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A Hand Raised for Help: Geriatric "Lift-Assist" Emergency Medical Calls as a Marker of Need for Early Intervention

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Abstract

Background: Geriatric patients who have fallen often call emergency medical services (EMS) for assistance back to their feet but then, once so assisted, refuse transport to the hospital. In this study, these incidents of geriatric fall with refusal of transport are referred to as a "lift-assist".

Methods: A year's worth of a single urban EMS service's records was reviewed to identify cases where a patient refused transport after a fall and was at least 65 years old.

Results: More than 19,000 calls were reviewed, of which 7,329 were for patients at least 65 years old.

Of these, 433 involved a fall with a refusal of transport. Of these, nearly a third (142, or 32.8%) involved a repeat EMS call within 30 days, which usually resulted in transport to the ED (71.1%) and often in a hospitalization (42.3%).

Conclusion: The literature, including our own recent review of the records of an urban EMS system in Massachusetts, suggests many of these patients need more than a helping hand to stand, and would benefit from immediate or near-term follow-up for medical and /or rehabilitation care.

Introduction

The emergency call for a "lift assist" is encountered daily in prehospital medical care. An elderly patient has fallen or otherwise ended up in a position they cannot rise from, and so they call for help. The patient's expectation is that once they are assisted back to their feet, the medical encounter will be over. It is "a lift assist," nothing more. Sometimes this care is provided by police or firefighter first responders even before emergency medical services (EMS) themselves arrive. The patient does not want to be transported to the hospital or anywhere else for further evaluation, and his or her formal refusal is duly documented.

For decades, researchers have found "lift assist" calls to be a marker for frailty or illness. A study by Vilke *et al* out of San Diego in 2002 surveyed elderly patients who had called 911 for help and then declined transport and found that 70% of them did indeed seek short-term follow-up, either with their primary doctor, at an urgent care or at the emergency department. Of those who did follow up, a third were hospitalized[1].

Other studies have also found "lift-assist" patients to be at increased risk of repeat falls and near-term mortality[2,3]. A study out of Connecticut by Cone *et al* of more than 1,000 "lift-assist" calls with transport refusals

found that more than half had a repeat call for help in the next 30 days, often again for a fall. Of those repeat calls, more than half were then transported to hospital with new injuries or medical problems[2].

A 2013 systematic review out of Australia by *Mikolaizak et al* looked at a dozen worldwide studies of EMS emergency calls for geriatric falls, and found that worldwide, and despite the usual default expectation of a transport to hospital, "up to half of older people who have fallen [and then have been] attended [by an ambulance team] are not transported to EDs." The authors noted promising efforts to provide alternative care and fall prevention programs for patients who fall but then are not transported to hospital[4].

Logan *et al* conducted a randomized controlled trial in Nottingham, England, of assigning 204 geriatric fall patients who declined transport to either a community fall prevention program, including home physical therapy and occupational therapy, or to a control group (where patients simply received a post-fall letter advising them to follow up with their primary care and regional social services). Both groups kept a fall diary, and a year later, those who had received the home PT and OT interventions had an incidence rate ratio of 0.45 compared with the control group (3.46 vs 7.68 falls per year, respectively)[5].

EMS has thus been identified as a mechanism for providing preventative health care, and the geriatric fall with refusal as a signal that identifies patients who might benefit from early intervention.

Our geriatric research group looked at a year's worth of urban EMS calls involving a patient aged 65 or older who refused transport after a fall[6]. We were curious what happened with those patients in the coming weeks. Did they again have to access emergency medical care? Did they end up requiring a hospitalization, a short-term rehab stay, or long-term nursing home care? Our data was previously reported in the American Journal of Emergency Medicine, where we analyzed the data for patient characteristics predictive of who would be most at risk of needing further care. In this mini-review, we explore whether an elderly lift-assist patient with refusal of transport would be better served by immediate or near-term follow-up for rehabilitation care.

Methods

The study was conducted in New Bedford, an urban center in Southern Massachusetts and home of St. Luke's Hospital, a Level II Trauma Center with a large geographic catchment area. New Bedford EMS responds to about 20,000 calls annually and transports the vast majority of its cases to St. Luke's. A small minority are taken to three other regional hospitals.

Deidentified data from a single year (concluding October 2024) were extracted from the New Bedford EMS electronic medical record for this Institutional Review Board-approved investigation. The focus was on geriatric patients (65 years of age or older) who had called 911 for a fall, as identified by manually reviewing all cases with a potentially relevant chief complaint, including "fall", "weakness", "inability to self-mobilize", or need for "lift-assist".

The expectation in the New Bedford system, as generally throughout EMS as practiced in the United States, is that a person who calls 911 will be transported to hospital for evaluation. When this does not happen, a reason is documented, most typically in the form of a patient's formal refusal of transport. The study identified the subset of fall-transport refusal cases and then followed them out through the same EMS medical record system for the next 30 days to see what happened. Did they again call 911? Were they subsequently transported to hospital, or admitted to hospital?

New Bedford EMS uses ESO Solutions, Inc., for its medical records, and the service's interactions are with hospitals that use EPIC for electronic health records. An interface between EPIC and ESO automatically provides post-event QA follow-up information to the paramedics, including a discharge diagnosis and whether a patient was admitted to the hospital or discharged from the emergency department. So, hospital admissions that followed an EMS transport would be captured by the EMS medical record, but admissions that came about without EMS involvement — for example, admissions that occurred after family drove a patient to the emergency department for an evaluation — would not be captured.

Results

More than 19,000 calls were reviewed, of which 7,329 were for patients at least 65 years old.

Of these, 433 (or 5.9% of all geriatric EMS calls) involved a fall with a subsequent refusal of transport.

Of the refusals, nearly a third (142, or 32.8%) involved a repeat EMS call within 30 days, and that second call usually (71.1%) resulted in transport to the ED and often (42.3% of all repeat-call patients) in a hospitalization. Two of the documented repeat calls involved a death, either declared at the scene or in the emergency department.

Figure 1 details in a flow chart the review process of the 19,694 EMS calls reviewed.

Discussion

The experience of our urban Massachusetts EMS service shows that geriatric patients who call for a "lift assist" may need more than just a helping hand back to their feet. This is clearly an opportunity to intervene. It is also worth reiterating that repeat falls not involving EMS (e.g., when a

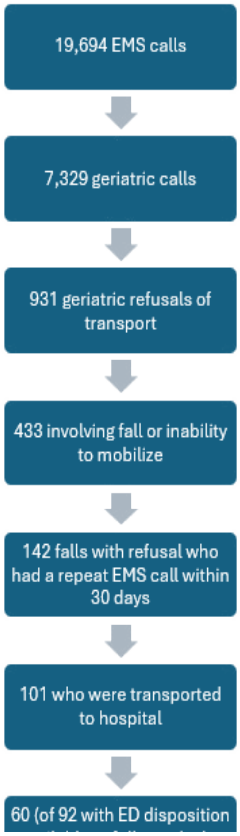

Figure 1: Of 19,694 EMS calls screened, there were 931 geriatric refusals of transport, of which 433 involved falls or inability to mobilize.

family member drove a patient to the hospital) would not be captured in our dataset. This may have resulted in an underestimation of hospitalization or injury rates.

It is particularly noteworthy that among the 142 "lift assist" patients who then had to call EMS a second time in the next 30 days, nine had to be transported specifically for a second fall, one that now often involved an actual traumatic injury. If one considers again the randomized trial from Nottingham, England by Logan *et al*, that data suggests the rate of repeat falls could be cut in half by providing robust PT and OT services.

But how robust, and at what cost?

The Nottingham study involved four community fall teams of PT, OT and nurses, who provided home visits and also organized 12 group sessions (twice weekly for six weeks) in local community centers. The home sessions included at least six PT strength and balance training sessions and practice getting up from the floor by OT, for "as many sessions … as deemed clinically necessary." The home program also involved a one-time home assessment and fall prevention remediation, including improving home lighting and footwear, adding grab handles and chair risers, and rearranging furniture, rugs or floor items that might be tripped over. Nurses also checked vitals, reviewed medications, and made further referrals as needed for primary care providers or social services[5].

Had the Nottingham team's robust home fall prevention program been activated for every one of the 142 geriatric falls with an EMS refusal in our system, extrapolating from their results suggests that perhaps four or five falls requiring a hospital visit might have been prevented, assuming falls requiring a hospital visit decline proportionally with total falls. The costs of providing more than 1,000 home PT visits (six to 12 home visits x 142 patients) would have to be weighed against an unknown number of possibly preventable hip fractures, subdural hematomas or other severe traumas suffered by the nine subsequent falls that were severe enough to require hospital evaluation.

Other more recent investigations have focused more broadly on EMS work towards geriatric fall prevention, and not just narrowly on the "lift assist" calls who refuse transport.

Paramedics with a Fort Worth, Texas group reported success at reducing both falls and hospitalizations with a multi-tiered program that included both broad screening strategies and focused interventions.[7] Camp *et al* reported in 2024 on their experience using the Centers for Disease Control and Prevention's Stopping Elderly Accidents, Deaths and Injuries (STEADI) screening tool with more than 45,000 patients aged 65 and older who accessed 911. The Fort Worth paramedics found that 59.3% flagged as being at risk of falls. The paramedics also used the Beers Criteria to screen for medications felt to put geriatric patients at increased risk of falls and found 48.1% were on potentially inappropriate medication for their age. Paramedics were also trained to do quick home environment assessments during a 911 call.

Positive STEADI or Beers Criteria screenings by 911 paramedics, as well as patterns of frequent emergency calls from some individuals, would then trigger referrals to community paramedicine services, also known as Mobile Integrated Healthcare (MIH).

The MIH team also had a second source of referrals from hospital and/or insurance companies, who would ask them to provide 48-hour re-evaluations of patients just discharged from hospital to home if those patients were judged to be at higher risk of fall or other short-term medical problems.

These various sources of referrals — whether triggered by the STEADI screening tool, by a Beers Criteria screen of medications, by paramedic gestalt, frequent 911 use or at the request of a hospital or insurance provider — led to 767 referrals to the Texas MIH program over a three-year period (2019-2022).

Patients received MIH services ranging from a one-time evaluation and review of medications and the home environment (with help arranging appropriate referrals) to more frequent visits up to twice weekly for 12 weeks in coordination with other home health providers.

Camp *et al* found that in the year before MIH interventions were provided, EMS responded to 43 fall-related 911 calls, while the year following the intervention they responded to 27, a reduction of 37.2%. They also found that one program, focused on frequent 911 users, led to such a significant reduction in emergency medical service use, ED visits and hospitalizations that it saved more than $1 million over three years, "with a per-patient enrolled savings of $19,053."

The Fort Worth study is of particular interest in light of our own experience in Massachusetts. When we attempted to identify predictors of which geriatric falls patients who refused transport might be at greatest risk of needing a short-term intervention, we were unable to do so. The only real predictor of the likelihood of a downstream hospitalization was advancing age. Yet the Fort Worth experience suggests that to identify who most needs a helping hand, a multi-pronged approach is most promising. That would combine sentinel events like a fall that prompts a 911 call with screening tools, but also the clinical gestalt of treating paramedics or discharging hospital staff.

That said, it should be acknowledged that the evidence in support of fall prevention work is low quality to date. The Fort Worth data is all retrospective in nature, for example, and overall, a 2016 systematic review found a lack of high-quality evidence supporting the efficacy of prehospital fall prevention referrals[8]. One recent trial also reported disappointing results in terms of patients being unwilling or unable to follow through with fall prevention programs, including "nearly, 40%" who declined to take even simple prophylactic steps such as using a cane or walker to prevent falls[9].

Conclusion

Geriatric patients who refuse transport after a fall are at high risk of needing short-term hospital and/or rehab care. The data is mixed on prehospital fall prevention programs, but as the population ages, and as more EMS calls come in to assist older people who have fallen, the problem will demand new answers.

Conflict of Interest

This research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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