visit
  - Patient report, confirmed via electronic health record (timepoints: 30 days to 18 months)

- Study Characteristics:
  - 5 studies evaluated multi-strategy interventions
  - 3 studies (all randomized) included all three key intervention components

- Overall, no intervention effect

<table>
<thead>
<tr>
<th>Study</th>
<th>Randomized</th>
<th>Strategy</th>
<th>Components</th>
<th>ED Strategy Events</th>
<th>Control Events</th>
<th>Relative Risk (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caplan 2004</td>
<td>Yes</td>
<td>Case manage</td>
<td>3</td>
<td>370</td>
<td>92</td>
<td>0.74 [0.55, 1.00]</td>
</tr>
<tr>
<td>Melin 2003</td>
<td>Yes</td>
<td>Multi</td>
<td>3</td>
<td>324</td>
<td>324</td>
<td>0.85 [0.68, 1.08]</td>
</tr>
<tr>
<td>Biste 2017</td>
<td>Yes</td>
<td>Multi</td>
<td>0</td>
<td>974</td>
<td>975</td>
<td>1.22 [0.91, 1.65]</td>
</tr>
<tr>
<td>Summary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.96 [0.91, 1.03]</td>
</tr>
</tbody>
</table>

Pedersen 2016  | No        | Case manage | 2          | 693               | 657             | 0.84 [0.70, 0.99]       |
Arends 2013    | No        | DC planning | 1          | 1028              | 1008            | 1.47 [1.31, 1.64]       |
Bond 2014      | No        | Multi      | 1          | 910               | 910             | 0.67 [0.51, 0.88]       |

Relative Risk: 0.30 1.00 1.50 2.50
Results: Utilization Outcomes

Repeat Visit to ED

- 12 studies (7 randomized) evaluated the effect of ED interventions on repeat ED visits
  - Primary outcome in only 2 studies
  - Mix of patient reported and electronic health record data collection

- Study Characteristics:
  - 6 studies evaluated multi-strategy interventions
  - 4 (3 randomized) studies included all three key intervention components

- No overall intervention effect
## Strength of Evidence

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Studies</th>
<th>Findings</th>
<th>Strength of Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED readmission</td>
<td>Randomized: 7</td>
<td>Relative risk 1.13 (0.94 to 1.36) (9 fewer to 53 more per 1,000)</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Nonrandomized: 5</td>
<td>2 of 5 showed lower readmission; beneficial interventions were multi-strategy or case management</td>
<td></td>
</tr>
<tr>
<td>Hospitalization after index</td>
<td>Randomized:</td>
<td>Relative risk 0.96 (0.51 to 1.83) (59 fewer to 100 more per 1,000)</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Nonrandomized: 3</td>
<td>No consistent effects on readmission</td>
<td></td>
</tr>
<tr>
<td>Patient experience</td>
<td>Randomized: 4</td>
<td>2 of 4 showed benefit for satisfaction, helpfulness or self-esteem; beneficial interventions were multi-strategy or case management</td>
<td>Low</td>
</tr>
<tr>
<td>Physical function</td>
<td>Randomized: 5</td>
<td>3 of 5 showed benefit; beneficial interventions were multi-strategy</td>
<td>Very low</td>
</tr>
<tr>
<td></td>
<td>Nonrandomized: 1</td>
<td>No effect</td>
<td></td>
</tr>
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</table>
Limitations

- Diverse literature limited our ability to conduct meta-analyses
- Small number of studies using any one intervention strategy make it difficult to draw definitive conclusions
- Few studies identified a theoretical or conceptual framework used to inform the design and/or evaluation of the intervention
- Lack of detailed information limited our ability to abstract the following information:
  - Individual intervention components
  - Participants’ sociodemographic characteristics
- No studies included Veteran samples
## Priority Areas and Future Directions

<table>
<thead>
<tr>
<th>DOMAIN</th>
<th>EVIDENCE GAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>Few studies reported clinical and sociodemographic characteristics, limiting our ability to examine subgroup effects</td>
</tr>
</tbody>
</table>
| Interventions | Limited information makes it difficult to evaluate optimal dose of ED interventions  
|              | Few studies included elements of caregiver education or support                                                                                                                                             |
| Comparators | Additional research needed to identify effective intervention strategies before conducting head-to-head comparisons                                                                                         |
| Outcome   | Lack of a core set of outcomes limits comparison across studies                                                                                                                                              |
| Timing    | Time to assess significant changes in outcomes is unknown                                                                                                                                                   |
| Setting   | Interventions that “bridge” pre- and post-ED care may be most effective, more information around the timing and coordination of care is needed  
|              | Limited information on interventions taking place in large, integrated systems similar to the VA Healthcare System                                                                                            |
**Key Take Home Points**

### Clinical Implications

- ED visits should be considered along the continuum of geriatric care; interventions that bridge care occurring before *and* after discharge may be associated with better outcomes.

### Research Implications

- Innovative intervention and experimental designs may be useful in examining effects of individual ED intervention components.
- Additional research needed to identify outcome measures that apply to older adults with a range of medical conditions while also being responsive to change.

### Policy Implications

- Patients, caregivers, and providers should be engaged in selecting outcomes of interest and in sharing experience/satisfaction with intervention.
Operational Partner Discussant: Nicki Hastings, MD, MHS

Director, Center of Innovation to Accelerate Discovery and Practice Transformation
Durham VA Health Care System
Associate Professor, Medicine—Geriatrics
Senior Fellow, Center for the Study of Aging
Duke University School of Medicine

Full-length report and cyberseminar available on ESP website:
https://www.hsrd.research.va.gov/publications/esp/
Older Veterans in VHA EDs

>1M ED visits 65+ annually
≈ 45% of all ED visits
≈ 11% increase
36% age 75+

FY15: 1,055,650
FY16: 1,092,329
FY17: 1,178,008

Linear (Encounters):
\[ Y = 61,179x + 9.863 \times 10^5 \]
\[ R^2 = 0.9495 \]
Older Veterans in VHA EDs

• The majority of older adults evaluated in the ED are **not** admitted to the hospital
  — ~75% of older adults evaluated in VHA EDs are discharged

• **ED visits are increasingly intensive**
  — In VHA EDs, 45-65% of patients are prescribed at least one new medication

• **Communication hurdles**
  — Deficits-expected duration of sx/illness (63%), diagnosis (20%), f/u instructions (39%),
    return precautions (55-79%)

• **Medication safety**
  — 32% of older Veterans discharged from the ED were prescribed a high risk medication
    or did not have appropriate monitoring in next setting
Older Veterans in VHA EDs

- **ED returns**
  - 1 in 5 within 30 days

- **Higher risk**
  - previous hospital or ED use
  - chronic conditions
  - functional disability
  - inadequate social resources
  - psychological distress
  - medication problem
  - incomplete understanding of discharge information

- **High engagement with Primary Care**
  - 70% had not seen outpatient provider between ED discharge and first return
VA Geriatric Emergency Care Workgroup

- Led by VHA Offices of Emergency Medicine and Geriatrics and Extended Care

- Building Capacity for Excellence in Geriatric Acute and Emergency Care in the Veterans Health Administration Summit, February 2\textsuperscript{nd} 2018
  - John A. Hartford Foundation and West Health Institute

- Geriatric Emergency Department Accreditation
  - Derived from 2014 multidisciplinary “Geriatric Emergency Department Guidelines”
  - ACEP, AGS, ENA, SAEM
Promising Practices

• **NQF ED Transitions Quality Measurement Framework**
  - ED Patient Aligned Care Team (ED-PACT) Communications Tool (Greater Los Angeles)
  - GERI-VET (Cleveland → 9 VAs)

• **VA Best Care Anywhere**
  Enhancing Quality of Provider Practices for Older Adults in the Emergency Department (EQUiPPED) (Atlanta, Durham, Nashville → 12 VAs)

• **Research → Practice**
Patients/Need
- Nearly half of all patients in VHA EDs are 65+
- Opportunities for improvement: med safety, transitions, integration with existing clinical services eg LTSS

Tools
- Robust research and data infrastructure
- Clinical prediction tools
- Promising clinical innovations

Motivation
- Veterans deserve the best care within and across all settings
Resources

• EMCHAT: Treating Geriatric Patients in the Emergency Department – live webcast TODAY 12/20 1p-2p EST
  – VA participants register here: https://www.webcaster4.com/Webcast/Page/89/27939
  – Non-VA participants register here: https://www.train.org/vha/course/1081754/live_event

• Emergency Medicine Foundation Fellow to Faculty Research Career Development Grant
  – 2 year, 200K, support for early career investigator to conduct research focused on delivery of emergency care in VA
  – Submission deadline 2/28/2019
Questions?

If you have further questions, please feel free to contact:

Jaime Hughes, PhD, MPH, MSW
jaime.hughes@duke.edu
### Examples of Clinical Innovations in VA Geriatric Emergency Care

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<thead>
<tr>
<th>Title</th>
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<tbody>
<tr>
<td><strong>ED Patient Aligned Care Team (ED-PACT) Communications Tool</strong></td>
<td><a href="https://www.research.va.gov/research_in_action/Emergency-Department-Patient-Aligned-Care-Team-ED-PACT-Transfer-Tool.cfm">https://www.research.va.gov/research_in_action/Emergency-Department-Patient-Aligned-Care-Team-ED-PACT-Transfer-Tool.cfm</a></td>
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<tr>
<td><strong>GERI-VET</strong></td>
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