

Original Research Article

# Prioritization and management of calls from older people to GP out-of-hours services

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## Abstract

**Background:** Urgent out-of-hours medical care is necessary to ensure people can remain living at home into older age. However, older people experience multiple barriers to using out-of-hours services including poor awareness about the general practitioner (GP) out-of-hours (GPOOH) service and how to access it. In particular, older people are reluctant users of GPOOH services because they expect either their symptoms will not be taken seriously or they will simply be referred to hospital accident and emergency services. The aim of this study was to examine if this expectation was borne out in the manner of GPOOH service provision.

**Objective:** The objective was to establish the urgency categorization and management of calls to GPOOH, for community dwelling older people in Ireland.

**Methods:** An 8-week sample of 770 calls, for people over 65 years, to a GPOOH service in Ireland, was analysed using Excel and Nvivo software.

**Results:** Urgency categorization of older people shows 40% of calls categorized as urgent. Recognition of the severity of symptoms, prompting calls to the GPOOH service, is also reflected in a quarter of callers receiving a home visit by the GP and referral of a third of calls to emergency services. The findings also show widespread reliance on another person to negotiate the GPOOH system, with a third party making 70% of calls on behalf of the older person seeking care.

**Conclusion:** Older people are in urgent need of medical services when they contact GPOOH service, which plays an effective and patient-centred gatekeeping role, particularly directing the oldest old to the appropriate level of care outside GP office hours. The promotion of GPOOH services should be enhanced to ensure older people understand their role in supporting community living.

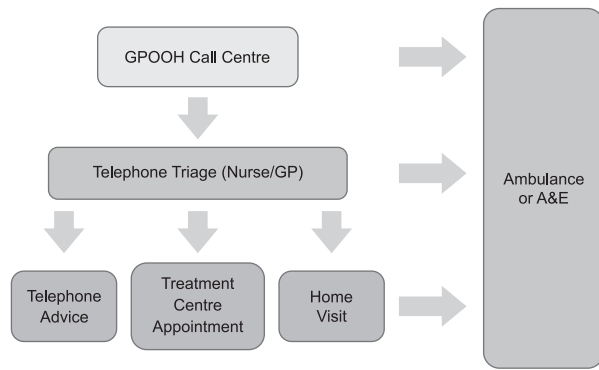
**Key words:** GP out-of-hours service, general practice, older people, GP cooperative, telephone triage

## Introduction

With ageing global populations, maintaining independent living is a priority for policymakers and service providers, as highlighted by the coronavirus disease-2019 (COVID-19) pandemic [1–3]. Urgent out-of-hours primary medical services are essential for supporting older people to live in their own homes into old age, but are most effectively utilized when their purpose is understood and service experiences meet patient expectations [4–8]. Under the traditional model of out-of-hours care, patients who became ill outside of surgery hours

received a home visit from their doctor. However, in Ireland and elsewhere, this model has been replaced by general practitioner (GP) cooperatives, as a response to concerns about overburdened GPs rather than as an evidence-based strategy to enhance patient-centred care [9, 10].

A central element of the GP out-of-hours (GPOOH) cooperative model is seeing patients at a designated treatment centre, which is both time-efficient and clinically preferable. The Irish GPOOH system is structured to rationalize service delivery, ensuring the most



**Figure 1** Pathway through GP out-of-hours. The arrows denote the direction of movement/referral for callers to GPOOH.

resource-intensive elements of the service are reserved for people most in need. Callers to GPOOH move through the system from initial call receptionist, to telephone-based nurse or doctor triage, and finally to GP consultation either in the GPOOH treatment centre or at home (Figure 1). At any stage, a referral to hospital accident and emergency (A&E) or an ambulance, or a decision that the person does not need to move to the next stage of the process may be made.

Daily living limitations, multi-morbidity and health self-assessment are the most important predictors of health service use by older adults [11]. Despite evidence that older people are reluctant to use out-of-hours services, research on use of GPOOH by older people is limited [12–14]. Previous research has drawn attention to the challenges faced by many older people accessing primary health care in Ireland [12, 15–17]. For those over the age of 65, GPOOH access barriers include transport availability, affecting over two-thirds of households [15–19], and dependence on family, neighbours and friends to provide transport when needed [10, 15, 16]. However, evidence shows people are hesitant to call on others late at night, especially older neighbours or family [12]. Where older people believe they are well enough to travel, they often do not consider themselves sufficiently ill to need a doctor [12, 13, 20]. When a doctor is deemed necessary, prompt access is key in the decision about where to seek care [4, 12]. However, there are limited alternative medical care options available out of hours, which may account for the over-representation of older people in A&E departments [14, 21]. Many older people worry they will not be able to convey the severity of their symptoms with sufficient effectiveness to be taken seriously and referred to a doctor [12]. Alternatively, a referral to A&E is believed to be the most likely outcome from a GPOOH consultation, with time spent negotiating the GPOOH system considered as delaying access to care [12]. The aim of this study was to examine if the progression pattern through the GPOOH service, including referrals for home visits and to emergency services, aligned with the service expectations of community-dwelling older people.

## Methods

Call records were examined from a GPOOH cooperative serving four counties (total population 159 156) in the northeast of Ireland, which received 79 237 calls over 12 months. The GPOOH operates from 6 p.m. to 8 a.m. on weekdays and 24 h on weekends and bank holidays. A sample was selected, representing 8 weeks of calls ( $n = 4498$ , 6% of total calls), with 1 week randomly selected from each quarter of the year, to reflect seasonal variations in service use. Calls were

from two counties (combined population 49 086) with a population over age 65 of 12%, broadly in line with the national average [22]. Call data were provided in Excel spreadsheet format. Anonymity was ensured through the removal of last names and telephone numbers. First names were retained to establish the sex of callers and to identify repeat calls from the same caller within each week. A field for sex was added and manually populated based on first name data. Data variables available included: date and time of the call; who placed the call to GPOOH; the ultimate service provided (nurse triage, doctor triage, home visit and treatment centre visit); and priority assessment at nurse triage and upon completion (identified as Emergency, Urgent or Routine). Descriptive data analysis was conducted by generating data variable matrices, using Nvivo 12 software.

## Results

People over age 65 years, living at home in the community, accounted for 770 (17%) of the 8-week sample ( $n = 4498$ ) of calls. These community-based calls for older adults are the focus of this paper and referred to throughout as the ‘data set’. Examination of the calls received during one sample week estimated 20% repeat callers, a significant number when compared with 12% repeat callers under 65 years during the same week. The unavailability of personally identifiable data was a factor limiting the accurate identification of multiple repeat calls for exclusion from the data set. Consequently, the analysis was based on 770 call instances rather than 770 individual callers. This approach reflected a realistic call caseload routinely managed by the GPOOH service.

Women were the largest group of callers ( $n = 465$ ), representing 60% of the sample. The median age of callers was 78 years, while callers over 80 years accounted for 43% ( $n = 330$ ) of the data set. In 70% ( $n = 541$ ) of cases, a third party negotiated the GPOOH process on behalf of the older person requiring care (referred to as callers). Data were not available on how third party callers were related to the patient or why the call was made by a third party. Calls were most frequent during daytime (weekend) hours ( $n = 341$ , 45%), but over one-third of all calls ( $n = 250$ , 32%) were received during the late night hours, between 9 p.m. and 8 a.m., and almost half of these ( $n = 106$ , 43%) were received for patients over 80 years of age. Table 1 presents call data for those over 65 years, distributed by time band.

### Urgency categorization

Calls received were assigned to one of three categories: Emergency, Urgent or Routine, according to set criteria. *Emergency* calls were transferred directly to a nurse at the telephone triage centre, not requiring a callback. Call priority categorization was applied at reception. Once the triage nurse had spoken to the patient, the priority category could be updated or left the same and similarly following consultation with the GP.

**Table 1** Times older people call GPOOH

Time of call	Total calls	%	80+ years
Daytime: 8:01 a.m.–6:00 p.m. <sup>a</sup>	341	45	138
Evening: 6:01 p.m.–9:00 p.m.	179	23	86
Night-time: 9:01 p.m.–12 midnight	127	16	61
‘Red-Eye’: 12:01 a.m.–8:00 a.m.	123	16	45
Total	770	100	

<sup>a</sup>Daytime calls only represent weekend or bank holiday days.

Of all calls in the data set, two-thirds (66%,  $n=509$ ) were classified as Routine by the telephone receptionist, one-third (30%,  $n=230$ ) were recorded as Urgent and 4% ( $n=31$ ) were categorized as Emergency. Following nurse triage, 16% ( $n=80$ ) of Routine classified calls were upgraded to Urgent and 0.5% ( $n=2$ ) to Emergency. Of Urgent calls, 3% ( $n=7$ ) were upgraded to Emergency after triage. Meanwhile, a downgrade to Routine occurred for 30% ( $n=70$ ) of Urgent and 13% ( $n=4$ ) of Emergency calls. Recategorization as Urgent was recorded for 11% ( $n=84$ ) of callers following clinical evaluation. No change in priority classification at completion was noted for 271 (35%) of calls. Urgency was acknowledged to some degree in the notes of frontline staff providing the service, but not always reflected in the final assignment of a priority rating within the system. This was because the clinician moved on to the next case, rather than spend time updating the computer record of a patient who had been successfully managed or referred.

In a small number of cases ( $n=60$ , 8%), telephone triage was provided by a doctor. Excluding those referred to hospital or emergency services, telephone advice alone was provided for 21% ( $n=160$ ) of the call sample by the triage nurse or doctor. The rate of triage advice alone was greater for the younger old, with 26% ( $n=114$ ) of those aged between 65 and 79 years receiving advice only, compared to 14% ( $n=46$ ) of those aged over 80 years. Callers who did not progress past triage included 177 (38%) of those who were 75+ years of age, including 69 (37%) of those aged 85 years or over. In almost one-third of nurse triage calls (28%,  $n=75$ ), an ambulance was called and a further 16% ( $n=42$ ) were referred to attend A&E. Alternatively, callers were encouraged to attend the treatment centre closest to them. Progression to the treatment centre accounted for 32% of callers ( $n=246$ ).

Data from the call sample (Table 2) show that 41% ( $n=135$ ) of callers over 80 years received a home visit compared to 14% ( $n=61$ ) of the younger old between 65 and 74 years of age. Referrals to A&E were made at various points in the process for 15% ( $n=113$ ), of whom 60% ( $n=68$ ) were for those over age 75 years, and an ambulance was called for a further 13% ( $n=104$ ) of callers, the majority of whom (70%,  $n=73$ ) were over 75 years. Emergency service referrals were also made from 21% of home visits (A&E = 26, Ambulance = 16) and from 16% (A&E = 36, Ambulance = 4) of treatment centre appointments.

## Discussion

### Principal findings

Despite reported reluctance to use out-of-hours services, older people have been well represented among users of the GPOOH service. Unsurprisingly, the greatest demand is from the oldestold. Priority classifications were found to be inconsistently updated as callers moved through the system, presenting an incomplete picture of the

urgency of calls. Nonetheless, despite categorization as lower priority at the initial contact, referral of almost one-third of calls to emergency services suggests that older people may indeed only call GPOOH when urgently ill, but referral to A&E is not routine for older callers.

### Strengths and limitations

Data entered by care providers were incomplete; however, this is the first study to look at how calls for older people are managed within GP out-of-hours cooperatives. This is particularly important given the growing older population and the need for more evidence to support the development of community care and the allocation of resources.

### Interpretation within the context of the wider literature

These findings stand in contrast with previous Irish research that found no significant age differences between the rates of use of GP office visits, outpatient services or emergency room attendance, between those in their 70s and those over 80 years of age [24]. Indeed, despite a 28% prevalence of disability or limitations in activities of daily living (ADL) functioning, The Irish Longitudinal Database on Ageing (TILDA) found that those over 80 years and in poor health were the least likely to use outpatient services, or be admitted to hospital (though once admitted they have longer stays), yet 43% of all GPOOH calls over age 65 were for people over 80 years of age [24].

It has been shown elsewhere that older people choose A&E over GPOOH because they have accurately assessed the urgency of their health-care need; because the barriers to accessing and using GPOOH may result in delayed help-seeking until A&E is required, and because they expect to be referred to A&E by the GPOOH service [12, 14]. The low percentage of callers categorized as Emergency at the initial call would imply that older callers are using the GPOOH for routine health matters rather than urgent or emergency concerns. However, this is also at variance with reports by older people that they would have to be 'nearly dying' before they would call GPOOH [12], a position borne out by the evidence of almost half of calls from older people categorized as Urgent and the rate of GPOOH referrals to A&E or ambulance services, often the most appropriate course of action, considering available service alternatives [14, 21].

### Implications for policy, practice and research

Call urgency classification is intended to support clinicians to provide appropriate levels of care within reasonable time frames and can also inform resource allocation and service policy, but only if data entry is consistent and accurate. Absence of updated priority classification data, when callers exit the service, prevented deeper analysis of the progression of call classification. In a service experiencing resource pressures, it is reasonable to accept the explanation for inconsistent data entry because case classification updates have a lower priority

**Table 2** GPOOH care level received by call sample

	Nurse triage	Doctor triage	Home visit	Treatment centre	Total
65–69 years	104	10	19	66	$n=199$ , 26%
70–74 years	30	6	22	49	$n=107$ , 14%
75–79 years	47	13	20	54	$n=134$ , 17%
80–84 years	36	12	41	54	$n=143$ , 19%
85+ years	50	19	94	24	$n=187$ , 24%
Total	267 (35%)	60 (8%)	196 (25%)	247 (32%)	$n=770$ , 100%

than the provision of timely quality care. Nonetheless, how effectively priority definitions are applied within the service may be worth further study, not only in terms of broad service planning and the potential to map the relationship between GPOOH referral rates and A&E services, but also how it relates to the way stakeholders understand the purpose and function of GPOOH.

The World Health Organization (WHO) has clearly stated that access to emergency and primary care (including GPOOH) is critical for older people, not only during the COVID-19 pandemic but beyond [23]. The older old, with greater susceptibility to illness and disability including high numbers with multi-morbidities, are expected to place greater demands on services at all levels [17]. Conditions common in older age, and the medications taken to address them, can contribute to poor sleep patterns. Sleep disturbances, also linked with stress and anxiety, can in turn exacerbate illness symptoms and increase anxiety, especially when experiencing symptoms at night [25]. It is, therefore, to be expected that older callers may be anxious for a rapid care response when calling GPOOH, if they have waited as long as possible before making the call, a position reflected in high call numbers between 6 p.m. and 8 a.m. and the rate of Urgent call classification.

GPOOH is intended to provide urgent, not emergency, medical care when a patient is unable to wait until the next surgery day to see their own GP. Yet, older people avoid 'bothering the doctor' until symptoms become alarming, severe or unmanageable, and the prospect of an extended wait to see their own doctor would be too onerous, before calling GPOOH [12, 13, 26]. Due to pressures on primary care resources, however, an appointment with the GP is rarely available the next business day, and a person who becomes ill on Friday is unlikely to gain an appointment with his/her GP before the following Tuesday or Wednesday. This can be even longer after a bank holiday weekend. Fear of COVID-19 contributed to generalized reluctance to seek medical help for health concerns [27], a factor with potential to compound the reluctance of older people to seek medical care out of hours. The impact of the COVID-19 pandemic on regular GP appointment availability, or willingness of older people to visit their GP or GPOOH, has yet to be studied.

Finally, older people who live in the community, while often considering a home visit warranted if they are ill enough to call for a doctor out of hours, do not anticipate that such a visit will be forthcoming [12]. However, expectations that home visits are unavailable are not borne out in the data, with a quarter of older callers seen at home, particularly the older old. Greater awareness by older people in the community, of the availability and likelihood of a home visit, could in turn remove one barrier to seeking appropriate out-of-hours care. Furthermore, evidence that home visits are made when necessary should serve to enhance trust that the system is patient centred, ensuring the most appropriate level of care is provided. Such reassurance for older people may be warranted particularly during and after the COVID-19 pandemic period.

## Conclusion

With 27% of those over 65 years currently living alone, 24-h availability of GP services is essential for people to remain living at home in their communities [28, 29]. However, GPOOH services are virtually invisible in the academic literature, policy documents and public discourse [30]. Older people face a significant risk of developing severe illness if infected by the coronavirus [23]. As in previous findings, it is also clear from the data presented in this paper that older people are more likely to rely on another person to call

GPOOH on their behalf, rather than making the call themselves [12]. Accessing either A&E or GPOOH services, therefore, potentially became further complicated during the pandemic by social distancing protocols and fears of virus transmission, especially should transport be needed from their family or neighbours.

The findings reported here reflect a particular point in time, prior to the COVID-19 pandemic, which is still transforming the health service context today. How the post-pandemic landscape will ultimately influence GPOOH use by older people remains unclear. However, it is encouraging to find that, pre-pandemic, older people had been using the GPOOH service and that, for most, accessing GPOOH resulted in a home visit or referral to A&E, suggesting reported symptoms are taken seriously by GPOOH practitioners. Whether these findings reflect the levels of GPOOH service use expected by health system managers requires further study, especially in the light of a rapidly ageing population combined with the consequences of the COVID-19 pandemic for older people. This study provides a baseline picture against which future GPOOH service use can be measured.

Reassuringly, effective call management and referral systems by the nurse triage and GP team have been identified, with GPOOH functioning as an effective gatekeeper for A&E out of hours. However, the patient-centric nature of current protocols warrants further research, particularly in the light of impending system and resource demands combined with demographic changes and the need for an ongoing effective and accessible GPOOH service for all, to ensure WHO and national public health commitments are met, supporting people to age at home during COVID-19 and beyond.

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## Contributorship

Both authors contributed to the study design. SS conducted the fieldwork and data analysis. Both authors contributed to interpretation of results and writing of the final paper.

## Ethics and other permissions

Ethical approval for this research was granted by the Ethics Review Board at Dundalk Institute of Technology (DkIT) and by the Healthcare Research Advisory Committee (HRAC) of the national Health Service Executive (HSE) in Ireland.

## Data Availability

The data underlying this article were provided by the Health Service Executive (HSE) call centre for Northeast Doctor on Call by permission. Data will be shared on request with permission of the HSE.

## References

1. United Nations (UN). United Nations principles for older persons. Adopted by General Assembly resolution 46/91 on 16 December 1991.

2. Department of Health (DoH). *Positive Ageing Starts Now: The National Positive Ageing Strategy*. Dublin: DoH, 2013.
3. World Health Organisation (WHO). *Global Age-friendly Cities: A Guide*. Geneva: WHO Press, 2007.
4. Egbunike J, Shaw C, Porter A *et al*. Streamline triage and manage user expectations: lessons from a qualitative study of GP out-of-hours services. *Brit J Gen Pract* 2010;**60**:e83–97.
5. Smits M, Huibers L, Oude Bos A *et al*. Patient satisfaction with out-of-hours GP cooperatives: a longitudinal study. *Scand J Prim Health Care* 2012;**30**:206–13.
6. Philips H, Mahr D, Remmen R *et al*. Experience: the most critical factor in choosing after-hours medical care. *Qual Saf Health Care* 2010;**19**:1–8.
7. Campbell L, Roland M, Richards S *et al*. Users' reports and evaluations of out-of-hours health care and the UK national quality requirements: a cross sectional study. *Brit J Gen Pract* 2009;**59**:e8–15.
8. Giesen P, Moll van Charante E, Mokkink H *et al*. Patients evaluate accessibility and nurse telephone consultations in out-of-hours GP care: determinants of a negative evaluation. *Patient Educ Couns* 2007;**61**:131–6.
9. Huibers L, Giesen P, Wensing M *et al*. Out-of-hours care in western countries: assessment of different organisational models. *BMC Health Serv Res* 2009;**9**:105.
10. O'Reilly D, Stevenson M, McCay C *et al*. General practice out-of-hours service, variations in use and equality of access to a doctor: a cross-sectional study. *Brit J Gen Pract* 2001;**51**:625–9.
11. McNamara A, Normand C, Whelan B. *Patterns and Determinants of Health Care Utilisation in Ireland. The Irish Longitudinal Study on Ageing (TILDA)*. Ireland: Trinity College Dublin, 2013.
12. Smith S, Carragher L. Just lie there and die: barriers to access and use of GP out-of-hours for older people in rural Ireland. *Rural Remote Health* 2019;**19**:5088.
13. Foster J, Dale J, Jessop L. A qualitative study of older people's views of out-of-hours services. *Brit J Gen Pract* 2001;**51**:719–23.
14. Fealy G, Treacy M, Drennan J *et al*. Profile of older emergency department attendees: findings from an Irish study. *J Adv Nurs* 2011;**68**:1003–13.
15. Centre for Ageing Research and Development in Ireland (CARDI). *Transport and Rural Ageing*. Dublin: CARDI, 2010.
16. Centre for Ageing Research and Development in Ireland (CARDI). *Focus on Ageing and Access to Health Services*. Dublin: CARDI, 2011.
17. Layte R, Barry M, Bennett K *et al*. Projecting the impact of demographic change on the demand for and delivery of healthcare in Ireland. In: *Research Series 13*. Dublin: Economic and Social Research Institute, 2009.
18. Walsh K, O'Shea E, Scharf T. *Social exclusion and ageing in diverse rural communities: findings of a cross-border study in Ireland and Northern Ireland*. Galway: Irish Centre for Social Gerontology, National University of Ireland Galway, 2012.
19. Storms B, Kucharczyk M, Leydet L *et al*. *What Should an Adequate Old-age Income Entail to Live in Dignity? Learnings from France, Ireland and Poland*. Brussels: Age Platform, European Commission, 2014.
20. Poole R, Gamper A, Porter A *et al*. Exploring patients' self-reported experiences of out-of-hours primary care and their suggestions for improvement: a qualitative study. *Fam Pract* 2011;**28**:210–9.
21. Keizer E, Smits M, Peters Y *et al*. Contacts with out-of-hours primary care for non-urgent problems: patients' beliefs or deficiencies in healthcare? *BMC Fam Pract* 2015;**16**:157.
22. Central Statistics Office (CSO). *Regional Quality of Life in Ireland 2013*. <http://www.socialjustice.ie/sites/default/files/file/CSO/2013-05-22%20-%20Regional%20Quality%20of%20Life%20in%20Ireland%202013.pdf> (21 July 2020, date last accessed).
23. World Health Organization. *Health Care Considerations for Older People During Covid-19 Pandemic*. <https://www.euro.who.int/en/health-topics/health-emergencies/coronavirus-covid-19/technical-guidance/health-care-considerations-for-older-people-during-covid-19-pandemic> (23 July 2020, date last accessed).
24. Barrett A, Savva G, Timonen V *et al*. *Fifty Plus in Ireland 2011: First Results from the Irish Longitudinal Study on Ageing (TILDA)*. Dublin: The Irish Longitudinal Study on Ageing, 2011.
25. Centre for Ageing Research and Development in Ireland (CARDI). *Focus on Sleep and Older People*. Dublin: CARDI, 2014.
26. Cornally N, McCarthy G. Chronic pain: the help-seeking behaviour, attitudes and beliefs of older adults living in the community. *Pain Manag Nurs* 2011;**12**:206–17.
27. Steinman MA, Perry L, Perissinotto CM. Meeting the care needs of older adults isolated at home during the COVID-19 pandemic. *JAMA Intern Med* 2020;**180**:819–20.
28. Central Statistics Office. *Census of Population 2016—Profile 3 an age Profile of Ireland*. <https://www.cso.ie/en/releasesandpublications/ep/p-cp3oy/cp3/agr/> (22 July 2020, date last accessed).
29. Central Statistics Office. *Census 2016 Summary Results*. <https://static.rasset.ie/documents/news/census-2016-summary-results-part-1-full.pdf> (22 July 2020, date last accessed).
30. Collins C, O'Shea MT, Cunniffe J *et al*. Health system changes needed to support people consulting general practice out of hours services in Ireland. *Int J Ment Health Syst* 2018;**12**:56.