

# Older Adult Falls in Emergency Medicine—A Sentinel Event



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## KEYWORDS

- Emergency department • Accidental fall • Geriatric • Trauma • Implementation
- Emergency medical services

## KEY POINTS

- Low-level falls occur in one-third of adults over age 65 each year and are a leading cause of death in developed nations.
- Injurious falls more often occur in community-dwelling older adults and usually in or around the home. Hence, prehospital providers generally represent the first-line health care professionals to manage falls and initiate innovative approaches to alleviate emergency department crowding.
- Emergency department falls research is limited in quality and quantity, with continued uncertainty regarding accurate, reliable, and feasible approaches to identify high- or low-risk fallers at increased risk for recurrent falls, as well as available interventions to reduce those future falls.
- Following an episode of emergency department care, some health care systems are using a falls clinic model to expedite definitive risk assessment and fall reduction interventions.
- Innovative approaches to assessing dynamic fall risk and fall incidence using smart phone technology are being explored.

## EPIDEMIOLOGY OF FALLS

Aging populations worldwide are reshaping the epidemiology of trauma.<sup>1</sup> Older persons, generally described as aged 65 or greater, comprise about one-fourth of trauma

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admissions, and trauma-related injuries are the fifth leading cause of death in the United States. Aging trauma victims have twice the mortality of younger patients when adjusted for injury severity score, but even minor trauma mechanisms like ground-level falls can precipitate rapid functional decline, preventable emergency department recidivism, and diminished quality of life. In fact, about one-third of older fall patients discharged from the emergency department experience one of these outcomes at 3 months.<sup>2</sup> Between 36% and 50% of patients have an adverse event such as a recurrent fall, emergency department revisit, or death within 1 year after a fall.<sup>3,4</sup> The challenge for health care providers is to identify which patients will suffer short-term adverse outcomes, and to develop feasible, widely available interventions to reduce these sequelae.<sup>5</sup> Prehospital, emergency department, and trauma services continue to adapt in response to this evolving epidemiology of trauma.<sup>6</sup>

Definitions for falls vary across studies, but recently, the Prevention of Falls Network Europe (ProFaNE) has described a fall as “an unexpected event in which the participants come to rest on the ground, floor, or lower level.”<sup>7</sup> The prevalence of falls is largely derived from single-center retrospective studies or secondary analyses of administrative databases, both of which may simultaneously underestimate the scope of fall injuries and overestimate the observed value of diagnostic and therapeutic interventions.<sup>8</sup> However, algorithmic approaches to improve the value of Medicare data are now underway,<sup>9</sup> as well as chart review methods that augment International Classification of Diseases (ICD)-9 codes with the patient’s chief complaint.<sup>10</sup> At least 1 fall occurs each year in about one-third of community-dwelling individuals over age 65, increasing to 50% of those over age 80.<sup>11–13</sup> Among those living at home, falls usually occur in and around the home, with 20% causing potentially life-threatening injuries.

Frailty is an important predictor of falls, but accurate measures of vulnerability among older adults in emergency department settings do not exist.<sup>13,14</sup> Similarly, existing constructs of frailty fail to accurately identify subsets of nursing home residents at increased risk for falls.<sup>15</sup> However, injurious falls presenting to emergency department trauma units are more commonly community-dwelling individuals.<sup>16</sup> Once patients are hospitalized, 3 to 5 inpatient falls per 1000 patient-days occur across medical, neurologic, and surgical populations, with 2% resulting in fractures.<sup>17</sup> Geography is another factor in assessing the sequelae of falls. Rural fall victims are less likely to be hospitalized, have a shorter duration of hospital length of stay, and yet demonstrate higher 1-month readmission rates and mortality.<sup>18</sup> In the United States, direct medical costs associated with falls totaled \$616 million for fatal and \$30 billion for nonfatal injurious falls in 2012.<sup>19</sup> As fall-related hospitalizations and associated costs continue rising, emergency department identification of older adults at higher risk for fall-related injuries will become increasingly relevant. Accordingly, this article will focus on prehospital and emergency department fall risk screening and interventions and real-world barriers to implementation of these concepts, while exploring evolving approaches to management such as postemergency department falls clinics and technological approaches to monitor falls and fall risk factors.

## PREHOSPITAL FALL RISK ASSESSMENT AND PREVENTIVE INTERVENTIONS

Emergency medical service (EMS) providers increasingly encounter fall-related complaints. The traditional scoop and run paradigm has shifted to a more evaluative, patient-centered process that empowers paramedics and paramedic extenders to assess intrinsic and extrinsic risks for future falls.<sup>20</sup> Emergency department and primary care providers often are not aware of EMS fall evaluations when patients are not transported to the hospital. Reducing injurious falls will require more efficient

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