Title. ***Evaluation of an emergency department falls pathway for older people: a patient chart review***

Ms. Anne O Keeffe ED Advanced Nurse Practitioner ,Mercy University Hospital, Cork City, Co Cork, Ireland, anokeeffe@muh.ie

Ms. Sile O Grady, *Mercy University Hospital, Cork City, Co Cork, Ireland,*

Ms Finola Cronin (Community Falls Co-ordinator), North Lee Community Health

Ms Clodagh Dolan, Mercy University Hospital, Cork City, Co Cork, Ireland,

Ms Ann O Hea. Mercy University Hospital, Cork City, Co Cork, Ireland,

Katie Louise O Shea, School of Nursing and Midwifery, College of Medicine and Health, Brookfield Health Sciences Complex, University College Cork,College Road, Cork T12 AK54,

*Professor Corina Naughton (**Corresponding author**)UCC School of Nursing and Midwifery,* Professor in Clinical Nursing in Older Person HealthCare, School of Nursing and Midwifery, College of Medicine and Health, Brookfield Health Sciences Complex, University College Cork,College Road, Cork T12 AK54, corina.naughton@ucc.ie; twitter: @corinanaughton1

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Short title ED Falls Pathway

Highlights

Under-assessment and management of modifiable falls risk in the emergency department (ED) can lead to unsafe patient discharge and recurrent falls.

A structured Falls Pathway in the ED can improve assessment of modifiable falls risk factors and referral to community prevention services.

There are a sub-group of vulnerable patients who experience recurrent falls, although they had engaged with community falls prevention services.

Abstract

The number of older adults presenting to EDs following a fall continues to rise, yet falls management often ignores opportunities for secondary falls risk reduction. Advanced Nurse Practitioners (ANPs) in EDs have an important clinical leadership role in improving outcomes for this group of patients.

Aim: This study describes the development of an ANP led falls pathway in an ED to improve safe discharge. It evaluates compliance with the pathway and referrals to community falls prevention services. It also draws comparison with baseline practice as recorded in 2014.

Methods

The Falls Pathway involves four steps: 1) screening at triage (3 questions), 2) risk stratification (low, medium, high), 3) risk assessment (lying and standing blood pressure (B/P), timed-up and go (TUG), 4-AT for delirium screening, polypharmacy), and 4) referral to community falls services.

We undertook a 12-month chart review of all patients aged 65 years or older presenting following a fall to the ANP service in 2018. We compared data to a baseline audit in 2014; descriptive and Chi squared statistics were used to examine the data.

Results

The 2018 audit involved 77 patients representing 27% of ANP caseload. A repeat fall occurred in 42% (32/77) of cases and 35% (22/77) reported a fear of falling. The Falls Pathway was initiated in nearly 80% (62/77) of patients and compliance with falls risk assessment ranged from 42% for lying and standing B/P to 75% for TUG. In 2014, a review of 59 patient charts showed 27% (16/59) experienced a repeat fall, but other risk factors such as fear of falling were not recorded. In 2018, the majority of patients (88%) discharged home were referred to community falls prevention services compared to 22% in 2014.

Conclusion

The Falls Pathway improved falls risk assessment in the ED, identified opportunities for risk reduction and optimised referral to community falls services. The pathway continues to be a valuable tool but requires resources for ongoing implementation among the wider ED team.

Introduction

Emergency departments (EDs) provide essential treatment for older people following a fall, but their role in secondary falls prevention is poorly defined. Worldwide falls are the second leading cause of accidental or unintentional injury deaths, with the highest rates occurring in people aged 65 years or older [1]. Data from the Irish Longitudinal Study of Ageing (Tilda) [2] identified that 37% of community-dwelling participants aged 50 years and older experienced a fall, the prevalence of falls increased with age, 19% experienced recurrent falls, and 18% resulted in an injury requiring medical treatment. Falls in older people are often multifactorial and require a comprehensive assessment to identify modifiable risk factors [2], [3], yet there is frequently sub-optimal risk assessment and management in EDs [4]. Advanced Nurse Practitioners (ANPs) in the ED have become a vital part of the ED workforce to help meet increased demand for services and patients' expectations for timely and high quality care [5]. The role also encompasses clinical leadership in both delivering and improving services, especially for vulnerable patient groups such as older people [6]. This article describes the design and evaluation of an ANP led falls prevention pathway for older adults presenting to the ED following a fall.

Background

ED attendances for falls have increased by an average of 26% per 1000 population for people aged 75 years or older [7]. Sotherland et al. [8] identified the significant injury associated with falls in older people including fractures (45%), head trauma (22%), abrasions, lacerations, or contusions (34%). A fall can also signal the onset of physical deterioration, in a follow-up of 350 older patients after a fall, 22% experienced a recurrent fall within six months, 43% revisited the ED, 31% required hospitalisation and 2.6% died [4].

The most recent Major Trauma National Report (TARN) [9] in Ireland highlights that trauma in older adults is now more prevalent than younger adults. Older adult trauma is mainly due to falls of less than 2 metres, termed 'low falls' (57%, n=2861), and is

associated with increased age, female gender, and home environment [9]. Low falls are on par with road trauma (31%) as a significant cause of traumatic brain injury and mortality. Managing trauma in an older adult population is frequently complicated by multimorbidity, including frailty and cognitive decline [9], [10].

Falls management in EDs has been criticised for a narrow focus on the immediate injury and a failure to identify wider contributing factors, leading to missed opportunities for future prevention [4] [11]. Modifiable falls risk factors frequently overlooked during ED consultations are unsteady gait, depressive symptoms, fear of falling, dysrhythmias, delirium, orthostatic hypotension and polypharmacy (especially sedatives) [3], [12]. Both patients and ED staff can have a poor understanding of the multifactorial nature of falls and associated prevention strategies [11]. Following a holistic assessment of older adults admitted to an ED observation unit, Foo et al. [13] reported that 71% of older adults had hidden needs requiring intervention.

The majority of patients who present with a fall to ED are discharged home; thus, ED staff play a pivotal role in secondary falls prevention [4] [11] [12]. The patient assessment in the ED is an important opportunity for immediate risk reduction, patient risk stratification, education and referral to community prevention services [13] [14]. There are well-recognised challenges in undertaking such multifactorial assessment in the ED, including pressure to meet ED waiting time targets, the busyness of the environment, lack of space and inadequate gerontological knowledge and skills among ED staff [15] [16].

ED Advanced Nurse Practitioner

ED ANPs manage increasing numbers of falls related trauma in older adults [17]. In Ireland, the advanced nurse/midwife practice (ANP/AMP) role is a registered professional title with the Nursing Midwifery Board of Ireland [18] and is based on a standardised education and competency framework**.** Registered ANPs/AMPs demonstrate ongoing competencies as expert practitioners, senior clinical decision-makers and clinical leaders in a specific area of practice. The rationale for introducing the ANP role to the ED was to improve patient timely access to senior clinical decision making and patient centred management. At a system level, ANPs respond to the changing needs of the population profile and act as change agents within EDs to translate evidence into clinical practice [18]. In ED, ANPs operate as autonomous practitioners with a defined patient caseload and they generally manage patents that

are ambulatory and categorised as lower-risk based on standardised triage scales (e.g. Manchester Triage Scale) [5] [17].

The complexity in the older adult population presenting to EDs has seen the emergence of new roles such as the Geriatric Medicine Nurse Model (GEM) and multidisciplinary Frailty Intervention Teams (FIT) to improve outcomes for the frail older patient [19]. However, the ED ANPs continue to manage a large portion of older adults presenting with injurious falls. An important part of their role is to bring a solutions-focused approach to manage care deficits and develop standardised clinical pathways.

This article describes the development and evaluation of an ANP led ED falls pathway for older patients. We outline the profile of patients managed using the Falls Pathway and examine compliance with the pathway and patient outcomes. We also benchmark changes in practice relative to an earlier patient chart review in 2014. Finally, we present the recent updates to the pathway and illustrate its utility in practice with a case study.

Framing the problem

In Ireland, the first national falls guidelines were published in 2009, but they were slow to penetrate clinical practice, especially in EDs [20]. In 2014, to increase awareness of the guidelines and obtain a snapshot of falls management in one ED, a retrospective 3-month chart review was carried out with a convenience sample of 59 patients (aged ≥65 years) who presented with a fall. It was a pragmatic review and data were extracted on six main variables which reflected what was typically recorded in relation to falls at that time (Table 2). The audit highlighted deficits in falls risk assessment and missed opportunities for referral to a newly established Community Rehabilitation and Support Team (CR&ST) for falls prevention (data presented in the results section). A search of the literature in 2014 did not identify any published standardised approaches to assessing and managing falls risk within the ED.

Development of the Falls Pathway

One of the authors [AOK] lead the development of the ED Falls Pathway in collaboration with a multidisciplinary team (MDT), the hospital falls committee and community falls services. In 2014, the pathway started as a simple three-item checklist to prompt staff to refer patients to community falls services. Over the years, the pathway has evolved in line with best practice in falls management [3] [20] and the expansion of community services. In 2017, the pathway was updated to incorporate validated screening tools for the main modifiable falls risks factors (Box 1).

The process of developing the Falls Pathway has built trust and collaboration with the community falls prevention services. In 2014, the community services were hesitant to take referrals from the ED due to high levels of inappropriate referral. The ED team and community falls coordinator co-produced standardised criteria and a referral form to identify patients' suitability for rehabilitation.

Falls pathway algorithm

The purpose of the Falls Pathway was to improve safe discharge and risk stratify patients presenting to the ED through improved investigation of modifiable falls risk, streamline referrals for appropriate community follow-up and clarify the roles of the ED team members including triage nurses.
Following initial triage using the Manchester Triage Scale (MTS) [21], patients presenting with a fall and who were categorised as MTS category II (very urgent) to V (non-urgent) were managed using the Falls Pathway.

The pathway was configured as four steps:
Step 1: Falls screening at triage based on three questions
Step 2: Risk stratify: low, medium, high
Step 3: Investigate modifiable risks *(introduced in 2017)*

> All patients received: lying and standing B/P, timed-up-and-go (TUG), 4-AT, polypharmacy (>5 medication) assessment (Box 1).
>
> In addition, medium/high-risk patients received an ECG, urinalysis, and if clinically indicated blood tests (full blood count, urea and electrolytes) or mid-stream specimen of urine (MSU).

Step 4: ED Review and referral as appropriate to falls prevention and community services.

Falls Screening: At triage patients were asked three questions by the triage nurse:1) have you fallen in the past 12 months, if so, how often; 2) are you worried about your balance; 3) are you afraid of falling?

Patient risk of recurrent falls was categorised as follows:

Low risk: Answers ‘no’ to screening questions, single explained trip/slip, risk assessments within acceptable ranges (Box 1).

Medium risk: Answers ‘yes’ to at least one triage question, presence of polypharmacy, vague history, dizziness, screens positive for at least one risk factor.

High risk: One or more abnormal risk assessment, unexplained fall indicating possible syncope [22].

Since 2017, patients have received a standard falls risk assessment comprised of the 4-AT, TUG, and vital signs, including lying and standing B/P (Box 1). If patients screen as a medium or high risk, they have an ECG, urinalysis and blood test as clinically indicated.

Falls referral

The pathway helped clarify appropriate referrals based on patient risk.

Within the ED, higher-risk patients (positives scores on the above tests) were reviewed by senior doctors or the Clinical Nurse Specialist for Older Adults (CNS). Eligible patients discharged from the ED were referred to the community falls co-coordinator or other community supports as appropriate. The falls coordinator followed-up patients by phone within seven days of their referral to discuss the most appropriate falls pathway with the person.

Box 1 Validated assessment tools to identify falls risk

Lying and standing B/P (as per the Royal College of Physicians guidance [23]) is used to test for orthostatic hypotension. A B/P drop of 20 mmhg systolic or 10 mmhg in diastolic' triggers a review by a senior doctor.

Timed-up-and-go (TUG) is a timed assessment of patient mobility starting with standing up from an armed chair walking three metres at their usual speed (with usual aid) and returning to sit on the chair. As well as identifying gait abnormalities, time >20 seconds indicates frailty, increased risk of falls and functional decline at 3 and 6 months, it is also suitable for use in the ED [24]. A score >20 seconds triggers a review by a senior doctor.

The 4-AT is used as a rapid screen for delirium and cognitive assessment in the ED [25]. Early recognition may reduce falls and falls related injuries in patients aged ≥ 65 years through targeted and appropriate interventions [25]. A 4-AT score ≥ 3 triggers a review by a senior doctor, while scores ≤2 requires follow-up by the patient's GP.

(https://static1.squarespace.com/static/543cac47e4b0388ca43554df/t/57ebb74ad482e9f4d47b414d/1475065676038/4AT_1.2_English.pdf)

Polypharmacy is usually defined ≥ 5 medications and is an independent risk factor for falls in older people. There is a strong correlation between falls risk and psychotropic medications, including serotonin re-uptake inhibitors, tricyclic antidepressants, benzodiazepines and sedatives [12, 26]. Polypharmacy triggers a review by a senior doctor or ED pharmacist.

Pathway Implementation

Regular education sessions were provided to ED clinical staff and non-clinical staff to re-enforce the pathway, and Falls Champions were recruited from nursing staff to promote its uptake. However, high staff turnover requires ongoing training and dissemination of the pathway.

Methods

The setting was a city centre hospital with an annual ED attendance of 35,000 patients. We undertook a retrospective chart review (January 2018 to December 2018) of patients who presented with a fall and who were managed by the ED ANP service.

A data extraction template was used to guide data collection based on NICE guidelines [3]. Patients attending the ANP service were identified using a paper-based register, and all eligible patients were included. We undertook a comparative analysis with the 2014 audit data. However, definitions have changed and there were only a small number of common variables between the datasets; thus, results should be interpreted with caution. To illustrate the application of the pathway in practice we have included a recent case study.

Ethics: The project was registered with the Hospital Quality and Risk Department; a full ethical review was not required as the project was considered as routine clinical evaluation of practice (https://hrcdc.ie/).

Data analysis used descriptive statistics; categorical data were presented as proportions and percentages, and continuous data as means and standard deviations. We compared the 2014 and 2018 data using Chi-squared statistic (X^2). Data analysis used SPSS (Statistical Package for the Social Sciences) version 24.

Results

Over the 12-month study period, 7894 patients aged 65 years and older attended the ED with 5.6% (n=446) due to a fall. The ANP service treated 280 older patients and 78 presented with a fall, representing 27% of the ANP caseload.

Patient profile

The final data analysis was based on 77 patient records, and one patient was excluded due to missing data. The majority (74%) of patients were female with a mean age of 76 years (SD 7), and 44% lived alone (Table 1). Patients primarily (80%) self-presented and the mean duration of time in the ED was 176 minutes. At triage, 53% were categorised as requiring standard review (MTS IV), a further 38% were urgent (MTS III), and 4% required very urgent review (MTS II). There were high levels of co-morbidities, with cardiovascular disease (43%) and osteoarthritis (31%) the most prevalent. There were high levels (44%) of polypharmacy, and nearly 50% of patients were taking prescription psychotropic drugs (sedatives 29% or antidepressants 21%). There were low levels of other risks, such as vision impairment (18%) and incontinence (5%).

Table 1 Patient Profile

Table 1 Patient Characteristics

		n	%
		N=77	%
Gender	Male	20	26
	Female	57	74
Age	Mean years (sd)	76	7.5
Residence	Own home	73	95
	Care home	2	3
	other	1	1
Lives alone	Yes	34	44
Mode of arrival	Ambulance	12	16
	Self-presented	65	84
Duration in ED	Mean minutes (sd)	1:39	176 mins
Manchester Triage Category (MTS)	II Very urgent (orange 10 mis to assessment)	4	5
	III Urgent (Yellow 60 mins)	29	38
	IV Standard (Green 120 mins)	41	53
	missing	2	3
Location of fall	Home	33	43
	Street/outside	38	49
	Other	4	5
Mobility	Independent	58	75
	Uses Aid	15	19
Polypharmacy >5 medication		34	44
	Sedation	22	29
	Antidepressants	16	21

	Antipsychotic	3	4
Hypertension		34	44
Vision		14	18
Incontinence		4	5
Co-morbidities	CVD[1]	33	43
	Stroke /TIA[2]	3	4
	Osteoporosis	16	21
	Dementia	2	3
	Osteoarthritis	24	31
	Respiratory	11	14
	Other	24	31

[1]CVD Cardiovascular disease, [2]TIA Transischaemic attack

Comparison between 2018 and 2014 data

The 2014 chart review involved a convenience sample of 59 patients aged 65 years or older presenting with a fall, while the 2018 chart review only included patients managed by the ED ANP service. The age profile of both groups was similar, but ANPs tended to manage a slightly younger cohort (Table 2). Over 90% of falls were 'explained' falls, previously known as 'mechanical falls'. There was a significant difference in previous falls between the groups. In 2018, 42% of patients experienced previous falls, and 35% reported a fear of falling. In the earlier audit, 27% reported a previous fall, but data was missing on 44% of patients, while 'fear of falling' was not recorded at all.

There were changes in the way recurrent falls risk were classified between the two data sets. In 2014, falls risk was categorised as 'single explained' (46%), recurrent (22%), and unexplained (7%), and 25% were not categorised. According to the Falls Pathway (2018), risk was categorised as low (56%), medium (22%), and high (3%), and 18% were not categorised. Despite the broader risk definition in the 2018 data the proportions of patients in each group were similar. Patients' injuries were more accurately recorded in 2018, with 30% of patients sustaining a fracture and 46% a

soft tissue injury. The data for 2014 may be inaccurate with only three fractures recorded.

In 2014, there was no attempt to use validated tools to assess for falls risk, in contrast, over 70% of patients in the recent audit had the TUG and 4-AT recorded, but the recording of lying and standing blood pressure was lower at 42%.

Table 2 comparison data audit 2014-2018

		2014		2018		Statistical difference
		N=59	%	N=77	%	
Age categories	65-70	13	22	20	26	X^2 (DF=3) =6.6 , p=0.08
	71-80	18	30	35	46	
	81-90	24	41	16	21	
	>90	4	7	5	6	
Falls type	Fall mechanical [Explained]	54	92	74	96	X^2 (DF=1)=1.38, p=0.24
	Collapse [unexplained]	4	7	2	2	
	missing	1	1.6	1	1.2	
Previous falls	0	16	27	43	56	X^2 (DF=3) =40.3, p<0.001
	1	7	12	13	17	
	≥2	9	15	19	25	
	Not documented	26	44	2	3	
Fear of failing		Not asked		27	35	
Falls risk	Single explan[1]	27	46	43	56	X2 (DF=3)= 2.79,p=0.42

	[Low Risk[2] :Explained fall, no previous history of falls)]					
	Recurrent Fall[1] [Medium Risk: recurrent fall, fear of falling, vague historian, >3 medication)]	13	22	17	22	
	Unexplained Fall[1] [High Risk: unexplained fall, collapse /syncope)]	4	7	2	3	
	Not documented	15	25	14	18	
Injury	Fracture	3	5	23	30	
	Injury/other	2	3			
	Soft tissue injury			35	46	
	Wound			7	9	
	Head injury			10	13	
	Multiple injuries			2	3	
	Not documented	54	91	-		
Falls Risk assessment	Lying & standing B/P	0		33	42	
	Time up and go (TUG)	0		58	75	
	4-AT Delirium screen	0		56	73	

Compliance with Falls Pathway and risk assessment

The initiation of the Falls Pathway was high, with 79 % of patients asked the three falls screening questions at triage. Based on these replies, over 80% of patients were risk-stratified: 56% low-risk patients were suitable for discharge by the ANP, 22% were medium-risk, and 3% were high-risk requiring further investigation or review by the medical team. The falls risk assessment using validated tools identified between 5 to 8 people with abnormal findings (slow gait speed (n=5), 4-AT >0 (n=8), orthostatic hypotension (n=5) indicating hidden risk. Thirteen per cent (10/77) of patients were reviewed by the medical team and 5% (4/77) by a clinical nurse specialist (CNS) in older adults.

Patient outcomes

In both time points, similar proportions of patients were discharged (81% vs 87%) and between 13% and 16% of patients were admitted to acute care hospitals. In 2018, just over one-quarter of patients (n=20) re-attended the ED within three months (not measured in 2014). Referral to the community falls coordinator was high (88%), non-referrals were mainly for patients admitted to hospital. In contrast, only 22% of patients were referred to falls services or physiotherapy from the ED in 2014.

Table 3 Patient outcomes and community follow-up

		2014		2018		
		N=59	%	N=77	%	
Patient destination	Admit	8	14	7	9	X2 (df3)= 7.4, p=0.11
	Discharge	42	71	49	64	
	Discharge other	6	10	18	23	
	Transfer to acute care hospital	1	2	3	4	
	Left during Tx	2	3	-		
	Re-attended ED within 3-months	Not recorded		20	26	
	Community Falls Coordinator	Not in place		68	88	

Community Referrals	CR&ST	3	5			
	Physiotherapy/ occupational therapy	10	17			
	Community Intervention Team	1	1	4	5	
	Fracture clinic	-		4	5	
	GP	34	58	67	87	
	Geriatrician OPD	6	10	4	5	
	PHN	2	3	-		
	Speciality	10	17	-		
	Transitional care team	Not in place		2	2	
	Missing	13		9	12	
Community falls service uptake 2018 data available on n=68)[1]						
	FRAC[2]	Data not available		28	41	
	Out Patient Therapy clinic			14	20	
	CR&ST[3]			8	11	
	Reviewed at home and linked with community services			4	6	
	Required medical review following therapy assessment			11	16	
	Declined services			12	17	
	Not suitable			3	4	
	Missing			9	13	

[1] answers add to more than 77 as some patients referred to more than one service, numbers add to more than 68 as patients can have more than one outcome; [2] Falls Risk Assessment Clinic, [3] Community Rehabilitation and Support Team (CR&ST)

For the 2018 cohort, we followed-up patients referred to the community falls coordinator; data were available on 68 patients (Table 3). In total, 53 (78%) patients accepted an offer of some intervention and only 4% of referrals were deemed inappropriate. In total, 16 (23%) people who had engaged with community services represented to the ED within three months.

Revisions to Pathway

Following the most recent chart review and in consultation MDT, the following revisions were made (Figure 1):

- Patients on psychotropic medications (antidepressants or sedatives) are now categorised as medium/high risk with recommendations for medication review by their GP or the ED pharmacist as required.
- The referral form to the community falls coordinator was redesigned to include the results of the 4-AT, TUG and lying and standing B/P and other tests.
- Review by Frailty Intervention Team (incorporates previous CNS role) was added to the pathway for medium and high-risk patients.
- A pre-discharge checklist for referral to community falls or other services were added to the pathway to prompt out-of-hours referral by ED staff.

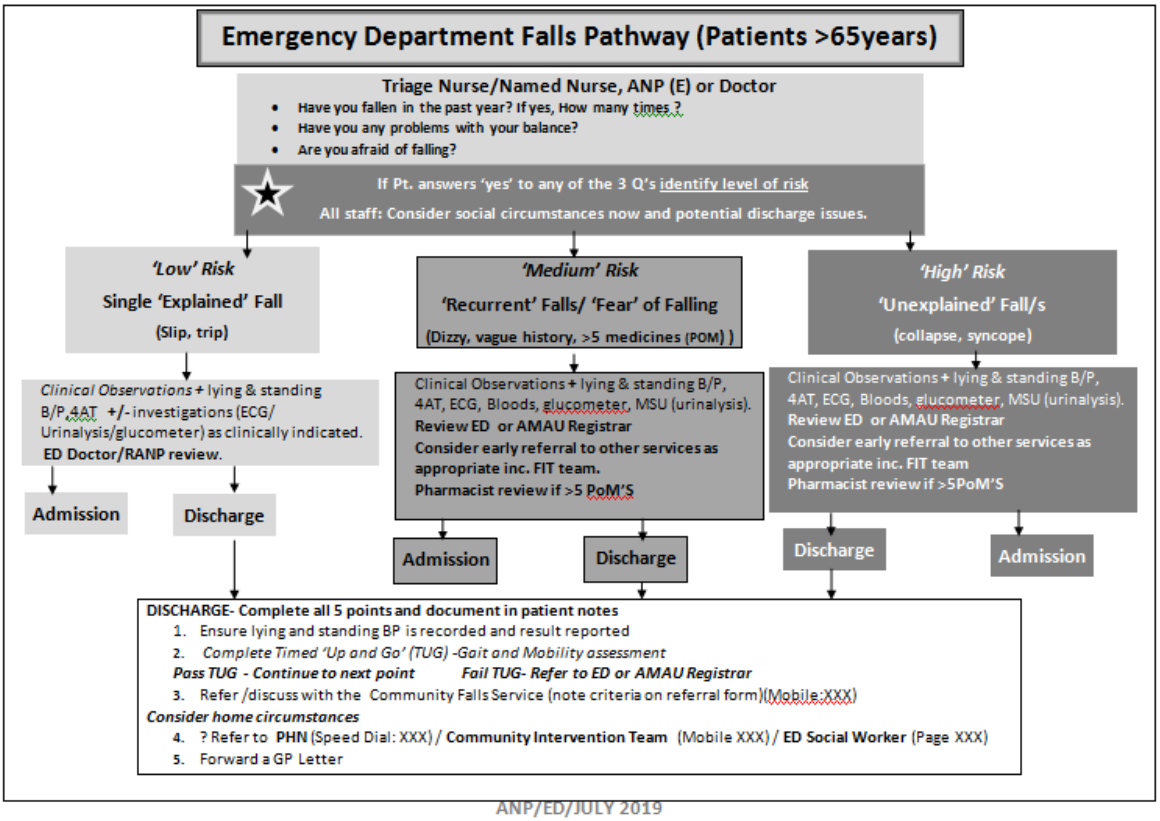

Figure1 Revised falls Pathway

Clinical application of the Falls pathway

A case study illustrates how the ED Falls Pathway is operationalised and influences clinical decision making within the ED team. It reinforces the need to see beyond the immediate injury and to undertake a compressive assessment.

Box 2 Clinical application of Falls Pathway

A 75 year old lady, Mary (not her real name) self-presented to the ED following a fall while crossing the road. Mary's presenting complaint was a right shoulder injury, she lived alone and was right hand dominant.

The triage nurse identified limb injury as the presenting complaint and recorded the patient's vital signs including her pain score. These were all within normal limits but her pain score was 7/10 (moderate pain). A Manchester Triage category of yellow (urgent) was allocated due to the pain score.

The triage nurse directed the patient to the ANP for further assessment and evaluation.

The ANP commenced the falls pathway by asking the three Falls screening questions. This revealed three previous falls in the past year and a fear of falling. Mary denied a problem with her balance. On further questioning, she felt the fall on this occasion was due to rushing while crossing the road before the pedestrian lights changed. The other falls were also related to trips or stumbles; she described herself as becoming more 'accident prone'. Mary was on lecardipine 5mgs daily for hypertension and was also on anxicalm 2mgs daily (benzodiapine) since her husband died 3 years ago.

The clinical examination noted tenderness over the right humeral head with reduced abduction of the right shoulder. An X-ray of the right shoulder was requested to exclude a fracture. No other injuries were noted but an essential tremor in her feet and hands was evident and this had not previously been investigated.

Due to the history of recurrent falls and the long-term use of benzodiapine, Mary was categorised as a'moderate falls risk'. This triggered further investigations: 4-AT, ECG, lying and standing BP and blood tests for FBC, U&E, LFTs. The 4-AT score was 1 (one mistake in listing months of the year), and there was no evidence of orthostatic hypotension. The X-ray of the right shoulder showed degenerative changes but no fracture. The patient was treated as a soft tissue injury, a sling was not applied due to her falls risk and regular oral paracetamol was prescribed for pain relief. The blood results were all within normal limits. To complete the falls pathway a 'Timed Up and Go' assessment was undertaken and demonstrated a slow gait speed (>18 seconds) and bradykinesia. A differential diagnosis of Parkinson's disease was suspected and the patient was referred to the ED Frailty Intervention Team to start a comprehensive geriatric assessment and medication review. The patient was discharged home with an urgent out-patients' appointments in the specialist Parkinsons clinic and a referral to Community Falls services.

The case study illustrates how a fall can be the first presentation of more complex health issues. The triage questions help identify patients who can benefit from more indepth assessment. The falls pathway promps staff to see beyond the presenting injury and draws attentsion to secondary falls prevention.

Discussion

In this study, older people presenting with a fall accounted for over one-quarter of the ANPs' caseload. The profile of this population illustrated the patient complexity managed by the ED ANPs. Although patients were screened as low acuity based on MTS, the majority were living with one or more chronic condition reflected in high levels of polypharmacy. The Falls Pathway has evolved from a simple referral checklist into a more in-depth assessment of modifiable falls risk factors in response to the growing complexity in the older adult population presenting to the ED. Even in this ambulatory patient group, the falls pathway highlighted the vulnerability of a subgroup of patients, whereby 40% had experienced a fall in the previous 12 months, and one-third of patients represented to the ED within three months. Compared to 2014, within the ANP service, there were substantial improvements in patients' falls risk stratification, assessment and appropriate referral to community falls prevention services.

To our knowledge, this is the first paper that has described a structured Falls Pathway in an ED. The pathway is driven by front-line practitioners, it has demonstrated sustainability and supports clinical decision making and safer patient discharge.

Falls risk assessment

The typical ANP caseload is often characterised as young with low-level complexity [5][6]. This study challenges this view and points to the need for ED ANPs to utilise gerontological competencies in line with changing population demographics and increasing complex patient caseloads. In this study population, the most frequent modifiable falls risk factor was prescribing of sedative (29%) and long-term antidepressant (21%) medication, highlighting the need for deprescribing strategies [27]. A small proportion of patients also had evidence of postural hypotension, slow gait speed (indicating frailty), cognitive decline (not previously diagnosed) and visual impairment.

While the patient chart review illustrated that compliance with some risk assessments, such as lying and standing B/P, could be improved, the data demonstrated high referral rates of eligible patients to community falls prevention services. In the ED, there can be sub-optimal attention to secondary falls prevention [13] [11]. Tirrell et al.

[28] described the inadequate recording of falls risk factors in patients presenting with a fall and called for clinically feasible approaches to improve assessment and management of falls risk in ED.

The ED falls pathway in this study is an example of a pragmatic, practitioner-led initiative to improve patient outcomes through early identification and modification of falls risk during the ED visit. The pathway combined oral questions with validated risk assessment tools. Southerland et al. [29] also recommended combining self-report questions with a functional test of gait and balance to improve falls risk screening. The Falls Pathway in this study promoted more in-depth risk assessment and improved patient risk stratification to help identify patients requiring senior medical review and safer discharge. The risk assessment data were also used to improve appropriate referral to falls prevention or community services and to identify patients for priority community follow-up.

Fisher et al. [30] highlighted the complexity of low falls trauma in this population and called for proactive frailty screening and better access to comprehensive geriatric assessment (CGA) and management. While CGA is regarded as the gold standard in managing frail complex older adults [15], in reality, it is a scare resource, difficult to deliver in EDs and not all patients require this level of input. In this study, there was a cohort of older adults with repeat ED visits who could benefit from a CGA approach. While, health services are investing in specialist front-door older adult services and teams [19], a significant proportion of older adults will continue to be managed by non-gerontological ED teams.

While patients managed by ANPs were the focus of this study, the Falls Pathway can potentially support all ED staff to deliver a more age attuned assessment and management plan. A compressive falls risk assessment is the responsibility of all staff managing this vulnerable patient group. The ongoing challenge is to integrate the Falls Pathway into the normative practice of all ED staff, including triage nurses. A standardised approach to falls assessment allows preventative plans to be put in place both while patients are in the ED and once discharged home.

Community falls prevention

The collaborative approach to develop the Falls Pathway improved the synergy between ED, and the community falls prevention services. Prompt referrals from the ED to the community falls coordinator increased the responsiveness of community services which may have an important influence on patient behaviour (only 12 patients declined community falls services). Shanker et al. [14] identified the minimal impact of a leaflet given to patients in the ED that directed them to a community falls programme, but it resulted in no uptake among participants. ED practitioners play a vital role in educating patients through detailed risk review, referral to and promoting the uptake of community falls prevention. Shanker et al. [11] [14] suggested that during an ED visit patients may be more receptive to counselling by ED staff on falls risk reduction. While Baker et al. [31] identified how immediate enrollment in a patient-centred falls prevention intervention following ED discharge significantly reduced falls incidents and fractures. Our analysis identified a higher risk group of twenty patients who represented to the ED within three months; sixteen of these patients had engaged with community falls services. It is likely that such patients require more intensive community support and may benefit from CGA and case management in the community [15][30].

Limitations

This was a single site study and data may not be generalisable. A limitation of the pathway is its uptake among the wider ED team, while we did not examine it formally, a preliminary review suggested there was a low level of risk assessment. High staff turnover in the ED requires constant retraining to maintain awareness of the pathway. The lack of electronic risk assessment with the option to include mandatory screening questions on falls also inhibited consistent implementation.

This was not a prospectively designed pre-post evaluation. The comparison between the 2014 and the 2018 data was limited as terminology around falls and referral pathways have changed. The review was based on a sub-sample of patients managed by the ED ANP service, and the retrospective chart review relied on the accuracy of the data recorded. There was no electronic patient registration and a manual register was used; thus some eligible patients may have been excluded. The small sample size prohibited detailed inferential statistical and sub-group analysis. Future projects will aim to evaluate the use of the Falls Pathway among the wider ED team and examine the views of patients.

Implications for practice

The ED staff providing care to patients who experience a fall need to be proactive in identifying modifiable risk factors in older adults that contribute to repeat falls and injury. A structured Falls Pathway, as outlined above, can help standardise practice, promote safer discharge and increase appropriate referral.

ANPs play a crucial clinical leadership role in addressing deficits in patient care and improving service delivery through developing structured pathways and role modelling best practice. As the population continues to age, all ED staff need the confidence, knowledge and skills to deliver age-attuned care that includes use of validated screening tools, and to initiate appropriate ED review and community referrals. The ED visit is an important opportunity for all staff to counsel patients on falls prevention and promote engagement with community services.

Conclusion

The introduction of a structured Falls Pathway in the ED improved risk assessment and referral to community falls services. The analysis highlighted the prescription of sedatives and long term antidepressants medication in older adults as important modifiable risk factors that require more consideration. The study also identified a high-risk group who represented to the ED within three months. Embedding a falls pathway as normative practice within busy EDs requires dedicated resources and integration with ED electronic systems, but investing in such pathways can improve risk management and prevention of secondary falls. The development of specialist front door older adult teams are a welcome resource in ED, but all ED staff, including ANPs, are likely to see an increase in the numbers and complexity of older adults. Staff require clinical confidence and competency to meet the needs of this group of patients and optimise opportunities for risk reduction and secondary prevention.

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