# Pathfinder; alternative care pathways for older adults who phone the emergency medical services in North Dublin: a case study

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**Abstract**

**Purpose** – Emergency Department (ED) presentations in older people are associated with a wide range of adverse events, which increase the risk of lengthy hospitalisation and poor outcomes. Pathfinder is an inter-organisational initiative delivered in partnership between Beaumont Hospital Occupational Therapy and Physiotherapy departments and the National Ambulance Service. Pathfinder responds to non-serious and non-life-threatening emergency medical service (EMS) calls. This study aims to demonstrate how Pathfinder can safely treat a proportion of older people at home by using alternative care pathways (ACPs), therefore avoiding unnecessary ED presentations. Once a decision has been reached to treat the person at home, the Pathfinder follow-up team delivers functional rehabilitation and case management in the persons' home over the subsequent days.

**Design/methodology/approach** – This paper outlines the Pathfinder assessment, management and interventions in one clinical case example. Outcome measures include the level of patient satisfaction obtained via routine telephone feedback questionnaire and re-presentation to Beaumont Hospital within 30 days.

**Findings** – This paper illustrates through a case example the benefit of a collaborative multi-disciplinary rapid response team for non-serious and non-life-threatening EMS calls in older adults. The patient in this case example had no further EMS calls or ED presentations for 30 days after Pathfinder intervention and reported a high level of satisfaction with the service.

**Research limitations/implications** – ED presentation was avoided through comprehensive multi-disciplinary assessment, including immediate access to intensive follow-up support in the person's own home.

**Practical implications** – The Pathfinder service is improving access to ACPs for older people in the Beaumont Hospital catchment area. Pathfinder will now be spread nationally, with local adaptation, so that older people in other parts of Ireland will also benefit from this integrated model of care.

**Originality/value** – Patient feedback surveys confirm older adults want access to alternative care pathways.

**Keywords** Alternative care pathways, Pre-hospital, Older adult, Therapist, Paramedic

**Paper type** Case study

## Introduction

Although the majority of calls to the emergency medical services (EMS) do require acute hospital care, there are a

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proportion of emergency calls that are non-serious and non-life-threatening in nature. Presentation to emergency departments (ED) for older people can increase the risk of experiencing adverse events, such as pressure ulcers (Dugaret *et al.*, 2014), infection and adverse drug events (Ackroyd-Stolarz *et al.*, 2011), falls or functional decline (Dugaret *et al.*, 2014; Ackroyd-Stolarz *et al.*, 2011; Nagurney *et al.*, 2017) or delirium (Émond *et al.*, 2018).

Carers UK (2016) estimated that 1 in 10 carers used the emergency services because they did not know where else to go. Research has shown that older adults would welcome alternative care pathways (ACPs) in the ED (Carers UK, 2016; Yarris *et al.*, 2006). Vicente *et al.* (2013) report:

> [. . .] the essence of patient participation in the choice of healthcare they receive, when being offered an ACP by the ambulance service, is described as "a ray of hope". People value the option of an ACP where possible. Occupational therapists are skilled at assessing how health conditions impact peoples' abilities and helping them to overcome the difficulties that are affecting their daily occupations and roles (AOTI, 2022).

Furthermore, advocating for access to the right services is a vital component of Occupational Therapy. This is an evolving area of advanced practice for Occupational Therapy practitioners in Ireland, working alongside with our multi-disciplinary colleagues in pre-hospital care.

Sláintecare is a 10-year programme designed to transform the Republic of Ireland's health and social care services. One of the key features is to deliver the right care in the right place and at the right time, with a priority focus on developing primary and community services (Department of Health, 2020). The Pathfinder service commenced in 2020 and was initially funded by the Government of Ireland's Sláintecare Integration Fund (Grant Agreement 392). Pathfinder is a collaborative project between the National Ambulance Service (NAS) and Beaumont Hospital Occupational Therapy and Physiotherapy Departments. The NAS is the statutory pre-hospital emergency and intermediate care provider for the Republic of Ireland. In the Dublin area, EMS are provided by both the NAS and Dublin Fire Brigade (DFB). Traditionally, prior to the introduction of the Pathfinder service, all EMS callers were transported to the ED unless the patient declined.

The aim of Pathfinder is to provide safe and effective person-centred care at home through the use of ACPs. Beaumont Hospitals CEO Annual Report Beaumont Hospital (2019) details that older adults admitted under Care of the Older Person service had an average length of stay of 19.8 days. Pathfinder represents a systematic change and shifts from the traditional model of automatic transport to the ED for EMS callers. The Pathfinder service is the first pre-hospital model of its kind to be evaluated in the Irish setting, and an observational analysis by Bernard *et al.* (2021) showed that the Pathfinder service is a safe and effective alternative to the ED for older people following an EMS call.

## Composition of the pathfinder team

The Pathfinder Service consists of both the "Rapid Response" and "Follow-up" components. The Pathfinder Rapid Response Team comprises of an Advanced Paramedic and a Clinical Specialist/Senior occupational therapist or Clinical Specialist/Senior physiotherapist. The Rapid Response team is activated for non-serious or non-life-threatening EMS calls within agreed parameters (Figure 1). Additionally, the Pathfinder Rapid Response Team also accepts referrals directly from ambulance crews who have deemed a patient to be suitable for an ACP via Pathfinder assessment.

The second element of the Pathfinder Service is the "follow up" response. This is unique to existing pre-hospital EMS in Ireland. It consists of a Clinical Specialist/Senior occupational therapist and a Clinical Specialist/Senior physiotherapist. When a patient is deemed safe to remain at home at the time of the initial EMS call by the Pathfinder "Rapid Response" clinicians, Pathfinder follow-up may then be used to provide a short period of intensive intervention at home (Figure 2). The scope of the Pathfinder follow-up support includes case management, home-based functional rehabilitation and provision of essential equipment. This input typically lasts up to one week, with the aim of stabilising the situation and connecting the person to alternative hospital and community-based services for further intervention where required. The following case gives further insight into the role of Pathfinder as

**Figure 1** Pathfinder activation, outcomes and ACP's

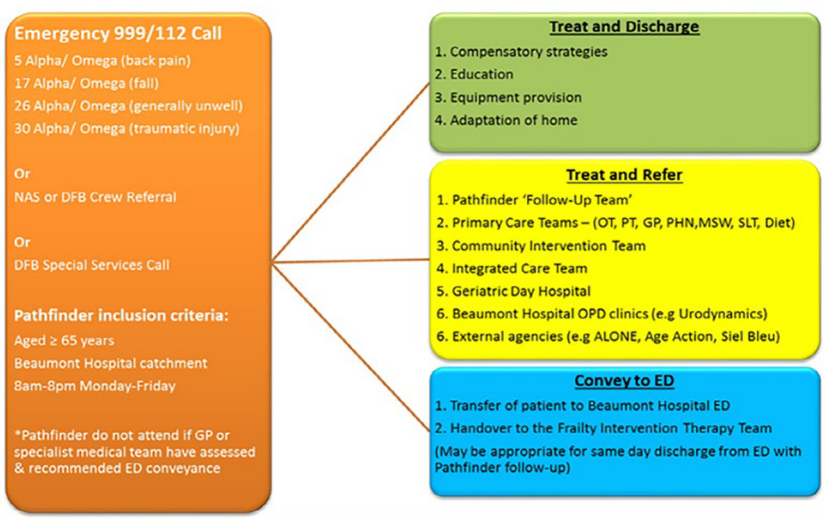
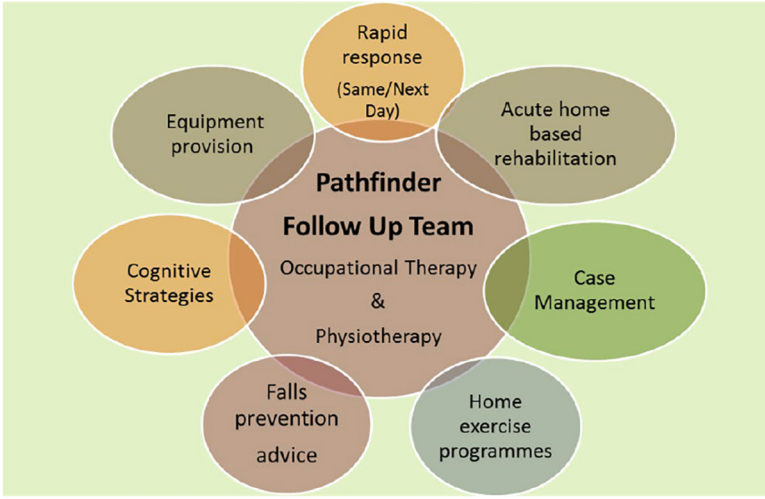


**Figure 2** Overview of Pathfinder "follow-up"




an EMS response to adults aged >65 years who report non-serious or non-life-threatening injury/illness.

## Pathfinder activation

An EMS call was made for a 79-year-old lady who had experienced two falls in 24 h. The EMS call was triaged by the EMS control centre and categorised using the Advanced Medical Priority Dispatch System as a 17-Alpha-04, representing a fall with no acute injury and no priority symptoms. The Pathfinder "Rapid Response" team was dispatched as the first response.

## Clinical presentation

The patient reported that she had slipped off the edge of her bed approximately eight hours previously and was unable to get up. She advised that she had been out for the full day and was exhausted. When she slipped off the bed, she pulled the duvet down and slept on the carpeted floor. The second fall occurred when attempting to stand up from the couch the next morning, witnessed by a family member who then assisted her up. They opted to ring for assistance at that point. The patient did not want to go to the hospital.

### *Assessment completed*

The Advanced Paramedic and Clinical Specialist occupational therapist completed a comprehensive assessment in the patients' home. The advanced paramedic completed a full head-to-toe assessment, examining for any signs of acute injury or illness. The patient had full recollection of both falls with no indication of loss of consciousness on either occasion. She had been on the floor overnight, and as a result, she had mild pain globally. Her previous medical history included depression, alcohol dependency, arthritis and recurring urinary infections. She had completed antibiotic treatment for a recent urinary tract infection in the previous week.

### *Physical state*

The advanced paramedic recorded the vital signs, including blood pressure, respiratory rate, oxygen saturations and blood glucose level. She had passed urine overnight and again this morning, reporting normal volume. She reported no dizziness or sensation changes when moving. A medication review identified completion of the antibiotic but no other changes to her regular prescription. Her daily medication routine was consistently managed using a blister pack. She took occasional pain relief for arthritic pain. A skin check was completed, and there were no overt signs of a pressure-related injury. The occupational therapist assessed her functional level. Using the Oxford Scale, her power was grossly 4/5 in all limbs (moving against gravity and moderate resistance). There was a minor restriction in her range of motion in both knees due to arthritic pain. She walked slowly using her four wheeled-walker around her home. She demonstrated full ability to weight bear when walking. She completed personal care independently after toileting, using a grab rail to assist her transfer. She stood from her armchair independently but reported persistence of chronic knee pain. She had significant difficulty transferring onto her bed. A profiling bed had already been provided by her public health nurse; however, she did not use it as she found it too narrow. Using the Rockwood clinical frailty scale (Rockwood *et al.*, 2005), her level of frailty was 6, corresponding to a moderate level of frailty. This represents her baseline functional level as requiring assistance with all outdoor activities and household tasks, requiring assistance with showering and minimal assistance with dressing.

### *Mental state*

This lady's spouse had recently passed away, and she was grieving his loss. She reported increased daily alcohol consumption and reported a gradual decline in her mood, cognition and mobility in the preceding months. Both the patient and her family member reported no acute change in her cognitive status before or following the falls. The occupational therapist administered the 4AT delirium screen (MacLullich *et al.*, 2019) and the 03DY cognition screen (Barbic *et al.*, 2018). Both screens indicated cognitive functioning within the norms, with no indication of delirium.

### *Primary concerns*

The primary concerns identified were the potential complications associated with lying on the floor for a lengthy period, namely, rhabdomyolysis, acute kidney injury and

pressure-related injuries. The risks of remaining at home were clearly discussed, including the risk of future falls. These risks were multi-factorial; gait and balance impairment, alcohol consumption, arthritic pain and difficulty with functional transfers.

*Treatments completed*

A joint decision was made between the patient, advanced paramedic and occupational therapist for the patient to remain at home and not travel to the ED at that time. A number of interventions were immediately implemented. The occupational therapist reviewed the functional transfers from both her own wooden framed bed and the profiling bed. The patient expressed a strong preference for her own bed as it was wider; however, it was too high to access safely, and she had used a step at the bedside. The initial fall had occurred while getting into bed as she sat on the edge and slid down onto the floor.

The occupational therapist re-orientated the profiling bed so that it was positioned next to the wall. It was agreed that in the short term, she would use the profiling bed and only transfer out of bed when someone was present until a longer-term strategy was sought. Her family agreed to stay with the patient over the next 48 h to monitor for any changes which may need urgent medical attention. Additionally, she was encouraged to reduce her daily alcohol intake and increase her hydration. A detailed summary was emailed to her general practitioner (GP) to inform them of the events. An appointment was scheduled with her GP for a full medical review, including a blood test two days later.

As this EMS call occurred on a Friday and as per the Pathfinder Team Operation Policy, the advanced paramedic completed a home visit within 48 hours on Sunday. They re-assessed for any signs of deterioration and found no adverse change in her presentation, and she was feeling well overall. The Pathfinder follow-up support (occupational therapist and physiotherapist) completed three visits over the next week, focusing on functional rehabilitation to maximise her independence and to reduce the risk of future falls. Using a rehabilitative approach, the occupational therapist worked with the patient to enhance her bed transfer technique. By analysing the functional limitations and taking the personal preferences of the patient into account, a solution was reached to adjust the height of her existing bed base, which would maximise independence getting in and out of her bed and reduce the risk of falling. A referral was accepted by a local volunteer service that completes minor DIY tasks. They adjusted her bed base to meet the exact height measurements provided by the occupational therapist. This made a significant difference, enhancing safety when transferring out of bed. A bed lever was also fitted to offer additional support and stability. The public health nurse completed a review of the patients' overall care needs and applied for one additional hour of home care to assist with the nighttime routine. In addition, a referral was made for the installation of a falls pendant alarm. This minimised the risk of a long lie on the floor should a repeat fall occur.

The Pathfinder physiotherapist completed a full assessment of her mobility and strength and prescribed a home exercise programme. The advice was also given on suitable footwear, and a referral was sent to the local primary care team physiotherapist for the continuation of rehabilitation and assessment for a new outdoor walking aid. The patient attended her GP, who found no acute illness, and they advised her to take daily pain relief to minimise the flare-ups of pain related to her arthritis.

The patient expressed that she felt socially isolated following the death of her husband. She agreed to attend the local day centre as a way of re-engaging with social groups. A referral was sent to the Geriatrician Day Hospital for a comprehensive geriatric multi-disciplinary assessment in lieu of moderate frailty, falls, potential emerging changes in her cognition and social changes identified.

*Outcomes*

The Pathfinder team supported this patients' care to be carried out in her home, avoiding presentation to the ED. Once the decision to treat this patient at home was reached by Pathfinder, the patient and her family, the Pathfinder follow-up support was then activated. These face-to-face interventions ensured she was closely monitored after the EMS call and had access to immediate home-based rehabilitation. This patient had no further falls or ED presentations within the subsequent 30 days.

At the point of discharge from the Pathfinder service, a brief feedback survey is completed with each patient over the telephone. This lady reported that she felt very well supported by the team and valued the opportunity to remain at home. The key interventions to minimise the risk of future falls were completed in her home environment. There is strong evidence to promote home-based Occupational Therapy led assessment and interventions in the home following a fall. Gillespie *et al.* (2012) identified that home safety assessment and interventions were effective in reducing the rate of falls, and the risk of falling and appear to be more effective when delivered by an occupational therapist. The multi-disciplinary input this lady received ensured her access to the right care at the right time. Had the traditional practice of automatic transport to the hospital following an EMS call been the only pathway available, it is likely that the key factors contributing to her falls would not have been addressed in a timely manner.

## Discussion and conclusion

Pathfinder is a pre-hospital, rapid response multi-disciplinary team responding to non-serious, non-life-threatening EMS calls in the Beaumont Hospital catchment area. This clinical case study serves as an example of how the Pathfinder model of care can safely support this patient cohort after an acute event and reduce avoidable hospital presentations. This is achieved through access to ACPs and immediate follow-up input by Occupational Therapy and Physiotherapy in the home. A primary aim of the health service executive (HSE) and Sláintecare is to deliver enhanced care to older adults in a community setting. By providing immediate functional rehabilitation and case management, bridging both the acute and community healthcare settings, positive patient outcomes have been achieved. This case also highlights the significant value occupational therapists bring to pre-hospital care of older adults. Although the Pathfinder service continues to develop, preliminary results suggest that this model of care would add value to all adults >65 years of age across a wider geographical

reach. The HSE Winter Preparedness Plan (2022) outlines a plan to spread the Pathfinder model of care by expanding across a number of other hospital sites in Ireland. These new Pathfinder teams should complement existing acute and community services and facilitate access to ACPs for older adults who contact the EMS.

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Ethical approval was waived by the Beaumont Hospital Research Ethics Committee as it is their policy that ethical approval is not required for one case example. Written consent was obtained from the patient for the purpose of this case publication.

## References

Ackroyd-Stolarz, S., Read Guernsey, J., Mackinnon, N. and Kovacs, G. (2011), "The association between a prolonged stay in the emergency department and adverse events in older patients admitted to hospital: a retrospective cohort study", *BMJ Quality & Safety*, Vol. 20 No. 7, pp. 564-569.

Association of Occupational Therapy Ireland. (2022), "What is occupational therapy", available at: www.aoti.ie/what-is-ot (accessed 10 March 2022).

Barbic, D., Kim, B., Salehmohamed, Q., Kemplin, K., Carpenter, C.R. and Barbic, S.P. (2018), "Diagnostic accuracy of the Ottawa 3DY and short blessed test to detect cognitive dysfunction in geriatric patients presenting to the emergency department", *BMJ Open*, Vol. 8 No. 3, p. e019652, doi: 10.1136/bmjopen-2017-019652.

Beaumont Hospital. (2019), "CEO annual report", available at: http://my.beaumont.ie/index.jsp?n=387 (accessed 16 March 2022).

Bernard, P., Corcoran, G., Kenna, L., O'Brien, C., Ward, P., Howard, W., Hogan, L., Mooney, R. and Masterson, S. (2021), "Is pathfinder a safe alternative to the emergency department for older patients? An observational analysis", *Age and Ageing*, Vol. 50 No. 5, pp. 1854-1858.

Carers UK. (2016), "Pressure points: carers and the NHS", Carers UK, London, September, pp. 1-25, available at: www.carersuk.org

Department of Health (2020), "Sláintecare integration fund projects 2020", available at: www.gov.ie/en/publication/0d2d60-slaintecare-publications/#slaintecare-integration-fund-projects (accessed 15 March 2022).

Dugaret, E., Videau, M.-N., Faure, I., Gabinski, C., Bourdel-Marchasson, I. and Salles, N. (2014), "Prevalence and incidence rates of pressure ulcers in an emergency department", *International Wound Journal*, Vol. 11 No. 4, pp. 386-391.

Émond, M., Boucher, V., Carmichael, P.H., Voyer, P., Pelletier, M., Gouin, É., Daoust, R., Berthelot, S., Lamontagne, M.E., Morin, M. and Lemire, S. (2018), "Incidence of delirium in the Canadian emergency department and its consequences on hospital length of stay: a prospective observational multicentre cohort study", *BMJ Open*, Vol. 8 No. 3, p. e018190, doi: 10.1136/bmjopen-2017-018190.

Gillespie, L.D., Robertson, M.C., Gillespie, W.J., Sherrington, C., Gates, S., Clemson, L. and Lamb, S.E. (2012), "Interventions for preventing falls in older people living in the community", *Cochrane Database of Systematic Reviews*, Vol. 2021 No. 6, , pp. 289-297, doi: 10.1002/14651858.CD007146.pub3.

HSE (2022), "Winter preparedness plan 2021-2022", available at: www.hse.ie/eng/services/publications/winter-plan-2021-2022.pdf (accessed 15 March 2022).

MacLullich, A., Shenkin, S.D., Goodacre, S., Godfrey, M., Hanley, J., Stiobhairt, A., Lavender, E., Boyd, J., Stephen, J., Weir, C., MacRaild, A., Black, P., Diernberger, K., Hall, P., Tieges, Z., Fox, C., Anand, A., Young, J., Siddiqi, N. and Gray, A. (2019), "The 4 'A's test for detecting delirium in acute medical patients: a diagnostic accuracy study", *Health Technology Assessment*, Vol. 23 No. 40, Chapter 5, doi: https://www.ncbi.nlm.nih.gov/books/NBK544921/ (accessed 15 March 2022).

Nagurney, J.M., Fleischman, W., Han, L., Leo-Summers, L., Allore, H.G. and Gill, T.M. (2017), "Emergency department visits without hospitalization are associated with functional decline in older persons", *Annals of Emergency Medicine*, Vol. 69 No. 4, pp. 426-433.

Rockwood, K., Song, X., MacKnight, C., Bergman, H., Hogan, D., McDowell, I. and Mitnitski, A. (2005), "A global clinical measure of fitness and frailty in elderly people", *Canadian Medical Association Journal*, Vol. 173 No. 5, pp. 489-495.

Vicente, V., Castren, M., Sjöstrand, F. and Sundström, B.W. (2013), "Elderly patients' participation in emergency medical services when offered an alternative care pathway", *International Journal of Qualitative Studies on Health and Well-Being*, Vol. 8 No. 1, p. 20014, doi: 10.3402/qhw.v8i0.20014.

Yarris, L.M., Moreno, R., Schmidt, T.A., Adams, A.L. and Brooks, H.S. (2006), "Reasons why patients choose an ambulance and willingness to consider alternatives", *Academic Emergency Medicine*, Vol. 13 No. 4, pp. 401-405, doi: 10.1197/j.aem.2005.11.079.

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