

The Emergency Medical Services System:

Helping Persons Living with Dementia Age in Place

Manish N. Shah, MD MPH

Professor & Chair

Azita G. Hamedani Distinguished Chair of Emergency Medicine



Persons Living with Dementia and ED Use

- Complex medical and social needs
- Reliant on emergency departments (ED) for acute illness care
 - Rates ~ 1.3x persons without dementia
- Reasons
 - Limited access to outpatient care
 - Limited rapid outpatient diagnostic testing and therapeutic interventions
 - Delays in seeking care

Persons Living with Dementia and ED Use

- Challenges with ED care
 - Difficult environment
 - Emergency medicine providers have limited health information
 - e.g., diagnosis of dementia, goals of care
 - Discontinuity of care
 - Emergency medicine approach is traditionally different
 - Focus on life threatening, time sensitive conditions

Helping PLWD and Care Partners Age in Place

What Is the Emergency Medical Services System?

- Traditional EMS system
 - Provide urgent prehospital treatment and stabilization for serious illness and injuries and transport to definitive care



What Is the Emergency Medical Services System?

- Modern EMS system
 - Embraces its public health role
 - Serves as the *community* safety net
 - Leverages its universal presence
 - Rapidly responsive



New EMS Provider: Community Paramedic

- Definition
 - EMS provider who functions outside their usual emergency response and transport roles to reduce ED and hospital use and support the community's health
- Multiple roles
 - Perform public health and prevention activities
 - Educate and coach patients and care partners
 - Assess and monitor patients
 - Deliver advanced care to patients
 - Collaborate with community-wide resources

New EMS Provider: Community Paramedic

Strengths

- Universally present
- Highly respected
- Knowledgeable regarding acute illnesses
- Have advanced diagnostic & therapeutic capabilities

Challenges

- New type of role
- Limited disease specific knowledge
- Limited mobile diagnostic technologies
- Limited ability to collaborate across systems of care
- Unclear licensing/scope of practice
- No dedicated funding

Community Paramedics & PLWD Research

- Prevention: Educating care partners of PLWD
 - Resources Enhancing Alzheimer's Caregiver Health (REACH)
 - Pilot trial (n=10) to evaluate implementation in a rural community
 - Addressed communication and electronic health record issues
 - Good engagement and participation
 - Strong qualitative support

Community Paramedics & PLWD Research

- Prevention: Community Paramedic Transitions Intervention
 - Based on Coleman's Care Transitions Intervention
 - Delivered to older ED patients being discharged home
 - Subgroup analysis of ED patients with cognitive impairment
 - Outcome: ED revisits within 30 days
 - ITT analysis: adjusted odds ratio 0.25 (95% CI: 0.07, 0.90)
 - Despite 31% not getting the full intervention

Community Paramedics & PLWD Research

- Substitution: High-intensity telemedicine program
 - Home-based acute illness care for older adults residing in independent and assisted living
 - Delivered by technicians with telemedicine and laboratory testing capabilities
 - Subgroup analysis of patients with dementia
 - 24% decrease in ED use

Where to Go?



Methodological Considerations

- Requires evaluation for diverse groups of PLWD and care partners
 - Rural, limited English proficiency, low resource communities
- Implementation science approaches critical for translation to practice
 - Involvement of community members and organizations necessary
- Randomized and pragmatic clinical trials are necessary
 - Inclusion of diverse populations to evaluate effectiveness and needed modifications

Infrastructure Research & Development

- Develop and test necessary **communications linkages and efficiencies** to support the needs and care of PLWD and their care partners
 - Include medical and social service providers
 - Access integrated medical and social service records
 - Parse records for use
 - Role for artificial intelligence?

Infrastructure Research & Development

- Develop **devices to monitor and diagnose** acutely ill PLWD at home
 - Develop and test telemonitoring and telehealth technologies
 - Utilize artificial intelligence to unburden providers
 - Develop and test medical devices (e.g., viral and bacterial panels)
 - Provide definitive care in the home

Programmatic Research & Development

- Prevention
 - Develop and test a community paramedic-led approach to **address the educational and social support needs** of PLWD and their care partners as dementia evolves
 - Develop and test a community paramedic-led **enhanced transitions**
 - Between any sites

Programmatic Research & Development

- Substitution
 - Develop and test a community paramedic-led approaches to **deliver acute illness care** to PLWD
 - Extend to acute hospitalization at home?

Summary

- Community paramedics can help support aging in place
 - Bring their advantages to bear
 - Leverage their universal presence and extensive medical skills
 - Prevent ED visits
 - Substitute for ED visits
- Infrastructure and programs need development and testing
- Early research is promising, but much to do

Thank You!

Manish N. Shah, MD MPH

mnshah@medicine.wisc.edu

@MNShahMD



BerbeeWalsh Department of
Emergency Medicine
UNIVERSITY OF WISCONSIN
SCHOOL OF MEDICINE AND PUBLIC HEALTH

References

- Beck AP, Jacobsohn GC, Hollander MM, Gilmore-Bykovskyi AL, Werner N, Shah MN. Features of Primary Care Practice Influence Emergency Care-seeking Behaviors by Caregivers of Persons with Dementia: A Multiple-Perspective Qualitative Study. *Dementia*. 2020. 20(2):613-632. PMID: 32050779; PMCID: PMC7423731
- Feng Z, Coots LA, Kaganova Y, Wiener JM. Hospital and ED use among Medicare beneficiaries with dementia varies by setting and proximity to death. *Health Affairs*. 2014; 33(4):683-690.
- Gillespie SM, Wasserman EB, Wood NE, Wang H, Dozier A, Nelson D, McConnochie KM, Shah MN. High-Intensity telemedicine reduces emergency department use by older adults with dementia in senior living communities. *Journal of the American Medical Directors Association*. 2019; 20(8):942-946. PMID: 31315813; PMCID: PMC7213053.
- Hwang U, Carpenter C, Dresden S, Dussetschleger J, Gifford A, Hoang LY, Leggett J, Nowroozpoor A, Taylor Z, Shah MN; GEAR* and GEAR 2.0** Networks. The Geriatric Emergency Care Applied Research (GEAR) network approach: a protocol to advance stakeholder consensus and research priorities in geriatrics and dementia care in the emergency department. *BMJ Open*. 2022;12(4):e060974. PMID: 35459682. PMCID: PMC9036447.
- Jacobsohn GC, Hollander M, Beck AP, Gilmore-Bykovskyi A, Werner N, Shah MN. Factors influencing emergency care by persons with dementia: Stakeholder perceptions and unmet needs. *Journal of the American Geriatrics Society*. 2019; 67(4):711-718. PMID: 30624765; PMCID: PMC6458085
- LaMantia MA, Stump TE, Messina FC, Miller DK, Callahan CM. Emergency Department Use Among Older Adults With Dementia. *Alzheimer Dis Assoc Disord*. 2016 Jan-Mar;30(1):35-40. doi: 10.1097/WAD.0000000000000118. PMID: 26523710; PMCID: PMC4764430.
- Shah MN. The formation of the emergency medical services system. *American Journal of Public Health*. 2006; 96:414-423. PMID: 16449600; PMCID: PMC1470509