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HOspitals and patients WoRking in Unity (HOW R U?): telephone peer support to improve older patients' quality of life after emergency department discharge – a feasibility study

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HOspitals and patients WoRking in Unity (*HOW R U?*): telephone peer support to improve older patients' quality of life after emergency department discharge – a feasibility study

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HOspitals and patients WoRking in Unity (*HOW R U?*): telephone peer support to improve older patients' quality of life after emergency department discharge – a feasibility study

Abstract

Objectives: To ascertain the feasibility and acceptability of the *HOW R U?* program, a novel volunteer-peer post-discharge support program for older patients after discharge from the emergency department (ED).

Design: A multicentre prospective mixed methods feasibility study.

Setting: Two tertiary hospital EDs in metropolitan Melbourne, Australia.

Participants: A convenience sample of 39 discharged ED patients aged 70 years or over, with symptoms of social isolation, loneliness and/or depression.

Intervention: The *HOW R U?* intervention comprised weekly social support telephone calls delivered by volunteer peers for 3 months following ED discharge.

Primary and secondary outcome measures: The primary outcomes were feasibility of study processes, intervention acceptability to participants, and retention in the program. Secondary outcomes were changes in loneliness level (UCLA-3 item Loneliness Scale), mood (GDS-5 item) and health-related quality of life (EQ-5D-5L and EQ-VAS) post-intervention.

Results: Recruitment was feasible, with 30% of eligible patients successfully recruited. Seventeen volunteer peers provided telephone support to patient participants, in addition to their usual hospital volunteer role. *HOW R U?* was well received, with 87% retention in the patient group, and no attrition in the volunteer group.

The median age of patients was 84 years, 64% were female, and 82% lived alone. Sixty-eight percent of patients experienced reductions in depressive symptoms, and 53% experiencing reduced feelings of loneliness, and these differences were statistically significant Patient feedback was positive and volunteers reported great satisfaction with their new role.

Conclusion: *HOW R U?* was feasible in terms of recruitment and retention and was acceptable to both patients and volunteers. The overall results support the potential for further research in this area, and provide data to support the design of a definitive trial to confirm the observed effects.

Trial registration: http://www.anzctr.org.au ACTRN12615000715572

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Strengths and limitations of this study
• This is the first feasibility study of a hospital volunteer-delivered telephone service to support older people with symptoms of social isolation, loneliness and/or depression after discharge from the emergency department. • Recruitment and retention rates support the feasibility of the intervention. • Reductions in loneliness and depressive symptoms support further research to test the intervention in a definitive trial. • This was a relatively small cohort study, hence a randomised controlled trial is required to confirm the observed effects.

INTRODUCTION

Older people presenting to Emergency Departments (EDs) and hospitals have a higher likelihood of social isolation, loneliness and depression [1-3]; all of which are associated with negative health outcomes, functional decline, institutionalisation, mortality and increased hospital use.[4-9]

These risk factors for increased hospital use and poor health outcomes are not routinely screened for during ED attendances or short hospital admissions other than in the research setting. Despite this, ED attendances represent an opportunity to identify older patients who are at risk of further negative health outcomes and increased acute health service use. Targeted management of older people suffering from social isolation, loneliness or depressive symptoms has been shown to be effective in reducing symptoms.[5] It is highly probable that systematic identification of isolation, loneliness and depressive symptoms at the time of ED attendance, with post-discharge support, will help combat these negative consequences and diminish this important public and individual health burden.

Peer support is the '*provision of knowledge, experience, emotional or practical help by someone sharing common characteristics'* [41]. Peer support can be used with patients transitioning from hospital to home to enhance quality of life. This definition falls within the social support model, and postulates that social relationships promote health and well-being; thus peer support is hypothesised to reduce feelings of social isolation and loneliness, thereby improving well-being [10] .

Peer support is provided by a person sharing common characteristics (e.g. age, gender, socio-economic status, ethnicity, or experience of acute illness and hospitalisation). Equivalent 'status' between peer and patient is a feature of peer support that facilitates a high level of empathy delivered in a non-confrontational manner [11]. Peers may be hospital volunteers who are trained to support and listen, but not to give medical advice or judgement. This non-medical status helps overcome any reluctance that patients may have in discussing feelings of loneliness

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or isolation; thus helping to bridge the gap between patients and health professionals [12, 13]. Peer support can be delivered via home visits, group meetings or telephone calls.

The aim of this study was to test the feasibility and acceptability of *HOspitals and patients WoRking in Unity* (*HOW R U?*), a post-discharge, telephone peer support intervention delivered by hospital volunteers to older community-dwelling patients with feelings of social isolation, loneliness, or depression.

METHODS

Design, setting and participants

This was a pragmatic prospective mixed methods feasibility study conducted with a cohort of patients following discharge home from the EDs of two tertiary hospitals. The Alfred and Cabrini Hospitals provide public and private healthcare in metropolitan Melbourne, respectively. Participants were community-dwelling patients aged 70 years or more, who attended The Alfred ED between November 2015 and March 2016; and Cabrini ED between March and July 2016. Patients were recruited on weekdays throughout the study period by research nurses. All participants gave written informed consent. The study was registered at http://www.anzctr.org.au, registry number ACTRN12615000715572.

Eligible patients had symptoms of social isolation, loneliness and/or depression using the Social Isolation Index (SII≥3), [14] 3-item Loneliness Scale (UCLA-3≥6), [15] and Geriatric Depression Scale – 5 item (GDS-5≥2) [16].

Patients were excluded if they were triaged as category 1 level of urgency on the Australasian Triage Scale; required surgery; lived in an aged care facility; were receiving end-of-life care; had a confirmed diagnosis of dementia or severe mental illness such as psychosis or schizophrenia; had a moderate-severe cognitive impairment using the Mini-Mental State Examination (MMSE<20); [17] or were unable or unwilling to communicate by telephone.

Sample size

A sample size of 50 participants across the two sites was nominated, to examine feasibility of study processes and intervention acceptability.

HOW R U? intervention

The intervention, volunteer peer training program and risk management strategies were described in full in the study protocol. [18] In summary, *HOW R U?* comprised:

- screening by nurses for feelings of social isolation, loneliness and depression at the time of hospital attendance;
- peer support delivered by a trained hospital volunteer through weekly telephone calls, within 72 hours of discharge home, for up to 3 months; and

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- referral for ongoing support by community-based services as required at study end.

Data collection

Biosociodemographic and health and social care services use data were collected, alongside measurement of social isolation, loneliness, depressive symptoms and health-related quality of life at the time of hospital attendance and at the 3 months study end point.[18] Feasibility of study processes including recruitment and retention in the program were assessed using study records. Acceptability of the intervention was determined at conclusion of the peer support telephone intervention through in-depth semi-structured telephone interviews with patient participants; and through focus groups with volunteer peer participants. Fidelity of the intervention delivery was determined by reviewing the weekly telephone activity logs maintained by the volunteer peers, and also through observation of a proportion of peer support calls.

Analysis

Acceptability of the intervention by the target patient population was measured by the rate of recruitment and retention in the intervention, and also through feedback interviews. Acceptability to volunteer peers was measured using retention rates and feedback obtained in focus groups. Interview and focus group data were audio-recorded and transcribed.

Social isolation, loneliness, depressive symptoms and health-related quality of life scores were compared before and after the intervention, using paired t-tests with a significance level of p=0.05.

RESULTS

This study enabled us to develop all study resources, materials and training programs; test the feasibility of study processes; and determine acceptability of the intervention to patients and volunteers. We recruited 17 volunteer peers and 39 patient participants. Volunteers were all aged over 50 years and 69% were women. The median age of patient participants was 84 years, 64% were women, and 84% of participants lived alone.

Feasibility of study processes

Volunteers were invited by their Hospital Volunteer Services Manager to participate in the study. All volunteer participants attended a half-day *HOW R U?* peer support training program, conducted at their respective hospital. Feedback about the first hospital's *HOW R U?* orientation / training program and resources enabled refinement prior to the second hospital's session.

Recruitment processes in the ED, including eligibility screening, were feasible, with 30% of eligible patients successfully enlisted across the two sites.

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Intervention acceptability and fidelity

The intervention was feasible and acceptable from the volunteers' point of view, with most able to take on 3 participants in addition to their usual hospital volunteer roles. There was no volunteer attrition over the study period. Weekly monitoring of telephone activity logs indicated intervention fidelity. Risk management procedures and levels of support were reported to be appropriate, with one volunteer reporting concerns about a single patient participant in accordance with the study protocol. The *HOW R U?* volunteers showed great satisfaction with this new role, commenting that *'it was (a) very rewarding (experience)' (V8).*

The intervention was acceptable to patient participants, with 34 completing the program, representing an 87% retention rate. According to the feedback, the telephone call regime and call format were reported to be appropriate:

- *'it is empowering have someone to talk to when you are down and know that you are not alone'(P26)*
- *'after discharge is when something like this is really helpful, especially if you're on your own (P5)*
- *'felt that I could confide in my volunteer'(P21)*
- *'telephone calls are a good way to receive social support without having to go out' (P9)*
- *'my volunteer (peer) was supportive and understanding'(P37)*

Secondary outcomes

At the end of the 3-months study, it was observed that:

- 53% of participants experienced a reduction in the level of loneliness:
  pre- and post- mean *UCLA 3-item* scores (standard deviation, SD) 5.76 (SD 1.84) and 4.59 (SD 1.62), respectively (t=3.32, *p*=0.002);
- 68% of participants experienced fewer depressive symptoms:
  pre- and post- mean *GDS 5-item* scores 2.15 (SD 1.21) and 1.03 (SD,1.22), respectively (t=4.77, *p*=0.000)
- while 59% of participants experienced an increase in health-related quality of life, the difference between mean *EQ VAS* scores pre- and post- intervention was not significant:
  pre- and post- mean EQ VAS scores 57.85 (SD 26.02) and 65.44 (SD=20.13), respectively (t=-1.58, *p*=0.124)

Discussion

This study indicated that *HOW R U?* was feasible and acceptable to patients and volunteers. Our results also suggested that a hospital volunteer-delivered telephone service might reduce levels of loneliness and symptoms of depression in older patients after hospital discharge; hence further research with a comparative controlled trial is warranted.

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The overall 30% recruitment rate was reassuring, given the challenges associated with acute illness or injury and the fast-paced nature of the ED environment; [19] as well as the recognised stigma with seeking or receiving support in older populations. [20] Recruitment sessions were limited to 4 hour time periods, due to resource constraints for this feasibility study. The target of 25 patients was met at the Alfred, however recruitment was terminated early at Cabrini due to the majority of older patients being admitted for time periods greater than 72 hours.

The rate of patient retention in *HOW R U?* was promising, possibly in part due to the targeted cohort's characteristics, the supportive non-intrusive nature of the intervention which enabled relative anonymity and increased privacy over the phone, [21] and commencement within 72 hours of discharge.

The positive feedback was encouraging, and is in common with that reported by the UK *Call in Time* telephone 'befriending' service for older people. Evaluation of this service indicated a major impact on quality of life, with participants reporting that they felt a sense of belonging, that life was worth living and they valued knowing that *'there's a friend out there'*. [22] This resonates with comments received from *HOW R U?* participants.

Social isolation, loneliness and depressed mood are prevalent amongst older people living in the community, with 12% feeling socially isolated;[23] 50% reporting loneliness; [24, 25] and depressive feelings in up to 20%.[26] Self-reported rates probably *under-represent* true levels because of an associated stigma amongst older people. [26] Therefore older patients with loneliness or depressive feelings are highly likely not to be identified, [27] reducing the opportunity for appropriate support to be implemented in the community.

Older people presenting to ED are at an increased risk of feeling socially isolated, lonely or depressed, [28] which are associated with increased re-attendance [29] and negative health outcomes such as early mortality, suicide, dementia and stroke.[30] These consequences have far-reaching public health impacts in terms of reduced quality of life and increased hospital use. Furthermore, with population ageing, it is likely that the number of older people at risk of social isolation and loneliness will continue to grow, as will their rates of ED use. The ED visit provides an opportunity to systematically identify social isolation, loneliness or depressive symptoms. If proven effective, implementation of peer support through *HOW R U?* should help combat the associated deleterious consequences, thereby diminishing this important public health and individual burden.

HOW R U? has the potential to reduce symptoms of depression, loneliness and social isolation amongst vulnerable older people, as well as improve quality of life. Volunteers represent a significant adjunct resource for meeting some of the health and social care service needs of our more vulnerable older population. Additional benefits include the positive effects that the act of meaningful volunteering has on the peer supporter, including a positive correlation between volunteering and

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perceived health, and a negative correlation with depression in older volunteers [31]. Maintenance of an effective high quality volunteer service requires professional staff to coordinate and manage recruitment, training, and the provision of day-to-day supervision, support and oversight; however the use of volunteers in hospitals has been shown to be cost-effective alongside increased levels of patient satisfaction [32]. Our qualitative and quantitative findings will now inform the design of a future randomised controlled trial and program evaluation.

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STUDY PROTOCOL

Hospitals and Patients

wo**r**king in **u**nity

FEASIBILITY OF A TELEPHONE SUPPORT SERVICE FOR OLDER PATIENTS

TO IMPROVE QUALITY OF LIFE

AFTER DISCHARGE FROM THE EMERGENCY DEPARTMENT

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2. FUNDER

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- Alfred Health

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55 Commercial Road
Melbourne, 3004

Cabrini Hospital – Emergency Department
183 Wattletree Road
Malvern, 3144

4. PROJECT SUMMARY

Older people are disproportionately represented in private and public Emergency Departments (EDs) and hospitals.[1-3] Many lack social support and have symptoms of loneliness, social isolation, and/or depression; [4-6] all of which are associated with negative health outcomes, functional decline, institutionalisation, mortality and increased hospital use.[7-10] Up to 56% of community-dwelling ED patients feel socially isolated [11] and 24% have depressive feelings. [12] Social isolation is associated with a four to five-fold increase in the likelihood of early ED re-attendance and admission to hospital. [10] Providing targeted post-discharge telephone support may diminish this significant individual and health system burden.

This pragmatic uncontrolled pilot study will examine the acceptability and feasibility of providing volunteer-peer telephone support for older patients identified in the ED or acute medical ward as being at risk of repeated ED attendance and hospital admission, with the aim of improving their quality of life and reducing their risk of avoidable re-attendance and hospitalisation.

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5. RATIONALE AND BACKGROUND

5.1 INCREASING AMBULANCE AND ED USE BY OLDER PEOPLE AGED 70 YEARS AND OVER

People aged ≥70 years are the highest users of ambulances and EDs,[3 13] and are four times more likely to re-attend the ED within 12 months than those <70 years of age.[2] They are also more likely to be admitted to hospital.[14] Attendance at ED contributes to unsustainable demand for acute hospital care. An ED attendance is described as a sentinel event for an older person,[15 16] with heightened risk of unplanned re-attendance and hospitalisation, functional decline, admission to nursing care homes and death well documented in subsequent months.[4 17 18]

5.2 SOCIAL ISOLATION, LONELINESS AND DEPRESSIVE MOOD AMONGST OLDER ED PATIENTS

Older people aged ≥70 years presenting to ED have a high likelihood of loneliness, social isolation, lack of social support[19 4] or feelings of depression.[20 21] Feeling depressed is associated with higher rates of ambulance use[22] and ED attendance.[23] Social isolation is also associated with a 4-5 fold increase in the likelihood of re-presentation and admission to hospital within 12 months.[10] In addition, feeling sad or depressed is an independent predictor of early and frequent re-attendance to the ED by older patients, after controlling for medical history and diagnosis.[24]

Prevalence estimates of loneliness or depressive feelings in older ED patients range from 16% to 42%.[5] Our research identified that 56% of a community-dwelling older ED cohort felt socially isolated,[11] and 24% had depressive symptoms (unpublished data).[12] This is consistent with another Australian study of ED patients.[25] Loneliness, social isolation and depression are also associated with higher rates of re-hospitalisation.[10]

Changes in family structures and circumstances, and fragmentation of social support networks are possible contributing factors.[26] In addition, current government policies encourage older people to remain living in their own homes, with one in four older Australians living at home alone.[27]

5.3 SOCIAL ISOLATION, LONELINESS AND DEPRESSED MOOD IN OLDER PEOPLE IN THE COMMUNITY

Social isolation, loneliness and depressed mood are distinct entities that are prevalent amongst older community-dwellers, and studies indicate that:

- 17% of older people have less than weekly contact with family, friends or neighbours, and 11% have less than monthly contact [28]
- the television is the main company for 40% of older people [29]
- 12% of the population aged ≥ 65 years feel socially isolated [30]
- loneliness amongst older community dwellers is as high as 50% in the UK and Australia [31 32]
- self-reported older age depression ranges from 6% to 20% in Australian community-dwellers [33]

These self-reported rates probably *under-represent* true levels because of an associated stigma amongst older people that such feelings are a character weakness, and that *"one should be able to cope or pull themselves together".* [33] Therefore older patients with loneliness or depressive feelings are highly likely not to be identified, [34] reducing the opportunity for appropriate support being implemented in the community.

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5.4 IMPACT OF SOCIAL ISOLATION, LONELINESS AND DEPRESSED MOOD ON PHYSICAL AND MENTAL HEALTH

Recent research indicates that social isolation and loneliness are associated with negative health outcomes and lower health-related quality of life: [7 8]

- social isolation and lack of social support have an impact on early mortality that is equivalent to smoking<15 cigarettes/day or being an alcoholic (meta-analysis of 148 studies, N=308,000), with socially connected people 50% more likely to survive than those who are socially isolated over the same time period [35]
- social isolation is associated with excess risk of incident stroke in community-dwellers [36]
- loneliness increases the risk of high blood pressure over a 4-year period [37]
- loneliness is associated with greater risk of cognitive decline and poorer cognitive function in the elderly [38-40] as well as a 64% increased chance of developing dementia [41]
- loneliness is a risk factor for developing depression; [42 43] and together with social isolation is predictive of suicide in older age [44]
- depression and depressive symptoms are associated with an increased risk of incident dementia, in particular Alzheimer's disease and vascular dementia[45]
- people with depressive symptoms have an increased risk of developing type 2 diabetes not explained by use of antidepressants [46]
- amongst older people, depressive symptoms are recognised as an independent risk factor for the development of coronary heart disease and total mortality [45]

5.5 POTENTIAL MECHANISMS BETWEEN LONELINESS, MOOD AND HEALTH

The evidence-base is evolving and mechanisms are yet to be fully elucidated, however it is postulated that social isolation and loneliness affect health through:

- health-related behavioural factors - a greater risk of smoking and physical inactivity; and
- biological processes - a positive association with blood pressure, C-reactive protein, HbA1c and fibrinogen levels has been observed. [47 48]

In summary, the consequences of social isolation, loneliness and depressive symptoms in older people have far-reaching public health impacts in terms of reduced quality of life and increased hospital use. Furthermore, with population ageing, it is likely that the number of older people at risk of social isolation and loneliness will continue to grow, as will their rates of ED use.

5.6 PUBLIC HEALTH IMPACT OF SOCIAL ISOLATION, LONELINESS AND DEPRESSED MOOD

These risk factors for increased hospital use and poor health outcomes are not routinely screened for during ED attendances or short hospital admissions other than in the research setting. This provides an opportunity to identify older patients who are at risk of further negative health outcomes and increased acute health service use. Targeted management of older people suffering from social isolation, loneliness or depressive symptoms has been shown to be effective.[8] It is highly probable that systematic identification at the time of ED attendance, with post-discharge support will help combat these negative consequences, and diminish this important public health and individual burden.

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5.7 A SOLUTION: **Ho**spitals and patients **wo**rking in **u**nity - *'HOW R U?'*

HOW R U? is an innovative telephone support service for community-living older people at risk of avoidable repeat hospital attendance. The intervention will be delivered by experienced hospital-based volunteer-peers.

Theoretical basis: Peer support - the provision of knowledge, experience, emotional or practical help - can be used with patients transitioning from hospital to home to ensure quality of life.[49] Peer support increases well-being through the direct effect model, where peer support affects health outcomes by decreasing feelings of social isolation through the provision of relevant information, encouragement, motivation and reassurance.[50] The social support model also postulates that social relationships promote health and well-being; thus peer support is hypothesised to reduce feelings of social isolation and loneliness, thereby improving well-being. [51]

Peer support is usually provided by a person sharing common characteristics with the patient, such as age, gender, socio-economic status, ethnicity, or the experience of illness. It is characterised by equivalent "status" between peer and patient, [52] facilitating a high level of empathy in a non-confrontational manner. Peers may be volunteers who are trained to support and listen, but not to give medical advice or judgement. Their non-medical status helps to overcome any reluctance that patients may have in discussing feelings of loneliness or isolation; thus helping to bridge the gap between patients and health professionals. [53 54]

Learning from successful peer support programs: Peer support programs are currently used in Australia and overseas to complement and extend formal primary care services for patients with heart disease,[55] diabetes[56] and depression.[57] Meta-analysis indicated that peer support interventions for depressive symptoms were more effective than usual care, and comparable to cognitive behavioural therapy delivered by psychologists in group settings. [57] A Peer Support Program (PSP) for older adults in the USA resulted in decreased levels of depression, improved overall quality of life and health and functioning; and also reduced healthcare service use including ED attendances, admissions to hospital, nursing care facility admissions, and community doctor visits. [58] To our knowledge this is the only program that has measured the impact of a PSP on health service use. Peer support interventions, which can be delivered via telephone calls, home visits and group meetings, are becoming an increasingly important strategy for financially constrained health systems.

Telephone support: The telephone is increasingly used to deliver healthcare advice and support for patients. Many older people have telephone access and are likely to accept telephone-mediated peer support. Telephone-based peer support can be a satisfactory substitute for face-to-face interaction, and many people prefer the relative anonymity and increased privacy of talking on the phone. [59]

Evaluation of the UK *'Call in Time'* telephone 'befriending' service, indicated that it had a positive impact on older people's health and well-being, providing them with a sense of belonging, and *'knowing there's a friend out there'*.[60] This resonates with our current study of older Alfred Hospital ED patients,[12] who verbalised their appreciation for our interest in them following their ED attendance. Likewise Cabrini Hospital ED's nurse-directed safe discharge telephone follow-up is most positively received by patients and families. Telephone help-lines such as *Nurse-On-Call* can provide supportive advice for older people; however they rely on the patient initiating the call. In contrast, *HOW R U* will reach out to patients identified as potentially able to benefit.

Dale et al's Cochrane Review investigated the effects of *peer support telephone calls* for improving physical, psychological, behavioural and other health outcomes. [53] Seven RCTs providing telephone peer support targeting improvements in various health conditions and behaviours were effective in reducing depressive symptoms in new mothers, and in encouraging dietary change in patients after myocardial infarction.

Hospital volunteers as peers: Hospital volunteers are trained to help support patients and families during an acute hospital admission or ED visit, which is, in effect, providing 'peer' support. With additional training and

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support, this volunteer role could be transferred beyond the hospital to provide older community-based patients with telephone peer support and social contact following discharge from the ED or hospital. Care plans with referral/linkage to community services are often instigated prior to ED discharge; however these are largely ineffective, unless *hospital-based telephone follow-up* is included. [61] *HOW R U?* will encourage the uptake of these recommended services.

HOW R U? is an innovative volunteer-peer telephone-based support service designed to support older people with symptoms of social isolation, loneliness and depressive mood. It *builds* on Dale et al's feasibility and acceptability study of telephone peer support.[54] *HOW R U?* comprises routine screening for social isolation, loneliness and depressive symptoms at the time of an ED attendance, with volunteer-peer telephone-support and GP liaison immediately following hospital discharge to the community. *HOW R U?* extends the supportive role of the hospital volunteer beyond the hospital walls into the community setting, and also link with other community initiatives. The aim is to target patients with the risk factors of loneliness, isolation and depressive symptoms, in order to reduce the likelihood of ED re-attendance and admission to hospital in older people. The intervention has been designed in a format with supporting implementation resources (including a training manual) that allow wide transferability should it be proven to be cost-effective.

6. STUDY AIMS

This study will test the feasibility and acceptability of *HOW R U?*, a volunteer-peer telephone-support service designed to support older vulnerable people after hospitalisation with the aim of improving their quality of life and reducing their risk of avoidable re-attendance and hospitalisation.

This pilot study represents the preparatory work for a randomised controlled trial and program evaluation to test the effectiveness of *HOW R U?* compared with usual care in reducing re-attendances and hospitalisations over a 12 month period.

7. OBJECTIVES

A specific objective is to determine whether volunteer-peer telephone support is associated with improvement in mood status and health-related quality of life in older ED patients with symptoms of social isolation, loneliness or depression.

8. HYPOTHESES

Volunteer-peer telephone-support will help reduce symptoms of social isolation, loneliness and depressive feelings, through an improvement in mood and quality of life; and these effects will be associated with a reduction in the rate of return ED visits and hospital re-admissions over time.

Figure 1 summarises the hypothesised effects of *HOW R U?* in older patients with symptoms of social isolation, loneliness and depressive symptoms, after discharge from ED.

Figure 1: Hypothesised effects of *HOW R U*?

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9. STUDY DESIGN

A pragmatic uncontrolled feasibility study of a volunteer-peer telephone-support service (*HOW R U*?) for older patients identified in Emergency Department (ED) or acute medical wards being at risk of repeated ED attendance and hospital admission.

10. STUDY SETTINGS

Participants will be recruited from two EDs, Short-Stay Units (SSUs) and acute medical wards at The Alfred and Cabrini Hospitals, which are large tertiary referral providers of health care that capture public and private hospital patients in the inner south-eastern suburbs of Melbourne.

11. STUDY POPULATION

Fifty community-dwelling men and women aged 70 years and over who attend ED and who provide voluntary informed consent, will be recruited from the ED and acute medical wards at Cabrini and The Alfred Hospitals.

12. ELIGIBILITY CRITERIA

Eligible patients at risk of ED re-attendance and hospital re-admission and meeting the inclusion criteria will be invited to participate.

12.1 INCLUSION CRITERIA

Patients who screen positive for symptoms of social isolation, depression and/or loneliness, with the Social Isolation Index, Geriatric Depression Scale–5 items (GDS-5) and 3-item Loneliness Scale.[62-64]

12.2 EXCLUSION CRITERIA

Patients triaged in ED as category 1 or 2 level of urgency, or requiring surgery; living in nursing care homes; receiving end-of life care or likely to be approaching end-of-life within 12 months using the Supportive Care and Palliative Care Indicators Tool (SPICT) criteria; [65] with moderate to severe cognitive impairment: Mini Mental State Exam (MMSE) [66] with a confirmed diagnosis of dementia or severe mental illness such as schizophrenia or psychosis; or an inability or unwillingness to communicate by telephone.

13. STUDY OUTCOMES

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13.1 DATA

Baseline data will be collected from the patient at the time of initial ED presentation, either in ED or acute medical ward, or by the RA over the telephone within 48 hours, including:

Socio-demographic details including age, gender, contact details, marital status, living conditions (alone/with others), carer status, pet ownership, current use of community services, comorbid health conditions, GP status (regular/group, clinic/none), health service use in previous 12 months (ED / hospital / GP / specialist / allied health professional), GP contact details.

The following measures, which demonstrate good psychometric properties and have been used in older community-dwelling patient research, will be applied:

- Social Isolation Index [64]
- Geriatric Depression Scale – 5 items (GDS-5) [62]: mood
- UCLA – 3 item Loneliness Scale [63]
- EQ-5D-5L: perceived health-related quality of life [67], measuring five levels of severity in the dimensions of mobility, self-care, usual activities, pain/discomfort and anxiety/depression
- EQ VAS: visual analogue scale (0-100) measuring current health-related quality of life state [67]
- Mini Mental State Exam (MMSE)[66]: cognitive function

13.2 PRIMARY OUTCOMES

Evaluation of the acceptability of '*HOW R U?*' will include measurement of how helpful the intervention was to patients and the level of participation and retention in the intervention.

Outcomes will be measured using adaptations of the patient and volunteer experience inventories (PSEI and PVEQ), [68] and analysed using descriptive statistics.

Feedback will also be sought from patients and volunteers regarding the phone call experience and value, views about the intervention, benefits of the intervention, and suggestions to enhance the effectiveness of *HOW R U ?* (frequency of calls, support needs).

13.3 SECONDARY OUTCOMES

Re-assessment of social isolation, loneliness, mood and health-related quality of life will be conducted at the end of the three month intervention, as follows:

- Social Isolation Index [64]
- Geriatric Depression Scale – 5 items (GDS-5) [62]: mood
- UCLA – 3 item Loneliness Scale [63]
- EQ-5D-5L: perceived health-related quality of life [67], measuring five levels of severity in the dimensions of mobility, self-care, usual activities, pain/discomfort and anxiety/depression
- EQ VAS: visual analogue scale (0-100) measuring current health-related quality of life state [67]

Outcome data will be collected over the telephone by the study research assistant immediately following the three month period of weekly volunteer telephone social support.

13.4 MEDIUM- AND LONG- TERM OUTCOMES

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- Development of a randomised controlled trial and program evaluation to test the effectiveness of *HOW R U?* compared with usual care in reducing re-attendances and hospitalisations over a 12 month period.
- To ascertain if *HOW R U?* can reduce:
  - symptoms of loneliness, social isolation and depression in vulnerable elderly people after hospital attendance
  - avoidable return to the ED or hospital

13.5 ANTICIPATED CONTRIBUTION TO IMPROVING PATIENT OUTCOMES

HOW R U? will impact on the health system by:

- Providing hospital outreach to older communities at risk of avoidable hospital admissions
- Obtaining evidence for efficacy of hospital volunteers as providers of social care for the growing elderly population

HOW R U has the potential to

- Reduce demand for emergency health services and free hospital resources for acute care

HOW R U has the potential to improve the health outcomes of vulnerable older people after hospital discharge by:

- Reducing levels of loneliness, social isolation, and depression amongst older age groups

14. STUDY PROCEDURES

14.1 ELIGIBIITY SCREENING AND RECRUITMENT

The study will be conducted in the EDs and acute medical wards in shifts of 4.5 hours, Monday – Saturday mornings.

The study research staff will liaise with the ED allied health team and acute medical ward nurse team leaders at the beginning of each shift to identify potential participants based on the inclusion criteria.

Potential participants will be screened by the study research staff for social isolation, loneliness, and depressed mood as well as for cognitive impairment.

Eligible participants will be invited to participate and provided a verbal description of the study and written plain language statement. Informed consent will be sought at the time of recruitment and confirmed at the first volunteer telephone call to reduce drop-out during the study.

If potentially suitable patients have been discharged from the ED or the acute medical ward, the Research Assistant will follow-up them up by telephone, to discuss the project and seek interest in participation in order to optimise recruitment numbers. Consent to notify the GP of involvement in the study will also be sought from the participant.

Participants will not be recruited until after their medical needs have been addressed. Recruitment personnel

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will be clinicians experienced in the management of patients under duress; thereby respect the patient's needs first and foremost, over and above the participation in this study.

14.2 *HOW R U?* INTERVENTION

HOW R U? is based on the *peer support model*; [53 54] and extends the supportive role of hospital-based volunteers beyond the hospital walls into the community setting. It has been designed in consultation with potential consumers, hospital volunteers and clinicians.

The *HOW R U?* intervention comprises:

- routine screening for social isolation, loneliness and/or depressive feelings in older users of ED at the index ED attendance or hospital admission, followed by
- weekly telephone support calls from a hospital volunteer (peer support person) over 3 months following ED and/or hospital discharge
- GP liaison immediately after ED and/or hospital discharge to the community
- referral to community-based services for ongoing support following the end of the study as needed

An experienced older age hospital-based volunteer will be paired with a patient, matched by their preferred language.

Patients will receive one telephone-support call every week over a three month period (up to 12 calls). The aim of the telephone calls is to provide emotional and social support. The first call will occur within 72 hours of discharge from ED or the acute medical ward.

The phone calls will focus on encouraging and supporting the patient and providing social stimulation and informal guidance about strategies that patients feel would improve their well-being, such as better self-care, and/or social engagement with family, friends or community groups. Each call will be unstructured and patient-directed, however the volunteer will ask the patient to describe any changes since the previous call, the outcomes of any planned actions, and agree on new social goals. This model has been used by social service providers for older people in the community with positive outcomes, [69] but is yet to be trialled in a cohort following hospital discharge.

Any medical issues will be directed to the ED admitting officer at the hospital the participant attended.

14.3 VOLUNTEER TRAINING

All hospital-based volunteers involved in *HOW R U?* have participated in their respective hospital-based volunteer training program. These programs include workshops on:

- confidentiality and privacy
- rights and responsibilities in healthcare
- professional and personal boundaries as a volunteer
- emotions and responses
- stress and self-care and
- communication and listening techniques

In addition, the study volunteers are actively involved in regular provision of *in-hospital* social and emotional support to acutely unwell patients and/or families.

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At study commencement, the *HOW R U?* volunteers will attend a two-hour project orientation session, including

- an overview of peer support
- general information about mental health and ageing
- expectations of their role
- use of empathic listening technique by telephone
- policies and procedures
- confidentiality and boundaries
- risk management strategies regarding potential health concerns including recognition of mood changes, negativity and hopelessness and
- formal and informal community resources available to patients - a manual of community-based services and activities will be provided

The telephone calls will be conducted from the respective hospitals in an area allocated by the Volunteer Services Manager.

HOW R U? volunteers will be provided with a summary of their participants' baseline data collection forms prior to conducting the first phone calls.

In order to understand the impact of the various components of the intervention, telephone activity logs (TAL) will be maintained by the volunteer for each participant. The TAL will record the dates, times and length of each call, and the number of attempts required to make contact with the participant on each occasion. The content of calls made will be described using a simple template. Participant drop-outs and their reasons for doing so will also be recorded on the TAL. Random audits of the telephone calls and the TRF will ensure a standard approach is being used and fidelity of the intervention. The TAL will be stored in a locked filing cabinet in the area allocated for the telephone calls.

In addition, a sample of telephone calls will be audio-taped, (only if dual consent is provided by the participant and the volunteer-peer) to provide validation of the TAL, and to allow analysis of the extent to which the volunteer peers use the skills and guidance provided in the Orientation Manual. This will also inform future modification of the intervention

14.5 SAFETY CONSIDERATIONS

The welfare, rights, dignity and safety of all participants in this study is paramount.

It is not anticipated that *HOW R U?* will cause any specific harm or discomfort, beyond the realms of a social telephone call, such as distress about one's personal situation, being bored or becoming fatigued. However if participants wish to either terminate an individual telephone call or cease their involvement in the study, they may do so at any time, without any interference to any care provided by their treating hospital - the Alfred or Cabrini.

If a volunteer is concerned about the physical or mental health of a participant, the volunteer will liaise directly with the relevant Emergency Physician Co-Investigators (Dr De Villiers Smit, Alfred Hospital ETC; and Dr Debra O'Brien, Cabrini Hospital ED upon study commencement. The concern will then be triaged and the participant's general practitioner will be contacted, as required. The Admitting Officer will then triage the concern and contact the participant's general practitioner, as required. If the volunteer has any other concerns, they will liaise directly with the Principal Researcher, Dr Judy Lowthian, who will then liaise with the Emergency Physician Co-Investigators, as above.

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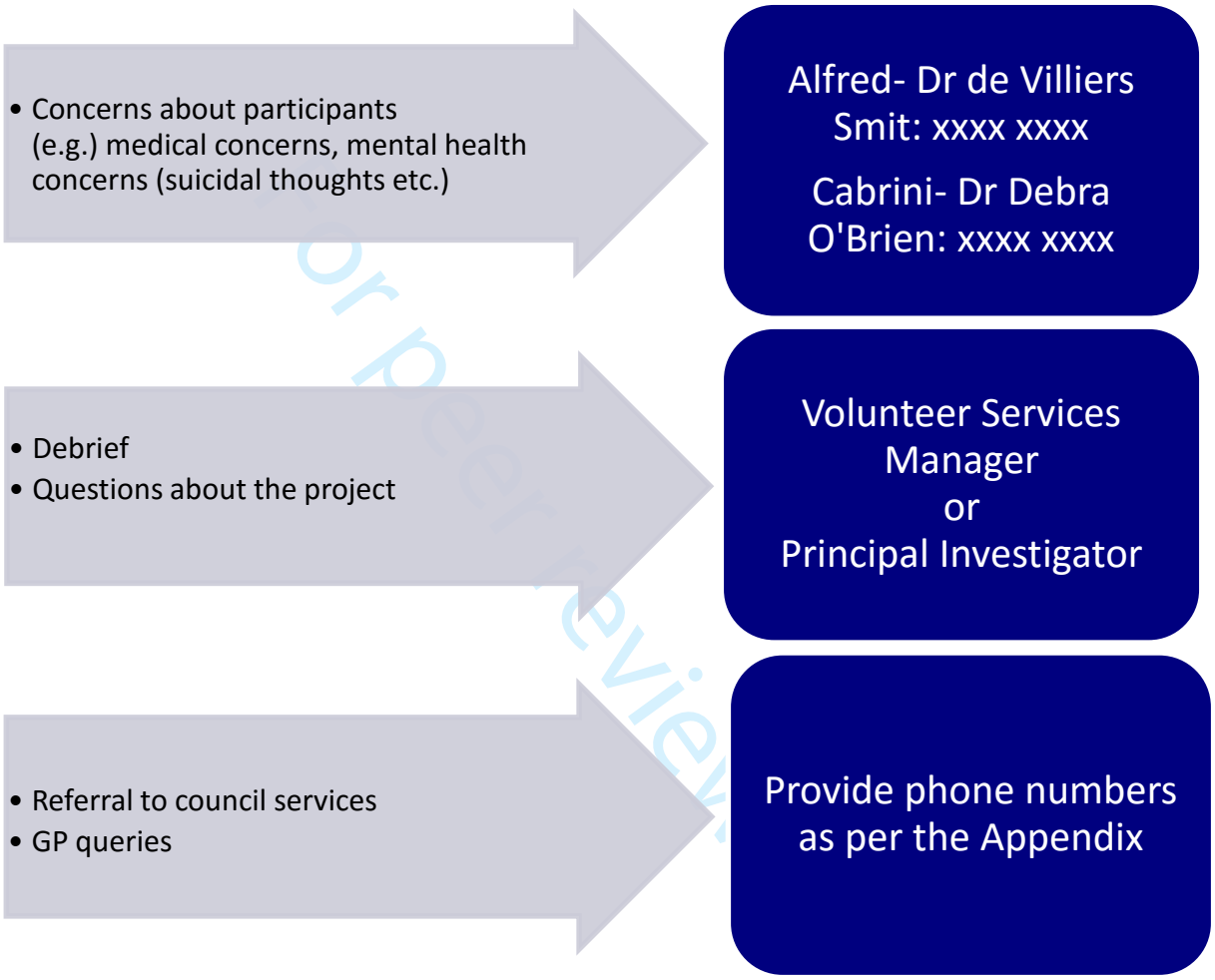
Volunteers will have access to their respective Volunteer Services Manager (Alfred or Cabrini) for advice and support throughout the study. A monthly meeting of volunteers with the Chief Investigator and the Hospital Volunteer Managers will enable debriefing of any issues or concerns that arise.

Who to Call and When for any Physical or Mental Health Concerns



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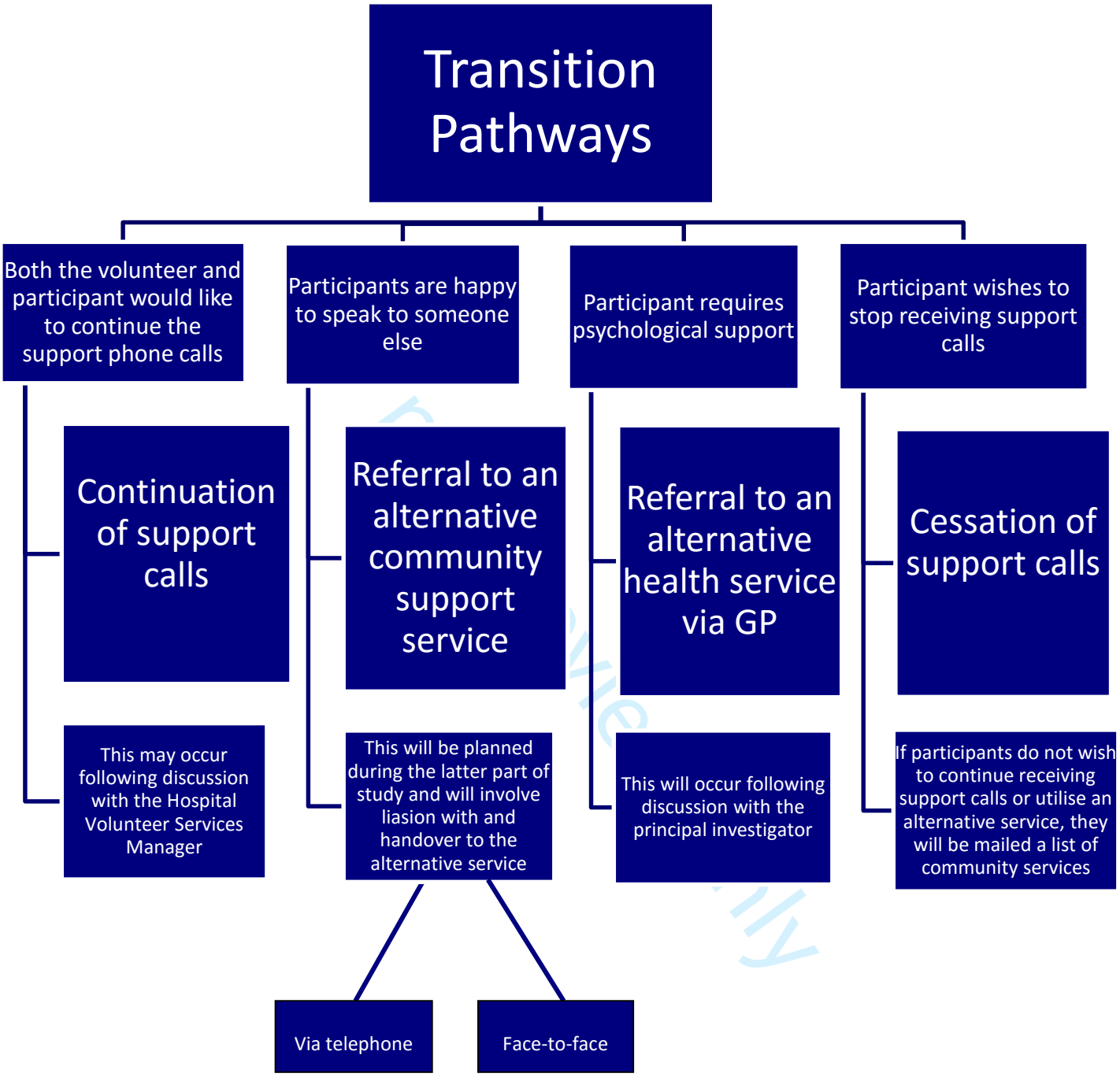
Care Transition at the End of the Study



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15. DATA MANAGEMENT

15.1 DATA HANDLING AND RECORD KEEPING

All data collected at baseline and at the 3 month outcome assessment telephone call will be recorded on a data collection form (DCF), and will be labelled with a project specific ID for each participant.

A telephone record form (TRF) will be maintained by the volunteers for each telephone support call as described above.

After this information is collated and entered onto an excel database, the hard copies of the DCFs and TRFs will be de- identified & stored in a locked filing cabinet in the School of Public Health and Preventive Medicine. The electronic data will not contain any identifiable information, and will be stored on a computer data base, and saved to a hard drive server in a secure area of the School of Public Health and Preventive Medicine, Monash University, Alfred Hospital campus. The database file is protected and accessible only to the researchers directly involved in the analysis. The hard drive file server is backed up daily to a facility nearby, which is available only to the Department IT Manager.

The privacy of individuals is of paramount importance, and all identifiers will be removed prior to the data being analysed in an aggregated form. It will not be possible to identify individuals from the results or any publications or presentations arising from this project.

Storage of all data collected will adhere to Monash University regulations and kept for up to 7 years from the completion data of the project. At that stage electronic data will be deleted and the hard copies will be shredded and disposed of securely.

15.2 QUALITY CONTROL

Following electronic data entry, a random selection of 10% of DCFs and TRFs will reviewed, to monitor of data entry accuracy.

16. STATISTICAL ANALYSIS

This project is a pragmatic uncontrolled feasibility study of 50 participants. Evaluation of the acceptability of *HOW R U* will include measurement of how helpful the intervention was to patients and the level of participation and retention in the intervention. Outcomes will be measured using the patient and volunteer experience inventories (PSEI and PVEQ) [68] and analysed using descriptive statistics. Feedback will also be sought from patients and volunteers regarding the phone call experience and value, views about the intervention, benefits of the intervention, and suggestions to enhance the effectiveness of *HOW R U* (frequency of calls, support needs).

Paired *t*-tests will be used to compare differences in pre- and post- intervention scores of mood, loneliness, quality of life and cognitive state, with a significance level of p=0.05.

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17. ETHICAL, REGULATORY AND ADMINISTRATIVE CONSIDERATIONS

17.1 ETHICAL CONSIDERATIONS

HOW R U will be conducted in full compliance with the principles of the 1964 World Medical Association Declaration of Helsinki as revised in 2013, [70] the 2007 NHMRC Australian Code for the Responsible Conduct of Research as updated in 2014 [71] and the 1996 ICH Guideline for Good Clinical Practice.[72]

Ethical Approval will be sought from the HRECs of Monash University, Alfred Health and Cabrini Health.

Written informed consent will be obtained from all participants as per the Participant Information and Consent Forms (Appendix 1).

Effective research governance and financial management of the project will be supported by Monash University in collaboration with Cabrini Health and Alfred Health. A Project Steering Group representing all investigators, researchers and stakeholders will meet monthly. Project outcomes will be published in the peer-reviewed literature and at conferences, with authorship determined in accordance with the 2007 NHMRC Australian Code for the Responsible Conduct of Research.

17.2 INFORMATION FOR PARTICIPANTS

- Before obtaining consent, all participants – the patient participants and the volunteer peers- must be informed of the objectives and what their participation involves.
- Written informed consent will be obtained as per the Participant Information and Consent Forms (Appendix 1). The forms used must be the current version that has been reviewed and approved by the relevant hospital ethics committee.
- Two copies of the signed and dated Consent Forms are to made, one for the participant and one for the investigators to be stored in the participant's individual file. This Consent Form is to be signed by the participant and by the person who conducted the informed consent discussion.

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17.3 REGULATORY CONSIDERATIONS

17.3.1 FINANCING

The study is supported by Alfred Health as part of the Monash Partners Academic Health Science Centre2014 Seed Funding Initiative.

17.3.2 STUDY REGISTRATION

HOW R U is registered with ANZ Clinical Trials Registry.

Registration number: ACTRN12615000715572

Web address: https://www.anzctr.org.au/Trial/Registration/TrialReview.aspx?id=368803

Universal Trial Number: U1111-1117-4018

Web address: http://www.who.int/ictrp/unambiguous_identification/utn/en/

17.4 ADMINISTRATIVE ORGANISATION

17.4.1 *HOW R U?* STEERING COMMITTEE

The *HOW R U?* Steering Committee will be responsible for the overall management and conduct of the study, including finalising the protocol, approving the operational plan, research governance and financial management.

The committee will be chaired by Judy Lowthian; and will comprise all investigators plus individuals with special content expertise who will be invited to join the steering committee.

The steering committee plans to meet monthly.

17.4.1 PUBLICATION POLICY

Project outcomes will be published in the peer-reviewed literature and at conferences.

Manuscripts and abstracts relating to the *HOW R U?* study must include all investigators using the following guidelines in accordance with the 2007 NHMRC Australian Code for the Responsible Conduct of Research. [70]

A writing group will be established for each publication, from which a lead author will be identified who will be responsible for the initial manuscript draft.

The lead author will be the first author of the publication.

Subsequent authors will be listed according to the amount of input into the writing of the manuscript.

Both clinical sites and the funding agency are to be acknowledged in every publication or presentation.

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Initial drafts and major upgraded manuscripts and abstracts must be circulated to all co-authors when appropriate. Maximum response time for comments and amendments is one week.

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18. STUDY FLOW

'HOW R U?' Study Process
Hospital nurse/volunteer or research staff to screen patients ≥70 years upon ED/acute medical ward arrival for eligibility re: age, community-dwelling, social isolation index, [64]depressive symptoms(GDS-5)[62]/loneliness(3-item Loneliness Scale)[63]
HOW R U project staff to explain trial and ascertain interest, obtain informed consent, then screen cognition (MMSE[66]) & telephone access; and baseline data collection
Discharge from hospital to home
Three month period of weekly peer telephone support by hospital volunteers
Outcome Assessment telephone call to participants by Study RA at 3 months re: primary and secondary outcomes
Outcome assessment interviews with volunteers and patients at end of study re: feasibility and acceptability *– Adaptation of the Peer Support Evaluation Inventories (PSEI & PVEQ) [68]*

19. PROJECT PLAN AND PERFORMANCE TARGETS

6 MONTH TARGETS

- HREC approval from Cabrini Health, Alfred Health, and Monash University
- Recruitment of research personnel
- Submission of Protocol paper for publication
- Development of intervention manual and volunteer-peers training sessions
- Launch study and recruitment (~ three months, with ~ five recruits per week)
- Commence 12 week *HOW R U* Intervention

12 MONTH TARGETS

- Follow-up outcome data collection (~ three months)
- Evaluation: participant patient and volunteer questionnaires
- Write up of results manuscript

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Milestones	**First 6 months**		**Second 6 months**		
Recruit research personnel & volunteers, write protocol	X				
Development of intervention manual, volunteer-peer training sessions	X				
Launch study and recruitment (~three months, ~ five recruits per week)		X			
HOW R U Intervention		X	X		
Follow-up outcome data collection (~three months)			X	X	
Evaluation: participant patient and volunteer questionnaires				X	X
Development of finalised *HOW R U* Intervention					X
Dissemination of results: papers & reports					X

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20. OUTCOMES AND SIGNIFICANCE

The proposed study will provide evidence for the feasibility and acceptability of an inexpensive volunteer-peer telephone support service for older patients at risk of re-attendance to ED. Importantly, '*HOW R U'* has potential to improve quality of life for older people in the community by reducing symptoms of social isolation, loneliness and depressed mood. It will also raise awareness of mental health issues in older people for their GPs, health workers and family, and help redirect older people with symptoms of loneliness, social isolation and depressive mood to appropriate services in a timely way. This will facilitate closer relationships between hospitals and their communities. Secondary benefits include the positive effects that the act of meaningful volunteering has on the peer supporter; with a positive correlation between volunteering and perceived health, and a negative correlation between volunteering and depression in older volunteers. [73] Volunteers also represent a significant adjunct resource for meeting some of the health and social care service needs of our more vulnerable older population.

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21. APPENDIX 1 – PARTICIPANT INFORMATION AND CONSENT FORM

To be inserted once approved by the HREC

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HOspitals and patients WoRking in Unity (HOW R U?): protocol for a prospective feasibility study of telephone peer support to improve older patients' quality of life after emergency department discharge

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ABSTRACT

Introduction: Older people presenting to an emergency department (ED) have a higher likelihood of social isolation, loneliness and depression; which are all associated with negative health outcomes and increased health service use, including higher rates of ED attendance. The *HOW R U?* study aims to ascertain the feasibility and acceptability of a postdischarge telephone support programme for older ED patients following discharge. The intervention, which aims to improve quality of life, will be delivered by hospital-based volunteers.

Methods and analysis: A multicentre prospective uncontrolled feasibility study will enrol 50 community-dwelling patients aged ≥70 years with symptoms of loneliness or depression who are discharged home within 72 hours from the ED or acute medical ward. Participants will receive weekly supportive telephone calls over a 3-month period from a volunteer-peer. Feasibility will be assessed in terms of recruitment, acceptability of the intervention to participants and level of retention in the programme. Changes in level of loneliness (UCLA-3 item Loneliness Scale), mood (Geriatric Depression Scale-5 item) and health-related quality of life (EQ-5D-5L and EQ-VAS) will also be measured postintervention (3 months).

Ethics and dissemination: Research ethics and governance committee approval has been granted for this study by each participating centre (reference: 432/15 and 12-09-11-15). Study findings will inform the design and conduct of a future multicentre randomised controlled trial of a postdischarge volunteer-peer telephone support programme to improve social isolation, loneliness or depressive symptoms in older patients. Results will be disseminated through peer-reviewed journal publication, and conference and seminar presentation.

Trial registration number: ACTRN12615000715572, Pre-results.

Strengths and limitations of this study

- This is the first study to examine volunteer-peer telephone support for discharged older emergency patients.
- We will evaluate (1) feasibility of recruitment, delivery of the intervention and outcome measure ascertainment at study conclusion; (2) intervention acceptability and retention; and (3) changes in level of loneliness, depressive symptoms and quality of life.
- The feasibility study design is not powered to determine intervention effectiveness.
- Results will inform the design and conduct of a future multicentre randomised controlled trial of postdischarge volunteer-peer telephone support to improve health outcomes in older emergency patients.

BACKGROUND

Older people aged ≥70 years are an ever-growing emergency department (ED) population, with attendances accelerating at a rate beyond that expected from demographic change alone.[1 2] They are the highest users of EDs,[1 3] are four times more likely to reattend within 12 months than those<70 years of age;[3] and more likely to be admitted to hospital.[4] This older ED population have a high likelihood of social isolation, loneliness, lack of social support[5 6] and depressive feelings.[7 8] Feeling depressed is associated with higher rates of ambulance use and ED attendance.[9 10] Social isolation is also associated with a fourfold to fivefold increase in the likelihood of representation and admission to hospital within 12 months.[11] In

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addition, feeling sad or depressed is an independent predictor of early and frequent reattendance to ED by older patients, after controlling for medical history and diagnosis.[12] This propensity to reattend must be reduced, as an ED visit is described as a sentinel event in older age,[13] with associated functional decline, admission to nursing care facilities and death in subsequent months.[6 14 15]

Social isolation, loneliness and depressed mood are distinct entities that are prevalent among older community-dwellers, with research indicating that:

- seventeen per cent of older people have contact with family, friends or neighbours less than weekly, and 11% have contact less than monthly;[16]
- television is the main company for 40% of older people;[17]
- twelve per cent of the population aged ≥65 years feel socially isolated;[18]
- loneliness among older community dwellers is as high as 50% in the UK and Australia;[19 20]
- self-reported depression ranges from 6% to 20% in older Australian community-dwellers.[21]

These self-reported rates probably under-represent true levels because of an associated stigma among older people that such feelings are a character weakness, and that 'one should be able to cope or pull themselves together'.[21] Therefore, older patients who feel lonely or depressed are highly likely not to be identified,[22] thus reducing the opportunity for appropriate support being implemented in the community.

Importantly, social isolation and loneliness are associated with negative health outcomes and lower health-related quality of life, as summarised in box 1.[23]

Box 1 Health outcomes associated with social isolation, loneliness and depressive symptoms in older people

Social isolation and lack of social support
- Impact on early mortality is equivalent to smoking >15 cigarettes/day or being an alcoholic, with socially connected people 50% more likely to survive than those who are socially isolated (meta-analysis, 148 observational studies, N=308 849, mean age 64 years);[24]
- Excess risk of incident stroke in community-dwellers.[25]

Loneliness
- Increased risk of high blood pressure over a 4-year period;[26]
- Greater risk of cognitive decline and poorer cognitive function in older age[27–29] as well as a 64% increased chance of developing dementia;[30]
- Predictive of suicide in older age together with social isolation;[31]
- Predictor of functional decline and death.[32]

Depressive symptoms
- Increased risk of incident dementia;[33]
- Development of coronary heart disease and total mortality.[34]

A potential solution

HOspitals and patients WoRking in Unity (*HOW R U?*) is a peer support programme for community-dwelling older people with symptoms of depression, social isolation or loneliness after discharge from the ED. The intervention is innovative as it is delivered by hospital-based volunteers over the telephone.

Peer support is the '*provision of knowledge, experience, emotional or practical help by someone sharing common characteristics*'.[35] The social support model postulates that social relationships promote health and well-being; thus, peer support is hypothesised to reduce feelings of social isolation and loneliness, thereby improving well-being.[36] Peer support is usually provided by a person sharing common characteristics, for example, age, gender, ethnicity or experience of illness. Equivalent 'status' between peer and patient is a feature of peer support that facilitates a high level of empathy delivered in a non-confrontational manner.[37]

The telephone is increasingly used to deliver healthcare advice and support for patients. Most older people have telephone access and are likely to accept telephone-mediated peer support. Telephone-based peer support can be a satisfactory substitute for face-to-face interaction, and many people prefer the relative anonymity and increased privacy of talking over the phone.[38] Evaluation of the UK *Call in Time* telephone befriending service for older people indicated a major impact on their quality of life.[39] Participants reported they felt a sense of belonging, valued knowing 'there's a friend out there' and that the service had a positive impact on their health and well-being, with increased self-confidence and alleviation of previous loneliness and anxiety.

Dale *et al*'s[37] updated Cochrane Review investigated the effects of peer support telephone calls for improving physical, psychological, behavioural and other health outcomes in 14 randomised controlled trials (RCTs) involving 8040 participants. Positive results were found in eight studies, with peer support effective in reducing depressive symptoms in new mothers, supporting breast feeding, promoting mammography screening, improving diabetes outcomes and colonoscopy screening. Peer support programmes have also been shown to reduce healthcare service use by older people, including admissions to hospital, nursing care facility admissions and community doctor visits.[40]

Peers may be volunteers who are trained to support and listen, but not to give medical advice or judgement. Their non-medical status helps to overcome any reluctance that patients may have in discussing feelings of loneliness or isolation.[41] Hospital volunteers are trained to help support patients and families during an acute hospital admission or ED visit, which is a form of 'peer' support. With additional training and support, this volunteer role could be transferred beyond the hospital walls, to provide older patients with telephone peer support and social contact following discharge from the ED.

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OBJECTIVES

The current study will test the acceptability and feasibility of *HOW R U?*, an intervention designed to support older vulnerable patients after hospitalisation. We hypothesise that:

1. it is feasible to enrol older patients aged ≥70 years at the time of ED attendance, execute study procedures and measure functional outcomes in a multicentre observational study of a supportive volunteer-peer telephone intervention, to inform an RCT;
2. *HOW R U?* will be acceptable to patient and volunteer participants; and
3. there will be positive changes in the functional outcomes measured.

METHODS AND ANALYSIS

Study design and setting

HOW R U? is a pragmatic uncontrolled study testing the feasibility of a volunteer-peer telephone-support programme for older patients discharged from two EDs, short-stay units (SSUs) and acute medical wards (AMWs) at The Alfred and Cabrini Hospitals, both of which are large tertiary referral providers of healthcare that service public and private hospital patients in the inner south-eastern suburbs of Melbourne, Australia. Recruitment started at The Alfred in November 2015 and is ongoing at Cabrini until August 2016.

Participants

Community-dwelling men and women aged ≥70 years will be recruited.

Inclusion criteria: Patients who screen positive for symptoms of social isolation, depression and/or loneliness using the Social Isolation Index (SII≥2),[35] Geriatric Depression Scale-5 items (GDS-5≥2)[42] and 3-item Loneliness Scale (UCLA-3≥6);[43] and are discharged home within 72 hours will be eligible for study inclusion.

Exclusion criteria: Patients will be excluded if they are triaged as category 1 level of urgency in ED; require surgery; live in a nursing care home; receive end-of-life care or are likely to be approaching end-of-life within 12 months using the Supportive Care and Palliative Care Indicators Tool criteria;[44] have moderate to severe cognitive impairment using the Mini-Mental State Examination (MMSE<20) or telephone version (ALFI-MMSE<16),[45] a confirmed diagnosis of dementia or severe mental illness such as schizophrenia or psychosis; or are unable or unwilling to communicate in English by telephone.

Determining eligibility for participation will be a multistage process, established by the recruitment staff during medical record review and review of the completed screening questionnaires. Rates of interest, eligibility and consent will be monitored to assess intervention uptake.

Recruitment and consent

Recruitment will take place in the EDs, SSUs and AMWs during weekdays, 08:30–13:00. Study recruitment nurses will liaise with ED allied health and nurse team leaders at the beginning of each shift to identify potential participants based on the inclusion criteria. Participants will not be approached until after their clinical needs have been addressed, as these must be respected first and foremost, over and above their participation in this study. Potential participants will be screened by the recruitment staff for social isolation, loneliness and depressed mood, as well as for cognitive impairment; and eligible patients will be invited to participate. Written informed consent will be sought at the time of recruitment and confirmed at the first volunteer telephone call to reduce drop-out during the study.

If potentially suitable patients have been discharged from the ED or AMW, recruitment nurses will follow them up by telephone, to discuss the project and seek interest in participation in order to optimise recruitment numbers. Consent to notify the general practitioner (GP) of involvement in the study will also be sought from the participant.

Sample size

The study aims to establish the feasibility of recruitment, retention, assessment procedures, execution of the study protocol and testing intervention acceptability and adherence. A sample size of 50 participants across 2 hospital sites was selected, based on the pragmatics of recruitment and the necessities for examining feasibility.[46]

Intervention

The *HOW R U?* intervention has been designed in consultation with potential consumers, hospital volunteers and clinicians. It comprises:

1. routine screening for social isolation, loneliness and/or depressive feelings in older users of the ED at the index ED attendance or hospital admission; followed by
2. weekly telephone support calls from a hospital volunteer (peer support person) for 3 months following ED and/or hospital discharge; and
3. referral to community-based services for ongoing support following the end of the study as needed.

An experienced older age hospital-based volunteer will be paired with a patient, matched by their preferred language. Patients will receive one telephone-support call every week over a 3-month period (up to 12 calls). The aim of the telephone calls is to provide emotional and social support. The first call will occur within 72 hours of discharge from ED, SSU or AMW.

The phone calls will focus on encouraging and supporting the patient and providing social stimulation and informal guidance about strategies that patients feel would improve their well-being, such as better self-care and/or social engagement with family, friends or community groups. Each call will be unstructured and patient-directed; however, the volunteer will ask the patient to describe any changes since the previous call,

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the outcomes of any planned actions and agree on new social goals. This model has been used by social service providers for older people in the community with positive outcomes,[40] but is yet to be trialled in a cohort following hospital discharge.

The telephone calls will be conducted from the respective hospitals in an area allocated by the Volunteer Services Manager. *HOW R U?* volunteers will be provided with a summary of their participants' baseline data collection forms prior to conducting the first phone call.

In order to understand the impact of the various components of the intervention, telephone activity logs will be maintained by the volunteer for each participant. These logs will record the dates, times and length of each call, and the number of attempts required to make contact with the participant on each occasion. The content of the calls made will be described using a simple template. Participant drop-outs and their reasons for doing so will also be recorded on the activity log.

Volunteer Training: HOW R U? volunteer peers will be recruited from the hospital Volunteer Service. All volunteers will have participated in their respective hospital-based volunteer training programme, which include workshops on confidentiality and privacy; rights and responsibilities in healthcare; professional and personal boundaries as a volunteer; emotions and responses; stress and self-care and communication and listening techniques. *HOW R U?* volunteers will be actively involved in the regular provision of inhospital social and emotional support to acutely unwell patients and families.

At study initiation, the *HOW R U?* volunteers will attend a compulsory 4-hour project orientation session, including an overview of peer support; general information about mental health and ageing; expectations of their role; empathic listening techniques; policies and procedures; confidentiality and boundaries; risk management strategies and formal and informal community resources available to patients.

Safety considerations

It is not anticipated that *HOW R U?* will cause any specific harm or discomfort. If participants wish to terminate an individual telephone call or cease their involvement in the study, they may do so at any time, without any interference to any care provided by their treating hospital.

If a volunteer is concerned about the physical or mental health of a participant, the volunteer will liaise directly with the relevant Emergency Physician Coinvestigator. The concern will then be triaged and the participant's GP may be contacted, as required.

Volunteers will have access to their respective Volunteer Services Manager and the Chief Investigator for advice and support throughout the study. A monthly meeting of volunteers with the Chief Investigator and the Volunteer Services Managers will enable debriefing of any issues or concerns that arise.

Care transition at study end: Three main pathways have been developed for preparing participants for care transition from the project. Discussions will start at week 8 of the 12-week intervention, or earlier as needed. Participants will either: continue the telephone support calls if a mutual agreement is reached between the patient and the volunteer; be referred and transferred to an alternative community support programme for support or cease telephone support calls. If any issues arise for participants or volunteers as a result of planning the transition pathway, they will be referred to the Chief Investigator or their respective Volunteer Services Manager. If the participant would like to continue receiving calls from the volunteer but the volunteer has neither the time nor the inclination to continue, we will endeavour to find an alternative volunteer or arrange for continued support through a community-based agency.

Data collection

Baseline data will be collected from the patient during the initial ED visit, either in the ED or AMW, or over the telephone within 48 hours of discharge. Recruitment staff will collect biosociodemographic details, including age, gender, contact details, marital status, residential status, carer status, GP status, GP contact details, pet ownership, use of health services within the previous 12 months, current use of community services and comorbid health conditions. Standardised measurement instruments that demonstrate good psychometric properties and are used in older community-dwelling patient research will be applied, including: Social Isolation Index;[35] UCLA—3-item Loneliness Scale;[43] Geriatric Depression Scale 5-item (GDS-5);[42] EQ-5D-5L, which measures perceived health-related quality of life in the dimensions of mobility, self-care, usual activities, pain/discomfort and anxiety/depression;[47] and the EQ visual analogue scale (EQ VAS), which is a visual analogue scale (0–100) measuring current health-related quality-of-life state.[47] All instruments have been validated for use over the telephone.

Outcomes

Outcome data will be collected at 3 months after the initial ED presentation, via telephone by the Outcome Assessor. The primary outcomes are feasibility of study processes, and acceptability of the intervention to patient and volunteer participants.

This will include measurement of recruitment, assessment procedures, execution of the study protocol, how helpful the intervention was and the level of participation and retention in the intervention. Indepth, semi-structured telephone interviews will be conducted at the end of the intervention, to enable patient participants to speak freely about their experiences and perceptions. A topic guide based on the Peer Support Evaluation

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Inventory[48] will be used to provide prompts of key issues for exploration, including participants' experience of calls and their value, views about the programme, benefits of the programme and suggestions to enhance the effectiveness of *HOW R U?*

Two focus groups will be conducted with volunteer peers at the end of the intervention to allow the opportunity for interaction between volunteer peers to explore their experiences and perceptions. A topic guide based on the Peer Volunteer Experience Questionnaire[48] will be used to provide prompts of key issues for exploration, including the experience of delivering the intervention, the impact of helping the participants on their own emotional well-being and their views about what might be needed to enhance the effectiveness of *HOW R U?*

Secondary outcomes include measurement of changes in perceived social isolation, level of loneliness, depressive symptoms and quality of life as measured by the SII, UCLA-3-item Loneliness Scale, GDS-5, EQ-5D-5L and EQ VAS, after completion of the intervention.

Data management

All data collected at baseline and during the 3-month outcome assessment telephone call will be recorded on a data collection form and will be labelled with a project-specific ID for each participant. The privacy of individuals is of paramount importance, and all identifiers will be removed prior to the data being analysed in an aggregated form. A telephone activity log will be maintained by the volunteers for each telephone call. Random audits of the telephone calls and the activity logs will ensure fidelity of the intervention and that a standard approach is being used. Following electronic data entry, a random selection of 10% of the data collection form and telephone activity log paper-based copies will be reviewed, to monitor data entry accuracy.

Analysis

Feasibility of conducting study processes will be assessed, including the volunteer-peer training programme and materials, eligibility screening and recruitment strategies, telephone call regime, risk management procedures and level of support required by the volunteers.

Intervention acceptability to patients and volunteers will be measured through rates of uptake by eligible patients, and retention in the intervention; alongside patient and volunteer feedback interviews which will consider acceptability from the perspectives of the volunteer and patient participants. Interview data will be analysed using a qualitative thematic framework approach.[49] Data will be systematically scrutinised, charted and sorted into recurrent themes. Patterns and connections within the data will be highlighted in order to develop a framework of themes which will then be applied to the data. Commonalities and variations within and between participant groups (patient and volunteer participants) will be explored. Two researchers will perform the analysis independently, prior to discussing the emerging framework.

Preintervention and postintervention scores of social isolation, mood, loneliness and health-related quality of life will be analysed using paired t-tests to compare any differences with a significance level of p=0.05.

The study findings will inform the design and conduct of a future multicentre RCT of a postdischarge volunteer-peer telephone support programme to improve social isolation, loneliness or depressive symptoms in older patients.

DISSEMINATION

The study Steering Committee will provide overall trial supervision. Written informed consent will be sought from all participants for their participation and the publication of the results. Confidentiality is of paramount importance, and the volunteer-peer supporters are bound by hospital guidelines to maintain professional behaviour, with adherence to patient confidentiality regulations at all times. Participants will be reminded that they are free to withdraw at any time, and that their data will be stored securely and anonymously. All data will be stored on a secure password-protected university server and archived for 7 years after study completion. The results will be disseminated through peer-reviewed journal publication, and conference and seminar presentation, whereby it will not be possible to identify participants.

DISCUSSION

Older people are a significant proportion of ED attendances.[1–3] Many lack social support and have symptoms of loneliness, social isolation and/or depression;[6 50 51] all of which are associated with negative health outcomes, functional decline, institutionalisation, mortality and increased hospital use.[7 11 23 52] Furthermore, with population ageing, it is likely that the number of older people at risk of social isolation and loneliness will continue to grow, as will their rates of ED use.

Social isolation, loneliness and depressive symptoms are not routinely screened for during ED attendances or short hospital admissions other than in research settings. Targeted management of older people suffering from social isolation, loneliness or depressive symptoms is effective with improving symptoms.[52] Therefore, systematic identification of social isolation, loneliness or depressive symptoms at the time of ED attendance alongside postdischarge support should help combat the associated negative consequences, and diminish this important public health and individual burden.

This paper describes the protocol for a pragmatic, observational study to examine the feasibility and acceptability of providing volunteer-peer telephone support for this vulnerable population. Our overarching hypothesis is that volunteer-peer telephone-support will help reduce symptoms of social isolation, loneliness and

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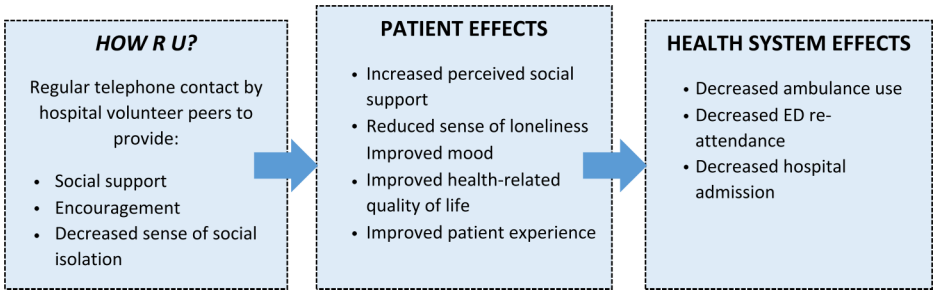

Figure 1 Hypothesised effects of HOW R U?

depressive feelings, through an improvement in mood and quality of life; and these effects will be associated with a reduction in the rate of return ED visits and hospital readmissions (figure 1).

HOW R U? has the potential to improve quality of life for older people in the community. It will also raise awareness of mental health issues in older people by GPs, health workers and family, and help redirect older people with symptoms of depression, loneliness and social isolation to appropriate services in a timely way. This will facilitate closer relationships between hospitals and their communities. Secondary benefits include the positive effects that the act of meaningful volunteering has on the peer supporter; with a positive correlation between volunteering and perceived health, and a negative correlation to depression in older volunteers.[53] Volunteers represent a significant adjunct resource for meeting some of the health and social care service needs of our more vulnerable older population; as well as being inexpensive, which is an important consideration, given the financial constraints of health systems across the world.

The quantitative and qualitative findings of this feasibility study will be used to inform further development of *the HOW R U?* intervention and its mode of delivery, as well the design and development of a future RCT and programme evaluation, which will test the effectiveness of *HOW R U?* compared with usual care in improving quality of life, through improvement of symptoms of depression, social isolation and loneliness; and in reducing reattendances and hospitalisations.

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Contributors JAL conceived and developed the study protocol. JD and CB provided expertise with design of the intervention. All authors contributed to refinement of the study protocol. AL and JAL drafted the manuscript, and all authors approved the final manuscript.

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HOspitals and patients WoRking in Unity (HOW R U?): protocol for a prospective feasibility study of telephone peer support to improve older patients' quality of life after emergency department discharge

Judy A Lowthian, Alyse Lennox, Andrea Curtis, Jeremy Dale, Colette Browning, De Villiers Smit, Gillian Wilson, Debra O'Brien, Cate Rosewarne, Lee Boyd, Cath Garner and Peter Cameron

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STROBE 2007 (v4) Statement—Checklist of items that should be included in reports of *cohort studies*

HOspitals and patients WoRking in Unity (*HOW R U?*):
telephone peer support to improve older patients' quality of life after emergency department discharge – a feasibility study

Section/Topic	Item #	Recommendation	Reported on page #
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	4
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	4
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	5
Objectives	3	State specific objectives, including any prespecified hypotheses	6
Methods			
Study design	4	Present key elements of study design early in the paper	6
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	6
Participants	6	(*a*) Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up	6
		(*b*) For matched studies, give matching criteria and number of exposed and unexposed	-
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	7
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	6-7
Bias	9	Describe any efforts to address potential sources of bias	-
Study size	10	Explain how the study size was arrived at	6
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	7
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	7
		(*b*) Describe any methods used to examine subgroups and interactions	-
		(*c*) Explain how missing data were addressed	-
		(*d*) If applicable, explain how loss to follow-up was addressed	-
		(*e*) Describe any sensitivity analyses	-

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STROBE 2007 (v4) Statement—Checklist of items that should be included in reports of *cohort studies*

Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	7
		(b) Give reasons for non-participation at each stage	-
		(c) Consider use of a flow diagram	-
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	7
		(b) Indicate number of participants with missing data for each variable of interest	8
		(c) Summarise follow-up time (eg, average and total amount)	8
Outcome data	15*	Report numbers of outcome events or summary measures over time	8
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	8
		(*b*) Report category boundaries when continuous variables were categorized	-
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	-
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	-
Discussion			
Key results	18	Summarise key results with reference to study objectives	8
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision.	5
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	8
Generalisability	21	Discuss the generalisability (external validity) of the study results	9
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	3

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.

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HOspitals and patients WoRking in Unity (HOW R U?): telephone peer support to improve older patients' quality of life after emergency department discharge in Melbourne, Australia – a multicentre prospective mixed methods feasibility study

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TITLE PAGE

HOspitals and patients WoRking in Unity (*HOW R U?*): telephone peer support to improve older patients' quality of life after emergency department discharge in Melbourne, Australia – a multicentre prospective feasibility study

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JL conceived, developed the study protocol, and obtained funding for the study. JD and CB provided expertise to help design of the intervention. JL, AL, AC, GW, CR, DS, DO, LB, CS, PC, JD and CB contributed to refinement of the study protocol. JL, AL, AC, GW, CR, DS, DO, LB, CS, PC, JD and CB contributed to the acquisition, analysis, or interpretation of data. JL drafted the manuscript. JL, AL, AC, GW, CR, DS, DO, LB, CS, PC, JD and CB helped review and revise it critically for intellectual content, and approved the final version to be published. JL, AL, AC, GW, CR, DS, DO, LB, CS, PC, JD and CB agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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HOspitals and patients WoRking in Unity (*HOW R U?*): telephone peer support to improve older patients' quality of life after emergency department discharge in Melbourne, Australia – a multicentre prospective feasibility study

ABSTRACT

Objectives: To ascertain the feasibility and acceptability of the *HOW R U?* program, a novel volunteer-peer post-discharge support program for older patients after discharge from the emergency department (ED).

Design: A multicentre prospective mixed methods feasibility study.

Setting: Two tertiary hospital EDs in metropolitan Melbourne, Australia.

Participants: A convenience sample of 39 discharged ED patients aged 70 years or over, with symptoms of social isolation, loneliness and/or depression.

Intervention: The *HOW R U?* intervention comprised weekly social support telephone calls delivered by volunteer peers for 3 months following ED discharge.

Primary and secondary outcome measures: The primary outcomes were feasibility of study processes, intervention acceptability to participants, and retention in the program. Secondary outcomes were changes in loneliness level (UCLA-3 item Loneliness Scale), mood (GDS-5 item) and health-related quality of life (EQ-5D-5L and EQ-VAS) post-intervention.

Results: Recruitment was feasible, with 30% of eligible patients successfully recruited. Seventeen volunteer peers provided telephone support to patient participants, in addition to their usual hospital volunteer role. *HOW R U?* was well received, with 87% retention in the patient group, and no attrition in the volunteer group.

The median age of patients was 84 years, 64% were female, and 82% lived alone. Sixty-eight percent of patients experienced reductions in depressive symptoms, and 53% experiencing reduced feelings of loneliness, and these differences were statistically significant Patient feedback was positive and volunteers reported great satisfaction with their new role.

Conclusion: *HOW R U?* was feasible in terms of recruitment and retention and was acceptable to both patients and volunteers. The overall results support the potential for further research in this area, and provide data to support the design of a definitive trial to confirm the observed effects.

Trial registration: http://www.anzctr.org.au ACTRN12615000715572

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Strengths and limitations of this study
• This is the first feasibility study of a hospital volunteer-delivered telephone service to support older people with symptoms of social isolation, loneliness and/or depression after discharge from the emergency department. • Recruitment and retention rates support the feasibility of the intervention. • Reductions in loneliness and depressive symptoms support further research to test the intervention in a definitive trial. • This was a relatively small cohort study, hence a randomised controlled trial is required to confirm the observed effects.

INTRODUCTION

Older people presenting to Emergency Departments (EDs) and hospitals have a higher likelihood of social isolation, loneliness and depression [1-3]; all of which are associated with negative health outcomes, functional decline, institutionalisation, mortality and increased hospital use.[4-9]

These risk factors for increased hospital use and poor health outcomes are not routinely screened for during ED attendances or short hospital admissions other than in the research setting. Despite this, ED attendances represent an opportunity to identify older patients who are at risk of further negative health outcomes and increased acute health service use. Targeted management of older people suffering from social isolation, loneliness or depressive symptoms has been shown to be effective in reducing symptoms.[5] It is highly probable that systematic identification of isolation, loneliness and depressive symptoms at the time of ED attendance, with post-discharge support, will help combat these negative consequences and diminish this important public and individual health burden.

Peer support is the '*provision of knowledge, experience, emotional or practical help by someone sharing common characteristics*' [11]. Peer support can be used with patients transitioning from hospital to home to enhance quality of life. This definition falls within the social support model, and postulates that social relationships promote health and well-being; thus peer support is hypothesised to reduce feelings of social isolation and loneliness, thereby improving well-being [10] .

Peer support is provided by a person sharing common characteristics (e.g. age, gender, socio-economic status, ethnicity, or experience of acute illness and hospitalisation). Equivalent 'status' between peer and patient is a feature of peer support that facilitates a high level of empathy delivered in a non-confrontational manner [11]. Peers may be hospital volunteers who are trained to support and listen, but not to give medical advice or

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judgement. This non-medical status helps overcome any reluctance that patients may have in discussing feelings of loneliness or isolation; thus helping to bridge the gap between patients and health professionals [12 13]. Peer support can be delivered via home visits, group meetings or telephone calls.

The aim of this study was to test the feasibility and acceptability of *HOspitals and patients WoRking in Unity* (*HOW R U?*), a post-discharge, telephone peer support intervention delivered by hospital volunteers to older community-dwelling patients with feelings of social isolation, loneliness, or depression. If the intervention is feasible and acceptable, the findings will inform design and conduct of a randomised controlled trial and program evaluation.

METHODS

Patient and Public Involvement statement

This study was informed by comments received from patient participants in the Safe Elderly Emergency Discharge (SEED) project. SEED mapped the demographic, clinical, functional and psychosocial profiles of a large cohort (n=959) of older ED patients. The cohort was followed up by telephone over a 6 months' period after discharge home, to determine the risk factors associated with adverse outcomes. [8 9] Many patients reported how much they looked forward to the follow-up calls, with requests for more frequent calls; highlighting their feelings of isolation and loneliness. This led to development of our hypothesis that telephone support could reduce feelings of social isolation, loneliness and depression. Potential patients and hospital-based volunteers were involved in the development of the *HOW R U?* intervention; with volunteers directly involved as research partners in all aspects of the study (GW, CR). Hospital-based volunteers were involved in conduct of this study, including development and publication of the study protocol and this manuscript. [14 14] Patients from the current feasibility and acceptability study have been involved in refinement of study processes and of the intervention for the planned RCT.

Design, setting and participants

This was a pragmatic prospective mixed methods feasibility study conducted with a cohort of patients following discharge home from the EDs of two tertiary hospitals. The Alfred and Cabrini Hospitals provide public and private healthcare in metropolitan Melbourne, respectively. Participants were community-dwelling patients aged 70 years or more, who attended The Alfred ED between November 2015 and March 2016; and Cabrini ED between March and July 2016; and were discharged home from the ED, short-stay observation unit or acute medical ward within 72 hours of arrival. Patients were recruited on weekdays throughout the study period by research nurses. All participants gave written informed consent. The study was registered at http://www.anzctr.org.au, registry number ACTRN12615000715572.

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Eligible patients had symptoms of social isolation, loneliness and/or depression using the Social Isolation Index (SII≥3), [15] 3-item Loneliness Scale (UCLA-3≥6), [16] and Geriatric Depression Scale – 5 item (GDS-5≥2) [17].

Patients were excluded if they were triaged as category 1 level of urgency on the Australasian Triage Scale; required surgery; lived in an aged care facility; were receiving end-of-life care; had a confirmed diagnosis of dementia or severe mental illness such as psychosis or schizophrenia; had a moderate-severe cognitive impairment using the Mini-Mental State Examination (MMSE<20); [18] or were unable or unwilling to communicate by telephone.

Sample size

A sample size of 50 participants across the two sites was nominated, to examine feasibility of study processes and intervention acceptability.

***HOW R U?* intervention**

The intervention, volunteer peer training program and risk management strategies were described in full in the published study protocol. [19] In summary, *HOW R U?* comprised:

- screening by research nurses for feelings of social isolation, loneliness and depression at the time of hospital attendance using the SII [14], UCLA-3 [15] and GDS-5 [16];
- peer support delivered by a trained hospital volunteer through weekly telephone calls, within 72 hours of discharge home, for up to 3 months; and
- referral for ongoing support by community-based services as required at study end.

Data collection

As per the published study protocol paper, ,[19] bio-sociodemographic and health and social care services use data were collected, alongside measurement of social isolation (SII) [14] , loneliness (UCLA-3) [15] , depressive symptoms (GDS-5) [16], and health-related quality of life (EQ-5D-5L and EQ VAS) [20] at the time of hospital attendance and at the 3 months study end point. The primary outcomes were feasibility and acceptability.

Feasibility of study processes including recruitment and retention in the program were assessed using study records. 39 patient experience interviews were conducted at the conclusion of follow-up data collection to determine the acceptability of the intervention. These interviews were undertaken using a topic guide based on the Peer Support Evaluation Inventory [21]. Questions explored participants' perceptions about the frequency and length of the calls, the modality of the intervention, their matched volunteer peers, the level of support provided, and their satisfaction with the overall experience. Fidelity of the intervention delivery was determined by reviewing the weekly telephone activity logs maintained by the volunteer peers, and also through observation of a proportion of peer

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support calls. Secondary outcomes were any measurable changes in levels of perceived social isolation, loneliness, depressive symptoms and quality of life.

Analysis

Acceptability of the intervention by the target patient population was measured by the rate of recruitment and retention in the intervention, and also through analysis of the qualitative interviews. Transcripts were loaded into NVivo (Version 11, QSR International, Doncaster, Victoria) for data management and analysed using a qualitative thematic framework approach [22]. This involved familiarisation with the data and derivation of a framework by noticing concepts within the data and developing themes and sub-themes. Quotes were sorted into categories, which formed the final thematic framework. Data were mapped and interpreted and the framework was applied back to the dataset to ensure all quotes were appropriately organised whilst retaining links to the original data. Two researchers were involved in the development of the framework and resolved differences in opinion through discussion.

Acceptability to volunteer peers was measured using retention rates and feedback obtained in focus groups. Volunteer perceptions are the focus of a separate manuscript.

Social isolation, loneliness, depressive symptoms and health-related quality of life scores were compared before and after the intervention, using paired t-tests with a significance level of p=0.05.

RESULTS

This study enabled us to develop all study resources, materials and training programs; test the feasibility of study processes; and determine acceptability of the intervention to patients and volunteers. We recruited 17 volunteer peers and a convenience sample of 39 patient participants. Volunteers were all aged over 50 years and 69% were women. The median age of patient participants was 84 years, 64% were women, and 84% of participants lived alone. Patient participant baseline demographic characteristics are summarised in Table 1.

Feasibility of study processes

Volunteers were invited by their Hospital Volunteer Services Manager to participate in the study. All volunteer participants attended a half-day *HOW R U?* peer support training program, conducted at their respective hospital. Feedback about the first hospital's *HOW R U?* orientation / training program and resources enabled refinement prior to the second hospital's session.

Recruitment processes in the ED, including eligibility screening, were feasible, with 30% of eligible patients successfully enlisted across the two sites.

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Intervention acceptability and fidelity

The intervention was feasible and acceptable from the volunteers' point of view, with most able to take on 3 participants in addition to their usual hospital volunteer roles. There was no volunteer attrition over the study period. The average number of telephone calls per participant was 8 calls (range 1 – 12 calls), with an average call length of 24 minutes (range 1-60 minutes). Weekly monitoring of telephone activity logs indicated intervention fidelity, with 100% completion rate of the activity log sheets including documentation of the main focus of and topics discussed in each call; agreed social goals for the following week; patient-reported changes since the previous call; and volunteer-peer impression of the participant's emotional state/feelings during each call. All volunteers adhered to the risk management procedures in accordance with the study protocol, with one volunteer reporting concern about a single patient participant to the hospital emergency physician coinvestigator. All volunteers reported that the level of support provided by their Volunteer Service Manager, and the research team was appropriate, .

The intervention was acceptable to patient participants, with 34 completing the program, representing an 87% retention rate. Three main themes were identified in the qualitative data as follows:

Study processes were acceptable to participants

While some participants missed a few calls due to last-minute medical appointments and unexpected visitors, the fact that participants agreed upon the call time the week prior meant that receiving peer support calls was convenient for them. Participants were satisfied with the individually-determined length of their phone calls, with one expressing that *'having someone to talk to for 5-10 minutes is good'* (P13) while others were happy to talk for much longer. Similarly, while some participants would have liked to receive more calls at the conclusion of the intervention, most participants were satisfied with the length of the program. Some also commented on the frequency of the calls and believed that *'once a week was a good amount of calls'* (P17). In terms of the modality of the intervention, while a couple of participants *'would have liked face-to-face'* (P36) support, *most 'liked the convenience of telephone support'* (P1). One participant stated that *'telephone calls are a good way to receive social support without having to go out'* (P2). Another participant liked receiving telephone support because *'even though they knew the voice, the anonymity was good'* (P19).

Supportive relationships developed between participants and volunteer peers

Most participants reported that their volunteer peers were supportive and understanding. One participant stated that they *'felt they could confide in their volunteer'* (P21), while another mentioned that they *'could talk about things that they couldn't talk about with other people'* (P35). Participants reported finding common interests with their volunteer peer in order to build rapport and topics discussed included sport, poetry, films, music,

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cooking and politics. Furthermore, some participants reported *'becoming quite good friends'* (P4) with their volunteer and *'looking forward to the calls'* (P15), demonstrating that it was feasible for participants to develop a supportive relationship with a volunteer in this timeframe.

HOW R U? is addressing a need

A number of participants commented on the potential for *HOW R U?* to fill a need for *'people who are really isolated'* (P23). One participant suggested that *'after discharge is when something like this is really helpful, especially if you're on your own'* (P5). Another participant mentioned that *'it is empowering to have someone to talk to when you are down and know that you are not alone'* (P26). Overall, participants acknowledged that taking an interest in people who may be socially isolated, lonely or showing symptoms of depression can really make a difference.

Secondary outcomes

At the end of the 3-months study, it was observed that:

- 53% of participants experienced a reduction in the level of loneliness:
  pre- and post- mean *UCLA 3-item* scores (standard deviation, SD) 5.76 (SD 1.84) and 4.59 (SD 1.62), respectively (t=3.32, *p*=0.002);
- 68% of participants experienced fewer depressive symptoms:
  pre- and post- mean *GDS 5-item* scores 2.15 (SD 1.21) and 1.03 (SD,1.22), respectively (t=4.77, *p*=0.000)
- while 59% of participants experienced an increase in health-related quality of life, the difference between mean *EQ VAS* scores pre- and post- intervention was not significant:
  pre- and post- mean EQ VAS scores 57.85 (SD 26.02) and 65.44 (SD=20.13), respectively (t=-1.58, *p*=0.124)

DISCUSSION

This is the first study of a hospital volunteer-delivered telephone service designed to support discharged older emergency patients with symptoms of social isolation, loneliness and/or depression. This study indicated that *HOW R U?* was feasible and acceptable to patients and volunteers. Our results also suggested that a hospital volunteer-delivered telephone service might reduce levels of loneliness and symptoms of depression in this patient group. A limitation was that this was a relatively small cohort study in two metropolitan hospital EDs; and it was not powered for these secondary outcomes. Hence further research with a comparative controlled trial is required to confirm the observed effects..

The overall 30% recruitment rate was reassuring, given the challenges associated with acute illness or injury and the fast-paced nature of the ED environment; [23] as well as the recognised stigma with seeking or receiving support in older populations. [24] Recruitment

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sessions were limited to 4.5hour time periods, due to resource constraints for this feasibility study. The target of 25 patients was met at the Alfred, however recruitment was terminated early at Cabrini due to the majority of older patients being admitted for time periods greater than 72 hours.

The rate of patient retention in *HOW R U?* was promising, possibly in part due to the targeted cohort's characteristics, the supportive non-intrusive nature of the intervention which enabled relative anonymity and increased privacy over the phone, [25] and commencement within 72 hours of discharge.

The positive feedback was encouraging, and is in common with that reported by the UK *Call in Time* telephone 'befriending' service for older people. Evaluation of this service indicated a major impact on quality of life, with participants reporting that they felt a sense of belonging, that life was worth living and they valued knowing that *'there's a friend out there'*. [26] This resonates with comments received from *HOW R U?* participants.

Social isolation, loneliness and depressed mood are prevalent amongst older people living in the community, with 12% feeling socially isolated;[27] 50% reporting loneliness; [28 29] and depressive feelings in up to 20%.[30] Self-reported rates probably *under-represent* true levels because of an associated stigma amongst older people. [30] Therefore older patients with loneliness or depressive feelings are highly likely not to be identified, [31] reducing the opportunity for appropriate support to be implemented in the community.

Older people presenting to ED are at an increased risk of feeling socially isolated, lonely or depressed, [32] which are associated with increased re-attendance [33] and negative health outcomes such as early mortality, suicide, dementia and stroke.[34] These consequences have far-reaching public health impacts in terms of reduced quality of life and increased hospital use. Furthermore, with population ageing, it is likely that the number of older people at risk of social isolation and loneliness will continue to grow, as will their rates of ED use. The ED visit provides an opportunity to systematically identify social isolation, loneliness or depressive symptoms. If proven effective, implementation of peer support through *HOW R U?* should help combat the associated deleterious consequences, thereby diminishing this important public health and individual burden.

HOW R U? has the potential to reduce symptoms of depression, loneliness and social isolation amongst vulnerable older people, as well as improve quality of life. Volunteers represent a significant adjunct resource for meeting some of the health and social care service needs of our more vulnerable older population. Additional benefits include the positive effects that the act of meaningful volunteering has on the peer supporter, including a positive correlation between volunteering and perceived health, and a negative correlation with depression in older volunteers [35]. Maintenance of an effective high quality volunteer service requires professional staff to coordinate and manage recruitment, training, and the provision of day-to-day supervision, support and oversight; however the use of volunteers in hospitals has been shown to be cost-effective alongside increased levels of

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patient satisfaction [36]. Our qualitative and quantitative findings will now inform the design of a future randomised controlled trial and program evaluation.

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Table 1: *HOW R U?* participant baseline demographic characteristics

	N=39
Age (years) median (range)	84 (70-100)
Sex	
Female	64%
Cultural background	
Australian born	77%
Living status	
Living alone	82%
Formal/informal care in place	44%
Regular social group attendance	53%
Feelings of social isolation ([*]SII ≥2)	82%
Feelings of loneliness ([^]UCLA-3 ≥6)	65%
Depressive symptoms ([#]GDS-5 ≥2)	77%
Self-rated health: EQ-VAS (average)	59.6

Legend
[*] SII Social Isolation Index; [^] UCLA-3 3-item Loneliness Scale; [#] GDS-5 Geriatric Depression Scale – 5 item

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STROBE 2007 (v4) Statement—Checklist of items that should be included in reports of *cohort studies*

HOspitals and patients WoRking in Unity (*HOW R U?*):
telephone peer support to improve older patients' quality of life after emergency department discharge – a feasibility study

Section/Topic	Item #	Recommendation	Reported on page #
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	4
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	4
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	5
Objectives	3	State specific objectives, including any prespecified hypotheses	6
Methods			
Study design	4	Present key elements of study design early in the paper	6
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	6
Participants	6	(*a*) Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up	6
		(*b*) For matched studies, give matching criteria and number of exposed and unexposed	-
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	7
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	6-7
Bias	9	Describe any efforts to address potential sources of bias	-
Study size	10	Explain how the study size was arrived at	6
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	7
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	7
		(*b*) Describe any methods used to examine subgroups and interactions	-
		(*c*) Explain how missing data were addressed	-
		(*d*) If applicable, explain how loss to follow-up was addressed	-
		(*e*) Describe any sensitivity analyses	-

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STROBE 2007 (v4) Statement—Checklist of items that should be included in reports of *cohort studies*

Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	7
		(b) Give reasons for non-participation at each stage	-
		(c) Consider use of a flow diagram	-
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	7
		(b) Indicate number of participants with missing data for each variable of interest	8
		(c) Summarise follow-up time (eg, average and total amount)	8
Outcome data	15*	Report numbers of outcome events or summary measures over time	8
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	8
		(*b*) Report category boundaries when continuous variables were categorized	-
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	-
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	-
Discussion			
Key results	18	Summarise key results with reference to study objectives	8
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision.	5
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	8
Generalisability	21	Discuss the generalisability (external validity) of the study results	9
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	3

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.

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HOspitals and patients WoRking in Unity *(HOW R U?)*: telephone peer support to improve older patients' quality of life after emergency department discharge in Melbourne, Australia – a multicentre prospective feasibility study

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Keywords:	post-discharge, gerontology, social isolation, volunteer-peer, telephone-support

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TITLE PAGE

HOspitals and patients WoRking in Unity (*HOW R U?*): telephone peer support to improve older patients' quality of life after emergency department discharge in Melbourne, Australia – a multicentre prospective feasibility study

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JL conceived, developed the study protocol, and obtained funding for the study. JD and CB provided expertise to help design of the intervention. JL, AL, AC, GW, CR, DS, DO, LB, CS, PC, JD and CB contributed to refinement of the study protocol. JL, AL, AC, GW, CR, DS, DO, LB, CS, PC, JD and CB contributed to the acquisition, analysis, or interpretation of data. JL drafted the manuscript. JL, AL, AC, GW, CR, DS, DO, LB, CS, PC, JD and CB helped review and revise it critically for intellectual content, and approved the final version to be published. JL, AL, AC, GW, CR, DS, DO, LB, CS, PC, JD and CB agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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HOspitals and patients WoRking in Unity (*HOW R U?*): telephone peer support to improve older patients' quality of life after emergency department discharge in Melbourne, Australia – a multicentre prospective feasibility study

ABSTRACT

Objectives: To ascertain the feasibility and acceptability of the *HOW R U?* program, a novel volunteer-peer post-discharge support program for older patients after discharge from the emergency department (ED).

Design: A multicentre prospective mixed methods feasibility study.

Setting: Two tertiary hospital EDs in metropolitan Melbourne, Australia.

Participants: A convenience sample of 39 discharged ED patients aged 70 years or over, with symptoms of social isolation, loneliness and/or depression.

Intervention: The *HOW R U?* intervention comprised weekly social support telephone calls delivered by volunteer peers for 3 months following ED discharge.

Primary and secondary outcome measures: The primary outcomes were feasibility of study processes, intervention acceptability to participants, and retention in the program. Secondary outcomes were changes in loneliness level (UCLA-3 item Loneliness Scale), mood (GDS-5 item) and health-related quality of life (EQ-5D-5L and EQ-VAS) post-intervention.

Results: Recruitment was feasible, with 30% of eligible patients successfully recruited. Seventeen volunteer peers provided telephone support to patient participants, in addition to their usual hospital volunteer role. *HOW R U?* was well received, with 87% retention in the patient group, and no attrition in the volunteer group.

The median age of patients was 84 years, 64% were female, and 82% lived alone. Sixty-eight percent of patients experienced reductions in depressive symptoms, and 53% experiencing reduced feelings of loneliness, and these differences were statistically significant Patient feedback was positive and volunteers reported great satisfaction with their new role.

Conclusion: *HOW R U?* was feasible in terms of recruitment and retention and was acceptable to both patients and volunteers. The overall results support the potential for further research in this area, and provide data to support the design of a definitive trial to confirm the observed effects.

Trial registration: http://www.anzctr.org.au ACTRN12615000715572

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Strengths and limitations of this study
• This is the first feasibility study of a hospital volunteer-delivered telephone service to support older people with symptoms of social isolation, loneliness and/or depression after discharge from the emergency department. • Recruitment and retention rates support the feasibility of the intervention. • Reductions in loneliness and depressive symptoms support further research to test the intervention in a definitive trial. • This was a relatively small cohort study, hence a randomised controlled trial is required to confirm the observed effects.

INTRODUCTION

Older people presenting to Emergency Departments (EDs) and hospitals have a higher likelihood of social isolation, loneliness and depression [1-3]; all of which are associated with negative health outcomes, functional decline, institutionalisation, mortality and increased hospital use. [4-9]

These risk factors for increased hospital use and poor health outcomes are not routinely screened for during ED attendances or short hospital admissions other than in the research setting. Despite this, ED attendances represent an opportunity to identify older patients who are at risk of further negative health outcomes and increased acute health service use. Targeted management of older people suffering from social isolation, loneliness or depressive symptoms has been shown to be effective in reducing symptoms.[5] It is highly probable that systematic identification of isolation, loneliness and depressive symptoms at the time of ED attendance, with post-discharge support, will help combat these negative consequences and diminish this important public and individual health burden.

Peer support is the '*provision of knowledge, experience, emotional or practical help by someone sharing common characteristics*. [10] Peer support can be used with patients transitioning from hospital to home to enhance quality of life. This definition falls within the social support model, and postulates that social relationships promote health and well-being; thus peer support is hypothesised to reduce feelings of social isolation and loneliness, thereby improving well-being. [11]

Peer support is provided by a person sharing common characteristics (e.g. age, gender, socio-economic status, ethnicity, or experience of acute illness and hospitalisation). Equivalent 'status' between peer and patient is a feature of peer support that facilitates a high level of empathy delivered in a non-confrontational manner [12]. Peers may be hospital volunteers who are trained to support and listen, but not to give medical advice or

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judgement. This non-medical status helps overcome any reluctance that patients may have in discussing feelings of loneliness or isolation; thus helping to bridge the gap between patients and health professionals [10 13]. Peer support can be delivered via home visits, group meetings or telephone calls.

The aim of this study was to test the feasibility and acceptability of *HOspitals and patients WoRking in Unity* (*HOW R U?*), a post-discharge, telephone peer support intervention delivered by hospital volunteers to older community-dwelling patients with feelings of social isolation, loneliness, or depression. If the intervention is feasible and acceptable, the findings will inform design and conduct of a randomised controlled trial and program evaluation.

METHODS

Patient and Public Involvement statement

This study was informed by comments received from patient participants in the Safe Elderly Emergency Discharge (SEED) project. SEED mapped the demographic, clinical, functional and psychosocial profiles of a large cohort (n=959) of older ED patients. The cohort was followed up by telephone over a 6 months' period after discharge home, to determine the risk factors associated with adverse outcomes. [8 9] Many patients reported how much they looked forward to the follow-up calls, with requests for more frequent calls; highlighting their feelings of isolation and loneliness. This led to development of our hypothesis that telephone support could reduce feelings of social isolation, loneliness and depression. Potential patients and hospital-based volunteers were involved in the development of the *HOW R U?* intervention; with volunteers directly involved as research partners in all aspects of the study (GW, CR). Hospital-based volunteers were involved in conduct of this study, including development and publication of the study protocol and this manuscript.[14] Patients from the current feasibility and acceptability study have been involved in refinement of study processes and of the intervention for the planned RCT.

Design, setting and participants

This was a pragmatic prospective mixed methods feasibility study conducted with a cohort of patients following discharge home from the EDs of two tertiary hospitals. The Alfred and Cabrini Hospitals provide public and private healthcare in metropolitan Melbourne, respectively. Participants were community-dwelling patients aged 70 years or more, who attended The Alfred ED between November 2015 and March 2016; and Cabrini ED between March and July 2016; and were discharged home from the ED, short-stay observation unit or acute medical ward within 72 hours of arrival. Patients were recruited on weekdays throughout the study period by research nurses. All participants gave written informed consent. The study was registered at http://www.anzctr.org.au, registry number ACTRN12615000715572.

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Eligible patients had symptoms of social isolation, loneliness and/or depression using the Social Isolation Index (SII≥3), [15] 3-item Loneliness Scale (UCLA-3≥6), [16] and Geriatric Depression Scale – 5 item (GDS-5≥2). [17]

Patients were excluded if they were triaged as category 1 level of urgency on the Australasian Triage Scale; required surgery; lived in an aged care facility; were receiving end-of-life care; had a confirmed diagnosis of dementia or severe mental illness such as psychosis or schizophrenia; had a moderate-severe cognitive impairment using the Mini-Mental State Examination (MMSE<20); [18] or were unable or unwilling to communicate by telephone.

Sample size

A sample size of 50 participants across the two sites was nominated, to examine feasibility of study processes and intervention acceptability.

***HOW R U?* intervention**

The intervention, volunteer peer training program and risk management strategies were described in full in the published study protocol. [14] In summary, *HOW R U?* comprised:

- screening by research nurses for feelings of social isolation, loneliness and depression at the time of hospital attendance using the SII [15], UCLA-3 [16] and GDS-5 [17];
- peer support delivered by a trained hospital volunteer through weekly telephone calls, within 72 hours of discharge home, for up to 3 months; and
- referral for ongoing support by community-based services as required at study end.

Data collection

As per the published study protocol paper, [14] bio-sociodemographic and health and social care services use data were collected, alongside measurement of social isolation (SII) [15], loneliness (UCLA-3) [16], depressive symptoms (GDS-5) [17], and health-related quality of life (EQ-5D-5L and EQ VAS) [19] at the time of hospital attendance and at the 3 months study end point. The primary outcomes were feasibility and acceptability.

Feasibility of study processes including recruitment and retention in the program were assessed using study records. Thirty-nine patient experience interviews were conducted at the conclusion of follow-up data collection to determine the acceptability of the intervention. These interviews were undertaken using a topic guide based on the Peer Support Evaluation Inventory [20]. Questions explored participants' perceptions about the frequency and length of the calls, the modality of the intervention, their matched volunteer peers, the level of support provided, and their satisfaction with the overall experience (See Appendix). Fidelity of the intervention delivery was determined by reviewing the weekly telephone activity logs maintained by the volunteer peers, and also through observation of a proportion of peer support calls. Secondary outcomes were any measurable changes in levels of perceived social isolation, loneliness, depressive symptoms and quality of life.

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Analysis

Acceptability of the intervention by the target patient population was measured by the rate of recruitment and retention in the intervention, and also through analysis of the qualitative interviews. Transcripts were loaded into NVivo (Version 11, QSR International, Doncaster, Victoria) for data management and analysed using a qualitative thematic framework approach [21]. This involved familiarisation with the data and derivation of a framework by noticing concepts within the data and developing themes and sub-themes. Quotes were sorted into categories, which formed the final thematic framework. Data were mapped and interpreted and the framework was applied back to the dataset to ensure all quotes were appropriately organised whilst retaining links to the original data. Two researchers were involved in the development of the framework and resolved differences in opinion through discussion.

Acceptability to volunteer peers was measured using retention rates and feedback obtained in focus groups. Volunteer perceptions are the focus of a separate manuscript.

Social isolation, loneliness, depressive symptoms and health-related quality of life scores were compared before and after the intervention, using paired t-tests with a significance level of p=0.05.

RESULTS

This study enabled us to develop all study resources, materials and training programs; test the feasibility of study processes; and determine acceptability of the intervention to patients and volunteers. We recruited 17 volunteer peers and a convenience sample of 39 patient participants. Volunteers were all aged over 50 years and 69% were women. The median age of patient participants was 84 years, 64% were women, and 84% of participants lived alone. Patient participant baseline demographic characteristics are summarised in Table 1.

Feasibility of study processes

Volunteers were invited by their Hospital Volunteer Services Manager to participate in the study. All volunteer participants attended a half-day *HOW R U?* peer support training program, conducted at their respective hospital. Feedback about the first hospital's *HOW R U?* orientation / training program and resources enabled refinement prior to the second hospital's session.

Recruitment processes in the ED, including eligibility screening, were feasible, with 30% of eligible patients successfully enlisted across the two sites.

Intervention acceptability and fidelity

The intervention was feasible and acceptable from the volunteers' point of view, with most able to take on 3 participants in addition to their usual hospital volunteer roles. There was

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no volunteer attrition over the study period. The mean number of telephone calls per participant was 7.73 calls (standard deviation, SD 2.71), with a mean call length of 23.97 minutes (SD 13.39). Weekly monitoring of telephone activity logs indicated intervention fidelity, with 100% completion rate of the activity log sheets including documentation of the main focus of and topics discussed in each call; agreed social goals for the following week; patient-reported changes since the previous call; and volunteer-peer impression of the participant's emotional state/feelings during each call. All volunteers adhered to the risk management procedures in accordance with the study protocol, with one volunteer reporting concern about a single patient participant to the hospital emergency physician coinvestigator. All volunteers reported that the level of support provided by their Volunteer Service Manager, and the research team was appropriate.

The intervention was acceptable to patient participants, with 34 completing the program, representing an 87% retention rate. Three main themes were identified in the qualitative data as follows:

Study processes were acceptable to participants

While some participants missed a few calls due to last-minute medical appointments and unexpected visitors, the fact that participants agreed upon the call time the week prior meant that receiving peer support calls was convenient for them. Participants were satisfied with the individually-determined length of their phone calls, with one expressing that *'having someone to talk to for 5-10 minutes is good'* (P13) while others were happy to talk for much longer. Similarly, while some participants would have liked to receive more calls at the conclusion of the intervention, most participants were satisfied with the length of the program. Some also commented on the frequency of the calls and believed that *'once a week was a good amount of calls'* (P17). In terms of the modality of the intervention, while a couple of participants *'would have liked face-to-face'* (P36) support, *most 'liked the convenience of telephone support'* (P1). One participant stated that *'telephone calls are a good way to receive social support without having to go out'* (P2). Another participant liked receiving telephone support because *'even though they knew the voice, the anonymity was good'* (P19).

Supportive relationships developed between participants and volunteer peers

Most participants reported that their volunteer peers were supportive and understanding. One participant stated that they *'felt they could confide in their volunteer'* (P21), while another mentioned that they *'could talk about things that they couldn't talk about with other people'* (P35). Participants reported finding common interests with their volunteer peer in order to build rapport and topics discussed included sport, poetry, films, music, cooking and politics. Furthermore, some participants reported *'becoming quite good friends'* (P4) with their volunteer and *'looking forward to the calls'* (P15), demonstrating that it was feasible for participants to develop a supportive relationship with a volunteer in this timeframe.

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HOW R U? is addressing a need

A number of participants commented on the potential for *HOW R U?* to fill a need for *'people who are really isolated'* (P23). One participant suggested that *'after discharge is when something like this is really helpful, especially if you're on your own'* (P5). Another participant mentioned that *'it is empowering to have someone to talk to when you are down and know that you are not alone'* (P26). Overall, participants acknowledged that taking an interest in people who may be socially isolated, lonely or showing symptoms of depression can really make a difference.

Secondary outcomes

At the end of the 3-months study, it was observed that:

- 53% of participants experienced a reduction in the level of loneliness:
  pre- and post- mean *UCLA 3-item* scores 5.76 (SD 1.84) and 4.59 (SD 1.62), respectively (t=3.32, *p*=0.002);
- 68% of participants experienced fewer depressive symptoms:
  pre- and post- mean *GDS 5-item* scores 2.15 (SD 1.21) and 1.03 (SD,1.22), respectively (t=4.77, *p*=0.000)
- while 59% of participants experienced an increase in health-related quality of life, the difference between mean *EQ VAS* scores pre- and post- intervention was not significant:
  pre- and post- mean EQ VAS scores 57.85 (SD 26.02) and 65.44 (SD=20.13), respectively (t=-1.58, *p*=0.124)

DISCUSSION

This is the first study of a hospital volunteer-delivered telephone service designed to support discharged older emergency patients with symptoms of social isolation, loneliness and/or depression. This study indicated that *HOW R U?* was feasible and acceptable to patients and volunteers. Our results also suggested that a hospital volunteer-delivered telephone service might reduce levels of loneliness and symptoms of depression in this patient group. A limitation was that this was a relatively small cohort study in two metropolitan hospital EDs; and it was not powered for these secondary outcomes. Hence further research with a comparative controlled trial is required to confirm the observed effects.

The overall 30% recruitment rate was reassuring, given the challenges associated with acute illness or injury and the fast-paced nature of the ED environment; [22] as well as the recognised stigma with seeking or receiving support in older populations. [23] Recruitment sessions were limited to 4.5hour time periods, due to resource constraints for this feasibility study. The target of 25 patients was met at the Alfred, however recruitment was terminated early at Cabrini due to the majority of older patients being admitted for time periods greater than 72 hours.

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The rate of patient retention in *HOW R U?* was promising, possibly in part due to the targeted cohort's characteristics, the supportive non-intrusive nature of the intervention which enabled relative anonymity and increased privacy over the phone, [24] and commencement within 72 hours of discharge.

The positive feedback was encouraging, and is in common with that reported by the UK *Call in Time* telephone 'befriending' service for older people. Evaluation of this service indicated a major impact on quality of life, with participants reporting that they felt a sense of belonging, that life was worth living and they valued knowing that *'there's a friend out there'*. [25] This resonates with comments received from *HOW R U?* participants.

Social isolation, loneliness and depressed mood are prevalent amongst older people living in the community, with 12% feeling socially isolated; [26] 50% reporting loneliness; [27 28] and depressive feelings in up to 20%.[29] Self-reported rates probably *under-represent* true levels because of an associated stigma amongst older people. [29] Therefore older patients with loneliness or depressive feelings are highly likely not to be identified, [30] reducing the opportunity for appropriate support to be implemented in the community.

Older people presenting to ED are at an increased risk of feeling socially isolated, lonely or depressed, [31] which are associated with increased re-attendance [32] and negative health outcomes such as early mortality, suicide, dementia and stroke.[33] These consequences have far-reaching public health impacts in terms of reduced quality of life and increased hospital use. Furthermore, with population ageing, it is likely that the number of older people at risk of social isolation and loneliness will continue to grow, as will their rates of ED use. The ED visit provides an opportunity to systematically identify social isolation, loneliness or depressive symptoms. If proven effective, implementation of peer support through *HOW R U?* should help combat the associated deleterious consequences, thereby diminishing this important public health and individual burden.

HOW R U? has the potential to reduce symptoms of depression, loneliness and social isolation amongst vulnerable older people, as well as improve quality of life. Volunteers represent a significant adjunct resource for meeting some of the health and social care service needs of our more vulnerable older population. Additional benefits include the positive effects that the act of meaningful volunteering has on the peer supporter, including a positive correlation between volunteering and perceived health, and a negative correlation with depression in older volunteers [34]. Maintenance of an effective high quality volunteer service requires professional staff to coordinate and manage recruitment, training, and the provision of day-to-day supervision, support and oversight; however the use of volunteers in hospitals has been shown to be cost-effective alongside increased levels of patient satisfaction [35]. Our qualitative and quantitative findings will now inform the design of a future randomised controlled trial and program evaluation.

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Table 1: *HOW R U?* participant baseline demographic characteristics

	N=39
Age (years) median (range)	84 (70-100)
Sex	
Female	64%
Cultural background	
Australian born	77%
Living status	
Living alone	82%
Formal/informal care in place	44%
Regular social group attendance	53%
Feelings of social isolation ([*]SII ≥2)	82%
Feelings of loneliness ([^]UCLA-3 ≥6)	65%
Depressive symptoms ([#]GDS-5 ≥2)	77%
Self-rated health: EQ-VAS (average)	59.6

Legend

[*] SII Social Isolation Index; [^] UCLA-3 3-item Loneliness Scale; [#] GDS-5 Geriatric Depression Scale – 5 item

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Appendix 1

HOW R U? patient experience interview questions

1. Did your volunteer peer provide you with the assistance that you needed? *Why or why not?*
2. Did your volunteer meet your expectations? *Why or why not?*
3. Did you feel that you were well-matched with your volunteer-peer? *Why or why not?*
4. Was receiving support from your volunteer peer convenient for you? *Why or why not?*
5. Was your volunteer supportive and understanding? *Why or why not?*
6. Did your volunteer help you learn more about community resources? *If yes, which community resources?*
7. Did your volunteer peer call you at the planned time? *If no, please explain further*
8. Did you have enough contact with your volunteer? *If no, please explain further*
9. Did you like receiving support from your volunteer peer over the telephone? *Why or why not?*
10. Would you recommend this type of support to a friend? *Why or why not?*
11. Overall, are you satisfied with your volunteer peer experience? *Why or why not?*
12. Do you have any other feedback about your peer support experience?

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STROBE 2007 (v4) Statement—Checklist of items that should be included in reports of *cohort studies*

HOspitals and patients WoRking in Unity (*HOW R U?*):
telephone peer support to improve older patients' quality of life after emergency department discharge – a feasibility study

Section/Topic	Item #	Recommendation	Reported on page #
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	4
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	4
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	5
Objectives	3	State specific objectives, including any prespecified hypotheses	6
Methods			
Study design	4	Present key elements of study design early in the paper	6
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	6
Participants	6	(*a*) Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up	6
		(*b*) For matched studies, give matching criteria and number of exposed and unexposed	-
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	7
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	6-7
Bias	9	Describe any efforts to address potential sources of bias	-
Study size	10	Explain how the study size was arrived at	6
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	7
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	7
		(*b*) Describe any methods used to examine subgroups and interactions	-
		(*c*) Explain how missing data were addressed	-
		(*d*) If applicable, explain how loss to follow-up was addressed	-
		(*e*) Describe any sensitivity analyses	-

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STROBE 2007 (v4) Statement—Checklist of items that should be included in reports of *cohort studies*

Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	7
		(b) Give reasons for non-participation at each stage	-
		(c) Consider use of a flow diagram	-
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	7
		(b) Indicate number of participants with missing data for each variable of interest	8
		(c) Summarise follow-up time (eg, average and total amount)	8
Outcome data	15*	Report numbers of outcome events or summary measures over time	8
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	8
		(*b*) Report category boundaries when continuous variables were categorized	-
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	-
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	-
Discussion			
Key results	18	Summarise key results with reference to study objectives	8
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision.	5
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	8
Generalisability	21	Discuss the generalisability (external validity) of the study results	9
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	3

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.

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