ISRCTN26233632 https://doi.org/10.1186/ISRCTN26233632

Effectiveness of post-discharge telephone calls in reducing hospital use

Submission date
03/09/2025

Recruitment status
No longer recruiting

Registration date
10/11/2025

Overall study status
Completed

Last Edited
24/10/2025

Condition category
Other

[_] Prospectively registered
[X] Protocol
[_] Statistical analysis plan
[_] Results
[_] Individual participant data
[_] Record updated in last year

Plain English summary of protocol

Background and study aims
High rates of emergency department (ED) visits and readmissions within 30 days of discharge can indicate suboptimal healthcare system performance (e.g., poor quality care pre-discharge or a gap in the post-discharge care coordination). Readmissions within 30 days are generally considered unplanned and avoidable, and are associated with poor patient satisfaction, increased risks for morbidity and mortality, and are costly for the healthcare system. While not all ED visits and readmissions can be prevented, the rate can be reduced through better follow-up and care coordination after discharge. The post-discharge period is a vulnerable time for patients as they transition from hospital to home, and preventable adverse events can result from gaps in patients' understanding of their post-discharge medications, diagnosis, and follow-up appointments. A telephone call to connect with patients following discharge can help reinforce discharge plans and troubleshoot problems patients may face after discharge.

To support patients after their discharge, Fraser Health Virtual Care (FHVC) launched a new service to call patients at high-risk of readmission at home within 24-72 hours of discharge. An overarching assumption of post-discharge calls is that patients at higher risk of adverse post-discharge outcomes (e.g., ED visits, readmissions) would benefit more than those at lower risk. However, despite there being considerable research addressing post-discharge calls, the link between post-discharge calls and reduced ED visits and unplanned readmissions is still not clear. This study investigates the impact of a registered nurse conducting a follow-up call 48 hours after hospital discharge for high-risk patients in the Fraser Health region of BC, Canada. The primary focus is on whether this intervention reduces ED visits, unplanned hospital readmissions, and improves access to primary care, compared to standard care. It also explores patient-reported experiences with the follow-up call, particularly across different socioeconomic groups. Secondary questions examine the effectiveness of an SMS text message as an alternative intervention and how outcomes vary based on demographic and care-related factors such as age, gender, location, length of stay, discharging hospital, and discharge timing.

Who can participate?
Adults aged 18 and over with a LACE score greater than 9 (or 45 and older with a score below 9), who have been discharged from inpatient hospital care within the Fraser Health region to either their home or an assisted living facility.

What does the study involve?
Participants received a phone call or text message from FHVC 48 hours following discharge to review their discharge plan. Participants will receive a call or text message from an FHVC nurse located in the Fraser Health Authority.

What are the possible benefits and risks of participating?
Participants may benefit from talking with a registered nurse and clarifying any concerns following discharge from the hospital.
No known risks.

Where is the study run from?
Fraser Health, Canada

When is the study starting and how long is it expected to run for?
April 2022 to October 2022

Who is funding the study?
A Fraser Health Strategic Priorities Grant, Canada

Who is the main contact?
Dr Megan MacPherson, megan.m.macpherson@ubc.ca, meganmargaretmacpherson@gmail.com

Contact information

Type(s)
Public, Scientific, Principal investigator

Contact name
Dr Megan MacPherson

ORCID ID
https://orcid.org/0000-0001-7907-1394

Contact details
86-11491 7th Ave
Richmond
Canada
V7E4J5
+1 6045616605
megan.m.macpherson@ubc.ca

Additional identifiers

Study information

Scientific Title
The impact of post-discharge calls on emergency department visits and unplanned readmission rates in patients with high LACE scores

Acronym

FHVC RCT

Study objectives
Primary research hypothesis:
1. Compared to patients who receive standard care (no follow-up call), a registered nurse conducting a follow-up call, 48 hours post-discharge, will significantly reduce (1) ED visits; and (2) unplanned hospital readmissions for patients at high-risk of visiting the ED at both 7 and 30 days post-discharge.

Secondary research questions:
2. Compared to patients who receive standard care (no follow-up call), a SMS text message 48 hours post-discharge will significantly reduce (1) ED visits; and (2) unplanned hospital readmissions for patients at high-risk of visiting the ED at both 7 and 30 days post-discharge.

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 20/04/2022, Fraser Health Research Ethics Board (Department of Evaluation and Research Services Suite 400, Central City Tower 13450, 102 Avenue, Surrey, B.C., V3T0H1, Canada; +1 604-587-4681; sara.oshaughnessy@fraserhealth.ca), ref: 2022192

Primary study design
Interventional

Study design
Single-centre pragmatic three-arm randomized controlled trial

Study type(s)
Prevention

Health condition(s) or problem(s) studied
Adult patients discharged from hospital at high risk of readmission

Interventions
This is a single-centre pragmatic randomized controlled trial with three study arms, and the primary objective is to examine the effectiveness of a post-discharge call on 30-day ED visits. Participants will be randomized into three groups:
• Intervention group one will receive a call from Fraser Health Virtual Care (FHVC) 48 hours post-discharge
• Intervention group two will receive an SMS text message 48 hours post-discharge
• The control group will not receive a call or a text
Participants will be followed from the time they receive a post-discharge call/text to 30 days after discharge. Outcome data will be compared between the groups to determine if there is a difference.

Eligible participants were identified through a custom iTracker report that automatically retrieved EMR discharge data across Fraser Health hospitals. The report was automatically updated multiple times daily to reflect current discharges. Each morning, a research assistant filtered the report to identify participants discharged 48 hours prior and exported the data as a CSV file. Further manual review by a unit clerk or research assistant ensured participants met all

eligibility criteria. From the eligible pool, 70 participants were selected using simple random sampling (Microsoft Excel RAND function) and allocated to intervention group 1 and 30 participants were selected and allocated to intervention group 2. The remaining participants were assigned to the control group. Data collection continued until the target sample size was met.

The number of participants in the intervention group varied daily due to the capacity constraints of the nursing staff. As FHVC is a pre-existing service, nurses prioritize referrals, which further affects the size of the intervention group. Nurses are required to call patients as part of their regular duties, and this workload must be managed to ensure the service continues at the expected levels. Each morning, the research assistant received updates on nurse availability and adjusted the number of allocated intervention participants accordingly. Based on the available nursing capacity, the RAND function was consistently used to randomly select participants from the daily discharge list. On days when the total number of eligible discharges was fewer than 100, all available participants were assigned to the intervention groups to maintain operational continuity. Conversely, on days with limited nurse availability, more participants were assigned to the control group. As a result, participants did not have an equal probability of being assigned to the intervention or control group, as the assignment was influenced by staffing availability.

Registered nurses had access only to the intervention list and were blinded to the control group. Participants were not informed of their participation in the research study. Since all participants were unaware of group assignment and the study context, blinding was maintained from the participant's perspective.
Participants in the control group received standard care, which did not include any follow-up phone calls. In contrast, those in the intervention group 1 received a follow-up call 48 hours after discharge, conducted as part of the FHVC program. During these calls, nurses – performing their routine duties - assessed participants' understanding of their discharge diagnosis, treatment plan, follow-up appointments, and anticipated discharge supports. Any identified gaps in knowledge or care were documented. Participants in intervention group 2 received an SMS text message from FHVC 48 hours after their discharge. The text messages were sent through the platform, WelTel. FHVC received privacy and security approval to pilot WelTel.

Intervention Type
Behavioural

Primary outcome(s)
ED visits, defined as any visit in which a participant registered in any of the 12 EDs within the Fraser Health region, regardless of whether they were ultimately seen by a clinician, measured using data collected from across Fraser Health hospitals at one timepoint

Key secondary outcome(s)
The following secondary outcome measures were assessed at 7 and 30 days following the post-discharge call for the intervention group:
1. Hospital readmissions, defined as any admission to a hospital post-discharge, measured using data collected from across Fraser Health hospitals
2. Participant experience, measured using data collected through a survey developed by the research team

Completion date
23/10/2022

Eligibility

Key inclusion criteria
1. Adult patients >18 years old with LACE score >9 (note, LACE scores <9 were included if patients were 45 or older)
2. Discharged to home, or assisted living
3. Discharged form hospital inpatient care within Fraser Health region

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Mixed

Lower age limit
18 Years

Sex
All

Total final enrolment
7091

Key exclusion criteria
1. Active home health patient
2. Discharged from inpatient psychiatric unit
3. Active community respiratory services patient
4. Seen in follow-up before the post-discharge call
5. Readmitted or in the ED before the post-discharge call
6. Received a call from their primary care provider or other registered nurse
7. Deceased
8. Discharged to hospice
9. Received nursing support from another service
10. Unable to receive the post-discharge call from FHVC

Date of first enrolment
16/05/2022

Date of final enrolment
21/09/2022

Locations

Countries of recruitment
Canada

Study participating centre
Fraser Health Authority
13450 102nd ave
Surrey, BC
Canada
V3T0H1

Sponsor information

Organisation
Fraser Health

ROR
https://ror.org/014579w63

Funder(s)

Funder type
Hospital/treatment centre

Funder Name
Fraser Health Authority

Alternative Name(s)
Fraser Health

Funding Body Type
Government organisation

Funding Body Subtype
Other non-profit organizations

Location
Canada

Results and Publications

Individual participant data (IPD) sharing plan
Due to conditions of the informed consent obtained from participants, the institutional and Ministry of Health ethical requirements do not permit us to share participant data from this study.

IPD sharing plan summary

Not expected to be made available

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Protocol file	version 5	27/06/2022	24/10/2025	No	No