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Telephone follow-up, initiated by a hospital-based health professional, for postdischarge problems in patients discharged from hospital to home (Protocol)

MISTIAEN P, POOT E

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TABLE OF CONTENTS

ABSTRACT

This is the protocol for a review and there is no abstract. The objectives are as follows: To determine the effects of follow-up telephone calls (TFU) in the first month post discharge, initiated by hospital-based health professionals, to patients discharged from hospital to home, with regard to physical and psycho-social outcomes in the first three months post discharge. The effects of TFU will be compared to usual care or other types of hospital follow-up (eg. TFU initiated by primarycare- based health professionals).

The effects of TFU initiated/delivered by various health care professionals (eg. nurse, MD, social worker, pharmacist, ...) will be assessed in subgroup analyses.

Although we expect to find that most TFU interventions will focus on outcomes such as reassurance and informational needs, we will include other types of outcomes because of the great variety of postdischarge problems.

The following questions will be addressed:

PRIMARY OUTCOMES:

- What are the effects of TFU initiated by a hospital-based health professional, on the psycho-social health (uncertainty, anxiety, informational needs, mood, perceptions of coping, quality of life, social activity) of patients in the first three months post discharge, compared to usual care or other types of hospital follow-up?
- What are the effects of TFU on the physical health (activities of daily living, self-care abilities, self efficacy, independence) of patients in the first three months post discharge compared to usual care or other types of hospital follow-up?

SECONDARY OUTCOMES:

- What are the effects of TFU on adherence of patients to recommended care in the first three months post discharge compared to usual care or other types of hospital follow-up?
- What are the effects of TFU on patient knowledge regarding disease or symptom management in the first three months post discharge compared to usual care or other types of hospital follow-up?
- What are the effects of TFU on adverse events (new morbidity, readmission) in the first three months post discharge compared to usual care or other types of hospital follow-up?
- What are the effects of TFU on service utilization (health care services) in the first three months post discharge compared to usual care or other types of hospital follow-up?

FACTORS INFLUENCING OUTCOMES:

Intervention-related factors:

- Does the structure/format of the TFU inuence the outcomes?
- Does the type of health care provider (eg. doctor, nurse, social worker, ...) of the TFU inuence the outcomes?
- Does the timing of the TFU inuence the outcomes?
- Does the frequency of the TFU inuence the outcomes?
- Do discharge planning activities and/or aftercare interventions other than the TFU inuence the outcomes?

Patient-related factors:

- Does the age of patients inuence the effects of TFU?
- Does the length of hospital stay inuence the effects of TFU?
- Does the medical diagnosis or procedure, carried out prior to discharge, inuence the effects of TFU?

- Do disease severity and co-morbidities inuence the effects of TFU?
- Does the person's home living arrangements (living alone, living with someone) inuence the effects of TFU?
- Does the gender of patients inuence the effects of TFU?

Other related factors:

- Does the country inuence the effects of TFU?
- Does the type of hospital inuence the effects of TFU?

Note: throughout this protocol the term 'patient' is used; although we recognize that terms such as 'consumer', 'client', or 'person with ... condition' may be more accurate than 'patient' and preferred by consumers themselves, we think that 'patient' remains the term that is most well known internationally to denote a person that is or has been in contact with a health professional for a certain condition.

BACKGROUND

It is known from several primary studies and literature reviews (Mistiaen 1999; Bull 2000; Hyde 2000; Cole 2001; Parker 2002; Parkes 2002) that many patients encounter a variety of problems in the first weeks after they have been discharged from hospital to home. These problems can include: difficulty in activities of daily living, emotional problems, knowledge deficit (eg. insufficient knowledge to understand symptoms or advice), insufficient help, uncertainty and anxiety, and informational needs (patient perceives need for more information than given). For instance Bull (Bull 2000) states that '[...] people were given little information regarding their medications and condition, they had difficulty managing special diets, and they were often unclear about which activities they could engage in, or which ones they should avoid. [...] In addition elders in one study had difficulty in evaluating symptoms and deciding whether a symptom was related to their medical condition or to the adverse effects of medication. [...] Unmet information needs one week following hospital discharge were reported by 80% of elders. [...] Problems with recognizing the signs of complications, managing medication, diet and other aspects of treatment contributed to hospital readmission' (p. 71). Although postdischarge problems are not always major medical problems, patients often perceive them as giving discomfort (LeClerc 2002). There is also empirical evidence that health professionals rate postdischarge problems in a different way than patients do (Reiley 1996).

Although generally-accepted definitions of postdischarge problems and postdischarge period are lacking, and may vary across illnesses and treatment procedures, research has shown that postdischarge problems are most intense in the period immediately after hospital discharge. Naylor's review (Naylor 2002) states that '4 to 6 weeks post discharge represents a critical period when many elders are at highest risk for poor discharge outcomes' and empirical research in a mixed population has shown that postdischarge problems are greater at 7 days post discharge than at 30 days post discharge (Mistiaen 1999b).

Moreover, in western developed countries, there is a tendency for shorter hospital stays and a shift to one-day-stay procedures, restricting the time available for health professionals to prepare patients adequately for their transfer to home and for the postdischarge period. This may increase postdischarge problems. In recent years many projects have addressed discharge planning, with the aim of reducing problems after discharge. The focus of most discharge planning projects is selecting patients at risk of postdischarge problems as soon as possible after admission, preparing them in a timely and adequate fashion for discharge, and organizing discharge arrangements. These discharge planning efforts do not resolve all problems, however (Parker 2002; Parkes 2002). Patients need not only discharge preparation but also adequate aftercare. Aftercare is given in many different forms and may consist of several components, yet there is no scientific evidence that these aftercare efforts have clear beneficial effects (Bours 1998).

Since a large proportion of postdischarge problems relate to informational needs, and patients are reluctant to bother health care providers with their questions, it can be assumed that active telephone follow-up, initiated by hospital-based health professionals, may be of relevance to the problems patients face after discharge. Telephone follow-up is seen as a good means of exchanging information, providing health education and advice, managing symptoms, recognizing complications early, giving reassurance and providing quality aftercare service. Cox et al. (Cox 2003) state that by telephone follow-up 'information can be reinforced, thereby increasing compliance, and ensuring the physical and emotional comfort of the patient'. Moreover, telephone follow-up is an intervention that is easy to organize and does not cost a lot of money or time, and the technology is available to almost all patients. Research (Cave 1989; Bowman 1994; Keeling 1995; Kelly 1999) has shown that telephone follow-up is feasible, and that patients greatly appreciate such calls (Moran 1999; Johnson K 2000; Schaeffer 2001). However, at present it is not clear whether telephone follow-up is also effective in reducing postdischarge problems. Studies so far show mixed results. For example, a randomized controlled trial of telephone follow-up versus usual care in ophthalmic surgery patients (Boter 2000) found no beneficial effects, except that patients greatly appreciated the phone call. The authors of this study suggest that the no-effect might be due to outcome instruments that were not sensitive enough, or due to the nonproblematic character of the patient group. But no-effect has also been demonstrated for more complex patient groups such as oncology patients (Beney 2002). On the other hand Beckie (Beckie 1989) found telephone follow-up (versus no telephone follow-up) to enhance knowledge with regard to self-care measures and to reduce anxiety after discharge in coronary artery bypass graft patients, although this could not be confirmed in a later study by Roebuck (Roebuck 1999). And finally, Hartford andWong (Hartford 2000) conclude their narrative literature review that 'plagued by inadequate sample size and weak designs, only two RCTs of nurse-initiated telephone follow-up in coronary artery bypass graft patients had positive results' (p.32).

Therefore, this review aims to determine the effects of follow-up telephone calls delivered in the first month after discharge, initiated by hospital-based health professionals, to patients discharged from hospital to home, with regard to physical and psycho-social outcomes in the first three months post discharge.

Telephone follow-up is only one way of providing support after discharge; this review however will focus solely on this form of care since Bours (Bours 1998) performed a systematic (non-Cochrane) review of multicomponent aftercare and Johnson (Johnson 2003) has prepared a Cochrane review of written and verbal information versus verbal information only for patients being discharged from acute hospital settings to home.

OBJECTIVES

To determine the effects of follow-up telephone calls (TFU) in the first month post discharge, initiated by hospital-based health professionals, to patients discharged from hospital to home, with regard to physical and psycho-social outcomes in the first three months post discharge. The effects of TFU will be compared to usual care or other types of hospital follow-up (eg. TFU initiated by primary-care-based health professionals).

The effects of TFU initiated/delivered by various health care professionals (eg. nurse, MD, social worker, pharmacist, ...) will be assessed in subgroup analyses.

Although we expect to find that mostTFUinterventionswill focus on outcomes such as reassurance and informational needs, we will include other types of outcomes because of the great variety of postdischarge problems.

The following questions will be addressed:

PRIMARY OUTCOMES:

- What are the effects of TFU initiated by a hospital-based health professional, on the psycho-social health (uncertainty, anxiety, informational needs, mood, perceptions of coping, quality of life, social activity) of patients in the first three months post discharge, compared to usual care or other types of hospital follow-up?
- What are the effects of TFU on the physical health (activities of daily living, self-care abilities, self efficacy, independence) of patients in the first three months post discharge compared to usual care or other types of hospital follow-up?

SECONDARY OUTCOMES:

- What are the effects of TFU on adherence of patients to recommended care in the first three months post discharge compared to usual care or other types of hospital follow-up?
- What are the effects of TFU on patient knowledge regarding disease or symptom management in the first three months post discharge compared to usual care or other types of hospital follow-up?
- What are the effects of TFU on adverse events (new morbidity, readmission) in the first three months post discharge compared to usual care or other types of hospital follow-up?
- What are the effects of TFU on service utilization (health care services) in the first three months post discharge compared to usual care or other types of hospital follow-up?

FACTORS INFLUENCING OUTCOMES:
Intervention-related factors:

- Does the structure/format of the TFU inuence the outcomes?
- Does the type of health care provider (eg. doctor, nurse, social worker, ...) of the TFU inuence the outcomes?
- Does the timing of the TFU inuence the outcomes?
- Does the frequency of the TFU inuence the outcomes?
- Do discharge planning activities and/or aftercare interventions other than the TFU inuence the outcomes?

Patient-related factors:

- Does the age of patients inuence the effects of TFU?
- Does the length of hospital stay inuence the effects of TFU?
- Does the medical diagnosis or procedure, carried out prior to discharge, inuence the effects of TFU?
- Do disease severity and co-morbidities inuence the effects of TFU?
- Does the person's home living arrangements (living alone, living with someone) inuence the effects of TFU?
- Does the gender of patients inuence the effects of TFU?

Other related factors:

- Does the country inuence the effects of TFU?
- Does the type of hospital inuence the effects of TFU?

Note: throughout this protocol the term 'patient' is used; although we recognize that terms such as 'consumer', 'client', or 'person with ... condition' may be more accurate than 'patient' and preferred by consumers themselves, we think that 'patient' remains the term that is most well known internationally to denote a person that is or has been in contact with a health professional for a certain condition.

CRITERIA FOR CONSIDERING STUDIES FOR THIS REVIEW

Types of studies

- randomised controlled trials
- controlled trials

Types of participants

- all patients discharged from an acute hospital setting (including emergency departments and one-day-stay procedures) to home (including a relative's home but excluding nursing homes or convalescence homes)
- all ages

Types of intervention

- Experimental intervention:

Telephone follow-up (TFU) initiated by a hospital-based health professional (medical, nursing, social work, pharmaceutical, ...) to a patient who is discharged to his/her own home setting (including a relative's home). The TFU has to be performed at least once within the first month after discharge. The TFU may have any kind of structure: for instance completely open ('how are you doing?') or completely structured. The TFU may contain one or more elements such as gathering of information, giving reassurance, giving advice on several topics, counseling, referral where required, etc.

The TFU has, in principle, to be targeted to the patients themselves. In cases where the patients themselves are not able to talk on the phone (eg. very young children, very sick people, patients with severe Alzheimer's disease) on one or more occasions when the TFU is delivered, these studies will be included. On the dataextraction sheet we will note the extent to which the TFU was indirect, and we will conduct separate analyses for studies in which the intervention for the entire research population was delivered directly to the patients, and for studies in which the TFU was (partly) delivered to relatives/caregivers. Studies in which the TFU is intended primarily to address the problems of caregivers rather than of patients, will be excluded.

The TFU may be delivered as the only aftercare intervention, or may be part of a multi-component discharge planning or aftercare intervention, but only if the studies report data on the effects of the TFU component, or its effects can be isolated and analyzed to some degree.

- Control intervention:

Usual care
or
other types of hospital follow-up.

Types of outcome measures

Psycho-social health of patients:

1. uncertainty;
2. anxiety;
3. informational needs;
4. mood;
5. coping;
6. quality of life;
7. social activity.

Physical health of patients:

8. level of activities of daily living (ADL)/functional status;
9. self-care abilities;
10. self efficacy;
11. independence.

Other consumer oriented outcomes:

12. treatment adherence;
13. knowledge of disease and symptom management;
14. adverse events (complications, infection, readmission).

Health service delivery oriented outcomes:

15. hospital readmission;
16. health services utilization.

The outcomes must be measured at least once within the first three months post discharge. Since there is no generally-accepted defi- nition of what a postdischarge period means, and the duration of postdischarge problems may vary for different illnesses and treatment procedures, the choice of a time period for study must be arbitrary. However there is evidence, as stated earlier, that most postdischarge problems occur in the period immediately after discharge. Moreover three months is a period for which it is reasonable to assume that outcomes can be related to the intervention in the first month after discharge; it is not likely that if no-effect were found in this immediate postdischarge time frame, effects would be found later .

No restrictions will be made with regard to the measurement tools used, but psychometric properties will be recorded.

This review will be limited to outcomes in patients themselves; possible outcomes in carers or relatives will not be included.

SEARCH STRATEGY FOR IDENTIFICATION OF STUDIES

See: Consumers & Communication Group search strategy

We will search for the types of studies we want to include, by using the highly sensitive strategy for the retrieval of controlled trials in PubMed, as proposed by Robinson and Dickersin (Robinson 2002) and which is supported by the Dutch Cochrane Center:

(randomized controlled trial [pt] OR controlled clinical trial [pt] OR randomized controlled trials [mh] OR random allocation [mh] OR double-blind method [mh] OR single-blind method [mh] OR clinical trial [pt] OR clinical trials [mh] OR (\clinical trial" [tw]) OR ((singl* [tw] OR doubl* [tw] OR trebl* [tw] OR tripl* [tw]) AND (mask* [tw] OR blind* [tw])) OR (\latin square" [tw]) OR placebos [mh] OR placebo* [tw] OR random* [tw] OR research design [mh:noexp]) OR comparative study [mh] OR evaluation studies [mh] OR follow-up studies [mh] OR prospective studies [mh] OR cross-over studies [mh] OR control* [tw] OR prospectiv* [tw] OR volunteer* [tw]) NOT (animal [mh] NOT human [mh])

This search will be combined by AND with the following (PubMed) search focusing on the interventions (this strategy has been developed with help from the Trials Search Coordinator of the Cochrane Consumers and Communication Review Group):

"telecommunications"[MeSH Terms] OR tele?communication* [tw] OR electronic communication* OR \telephone"[MeSH Terms] OR telephon* [tw] OR phone[tw] OR phone call* OR follow-up call* OR call?back [tw] OR calls [tw] OR calling [tw] OR call [tw] OR tele?health OR tele?medicine

AND

"patient discharge"[MeSH Terms] OR ((patient* OR client* OR consumer* OR recipient* OR subject*) AND discharg*) OR hospital discharg* OR \hospital discharge"[tw] OR \aftercare"[MeSH Terms] OR aftercare [tw] OR \continuity of patient care"[MeSH Terms] OR convales*[tw] OR recover*[tw] OR post?operative care OR ((patient* OR client* OR consumer* OR recipient* OR

subject* OR care?giver* OR carer* OR famil*) AND (inform* OR educat* OR instruct* OR counsel* OR advise* OR advice OR reassur* OR support*)) OR information* need* [tw] OR post?hospital*

We will search the following databases, all from their original start date until June 2003:

The Cochrane Consumers and Communication Review Group's Specialised Register, the Cochrane Effective Practice and Organisation of Care Review Group's Specialised Register, the Cochrane Central Register of Controlled Trials (CENTRAL), PubMed, EMBASE, BiomedCentral, CINAHL, ERIC, Invert (Dutch nursing literature index), LILACS, Picarta (Dutch library system), PsycINFO, PsycLIT, Science Citation Index Expanded, SIGLE, and SOCIOFILE.

Appropriate variations of the above PubMed search for the other databases have been made. The strategy for CENTRAL is given below; other search strategies are listed in the Additional Tables (Table 01; Table 02).

Cochrane Central Register of Controlled Trials (CENTRAL)

1. ((((((((((((TELECOMMUNICATIONS or TELECOMMUNICATION*) OR (ELECTRONIC and COMMUNICATION*)) OR TELEPHONE) OR TELEPHON*) OR PHONETW) OR (PHONE AND CALL*)) OR (FOLLOW-UP AND CALL*)) OR CALLBACK) OR CALLS) OR CALLING) OR CALL) OR TELEHEALTH) OR TELEMEDICINE)
2. COMMUNICATION*:ME
3. TELEPHONE*:ME
4. HOTLINES*:ME
5. TELEMEDICINE*:ME
6. TELECOMMUNICATIONS*:ME
7. PHONE-CALL
8. PHONE-CALLS
9. CALL-BACK
10. (((((((#1 or #2) or #3) or #4) or #5) or #6) or #7) or #8) or #9)
11. PATIENT-DISCHARGE*:ME
12. AFTERCARE*:ME
13. CONTINUITY-OF-PATIENT-CARE*:ME
14. DISCHARG*
15. FOLLOW-UP
16. ((((#11 or #12) or #13) or #14) or #15)
17. (#10 and #16)

Additional references will be located by searching the reference lists of the included papers and by contacting individuals known to be active in the field of discharge and/or telephone care. A forward search with the included papers will be performed in the Science Citation Index to find recent papers that refer to them.

Ongoing research will be sought by checking following databases:

- National Research Register (http://www.update-software.com/ nrr/);
- Controlled Clinical Trials (http://www.controlled-trials.com/);
- Clinical Trials (http://clinicaltrials.gov/).

There will be no search limits applied with regard to language or publication date.

METHODS OF THE REVIEW

There will be five stages to the review process. Throughout the review process reviewers will not be blinded to trials.

STAGE 1: initial sifting

Two reviewers (PM, EP) will screen titles and abstracts of articles identified from the search strategy to determine relevance and whether they fulfil the inclusion criteria. For economic reasons, in this first stage (which is more focused on excluding than on including), the first reviewer (PM) will screen all references and the second reviewer (EP) will check a 10% random sample of the references. If the agreement whether to exclude studies between the two reviewers on the 10% sample is lower than 95%, the second reviewer will proceed to check the other 90% of the sample. Where there is insufficient information from the title and/or abstract to determine relevance, full paper copies of the articles will be ordered and proceeded to the second stage. The articles must fulfil all six inclusion criteria which are:

- (randomised) controlled trial;
- research population concerns patients discharged from hospital to their own home;
- intervention must be a (at least one) telephone follow-up initiated by a hospital-based health professional and in principle directed to the patients themselves;
- intervention has to take place at least once within the first month after hospital discharge;
- outcomes have to be measured at least once within the first three months after hospital discharge; and
- if the TFU is the part of multi-component intervention, the study reports data on the effects of the TFU-component, or its effects can be isolated and analyzed to some degree.

For each study the criteria will be judged from top to bottom; from the moment a criterion is not met no further analysis will be done relating to the subsequent criteria.

Any disagreements will be resolved by discussion.

STAGE 2: inclusion procedure

Two reviewers (PM, EP) will examine independently full paper copies of the articles selected in stage 1, to determine whether they fulfil the inclusion criteria. The article must fulfil all six inclusion criteria, as stated in stage 1.

For each study the criteria will be judged from top to bottom; from the moment a criterion is not met no further analysis will be done relating to the subsequent criteria. Any disagreements will be resolved by discussion between the two reviewers; if no agreement can be reached, a third reviewer will decide.

STAGE 3: data extraction

A data extraction sheet will be developed, pilot-tested on ten randomly-selected included studies, and refined accordingly.

Then, the following data will be extracted from all included studies by one reviewer (PM) and checked by the second reviewer (EP) using the data extraction form:

- study population (diagnosis, co-morbidities, hospital procedures, age, gender-ratio, length of stay, family support, inclusion and exclusion criteria);
- study environment (type of hospital, country);
- study methods (design, randomisation procedure);
- intervention (provider, structure, content, time, frequency, duration, who answered the phone (patient or relative));
- co-interventions (discharge preparation, other forms of aftercare);
- control intervention (usual care description, TFU by others);

- outcomes (type of outcome, measurement tool (type, psychometrics), timing and frequency of assessment);
- results (mean and range at the different measurement moments post discharge, for both experimental and control group);
- conclusions (as stated by the study authors);
- limitations of study and other remarks.

Authors will be contacted for further information if required. Any disagreement will be resolved by discussion between the two reviewers; if no agreement can be reached, a third reviewer will decide.

STAGE 4: assessment of methodological quality

The methodological quality of included studies will be assessed using the list of criteria from the Cochrane Effective Practice and Organisation of Care Review Group (Alderson 2002). This list contains seven criteria to evaluate RCTs and CCTs: concealment of allocation, follow-up of professionals, follow-up of patients, blinded assessment of primary outcomes, baseline measurement, reliable primary outcome measures, and protection against contamination. Further, as outlined in the Cochrane Reviewers' Handbook 4.1.6 (Clarke 2003), studies will be grouped into three categories: A (low risk of bias= all criteria met), B (moderate risk of bias= at least four of the criteria met) and C (high risk of bias= less than four of the criteria met).

Two reviewers will carry out the quality assessment independently. Any disagreement will be resolved by discussion between the two reviewers; if no agreement can be reached, a third reviewer will decide.

STAGE 5: analysis

The primary analysis will be a comparison of TFU with usual care or with other types of hospital follow-up, for each of the questions outlined in the Objectives of the review.

Studies will be grouped in different ways: according to similarity of intervention, according to similarity of patient populations and according to the outcomes measured. All comparisons will be narratively described and presented in tables. Since we expect to find significant heterogeneity in intervention modalities, research populations, outcomes and measurement tools, the results of the studies will only be combined statistically where appropriate and after tests for homogeneity.

The meta-analytic technique will depend on the outcomes reported. For outcomes 1-13 as described earlier, it is anticipated that the majority will be measured and reported as continuous data.

For continuous data the weighted mean difference (WMD) and confidence intervals (CI) will be reported; in cases where the studies have used different instruments to measure the same conceptual outcome, the standardized mean difference (SMD) will be reported. In studies that report dichotomous data (eg. with regard to readmission), the relative risk (RR) and CIs will be reported. All comparisons will be analyzed with both a fixed effect and a random effects model. Special attention will be given in the report to the possible heterogeneity in studies and the consequences of this for interpreting the results.

Subgroup analyses will be conducted:

- for gender;
- for age group (children/adults/old/old-old);
- for living status (alone/together);
- for the different health care professionals delivering the TFU;
- for types of hospital (university, general,..);

- for countries;
- for TFU after one-day-stay procedures versus TFU after more than one day hospital stays;
- for TFU after short hospital stays (.1 week) versus TFU after longer hospital stays;
- for TFU as the only form of discharge care versus TFU as part of multi-component discharge procedures;
- for TFU given in the first week after discharge versus TFU given later than the first week after discharge;
- for TFU in which only patients themselves were involved versus TFU in which relatives answered the telephone (due to the patient's inability);
- forTFUgiven as a once-only intervention versus repeated TFU; and
- for TFU given to different patient categories according to the medical diagnosis or health status (eg. severe, end of life, etc.).

Sensitivity analysis will be performed by repeating the analyses excluding studies with a 'C' methodological rating, excluding unpublished studies, and excluding studies with extreme outlying sample sizes.

We will seek support and advice from theDutch Cochrane Centre for performing the appropriate statistical analyses.

CONSUMER VIEWS AND PARTICIPATION
This protocol was submitted to three participating consumers in the Cochrane Consumers and Communication Review Group for comment, in addition to the Review Group's usual external peer review process.

Additional commentary from consumers will be sought in preparing the text of the final review, and at this stage we will contact theDutch Patient and Consumer Federation (NPCF) and the Patients' Association from the UK.

NOTES

This protocol was first published on issue 4, 2003 of the Cochrane Library.

This protocol was amended as of issue 3, 2004 of the Cochrane Library. We added a sixth inclusion criterium, that states that only studies in which the effect of the TFU can be isolated and analyzed, will be included. This extra inclusion criterium has no consequences for the search strategy, and no other studies will be included or excluded than was originally intended. The extra inclusion criterium is needed because studies wherein the effect of the TFU cannot be isolated do not add to the aim of this review. Moreover, the review is not intended to compare TFU interventions to multi-component interventions.

POTENTIAL CONFLICT OF INTEREST

One of the reviewers may also be an author of studies assessable for inclusion in the review. In this case, a co-reviewer will assess such studies for possible inclusion.

ACKNOWLEDGEMENTS

We want to thank all referees from the Cochrane Consumers and Communication Review Group and from the NIVEL, Netherlands Institute for Healthcare Services Research, for their very useful comments on an earlier version of this protocol.We also thank the editors and staff of the Consumers and Communication Review Group; particularly Ms Judy Stoelwinder for her assistance with the search strategy for this review.

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* *Indicates the major publication for the study*

ADDITIONAL TABLES

Table 01. Additional search strategies 1-5

EMBASE	BiomedCentral	CINAHL	ERIC	Invert
1 exp Hospital Discharge/ 2 exp AFTERCARE/ 3 aftercare.mp. or exp AFTERCARE/ 4 continuity care.mp. 5 discharge planning.mp. [mp=title, abstract, subject headings, drug trade name,	((\telecommunications" OR tele?communication* [tw] OR electronic communication* OR \telephone" OR telephon* [tw] OR phone[tw] OR phone call* OR follow-up call* OR call?back [tw] OR calls [tw] OR calling [tw] OR call [tw] OR tele?health	1.DISCHARGE in TI,AB,DE,TP,SH 2.explode \Transfer-Discharge"/ all topical subheadings / all age subheadings 3.DISCHARG* in TI,AB,DE,TP,SH 4.explode \Discharge-Planning"/ all topical subheadings / all	(explode \Research-" in DEM,DER) and ((discharg* or patient* discharge or post?hospital or aftercare or continuity of care or continuity of patient care or convales* or recover or reassur* or information* need*) and (((explode	Telefoon OR telefonisch OR telefonische OR telefoontje OR telefoneren OR telefoneer OR telefoneert OR telefoneerde OR telefoneerden OR opbellen OR nabellen

original title, device manufacturer, drug manufacturer name] 6 hospital discharge.mp. [mp=title, abstract, subject headings, drug trade name, original title, device manufacturer, drug manufacturer name] 7 (discharg$ or patient$ discharge or post#hospital or aftercare or continuity of care or continuity of patient care or convales$ or recover or reassur$ or information$ need).mp. [mp=title, abstract, subject headings, drug trade name, original title, device manufacturer, drug manufacturer name] 8 1 or 2 or 3 or 4 or 5 or 6 or 7 9 exp TELEPHONE/ or telephone.mp. 10 telecommunication.mp. or exp TELECOMMUNICATION/ 11 (tele#communication$ or electronic communication or telephon$ or phone or phone call$ or follow#up call$ or call#back or calls or calling or call or tele#health or tele#medicine or tele#nursing).mp. [mp=title, abstract, subject headings, drug trade name, original title, device manufacturer, drug manufacturer name] 12 9 or 10 or 11 13 8 and 12 14 Randomized Controlled Trial/ 15 Clinical Trial/ 16 (randomized	OR tele?medicine)) AND (\patient discharge" OR ((patient* OR client* OR consumer* OR recipient* OR subject*) AND discharg*) OR hospital discharg* OR \hospital discharge"[tw] OR \aftercare" OR aftercare [tw] OR \continuity of patient care" OR convales*[tw] OR recover*[tw] OR post?operative care OR ((patient* OR client* OR consumer* OR recipient* OR subject* OR care?giver* OR carer* OR famil*) AND (inform* OR educat* OR instruct* OR counsel* OR advise* OR advice OR reassur* OR support*)) OR information* need* [tw] OR post?hospital*)	age subheadings 5.explode \Early-Patient-Discharge"/ all topical subheadings / all age subheadings 6.explode \After-Care"/ all topical subheadings / all age subheadings 7.AFTERCARE in TI,AB,DE,TP,SH 8.AFTER?CARE in TI,AB,DE,TP,SH 9.POST?HOSPITAL* in TI,AB,DE,TP,SH 10.explode \Continuityof-Patient-Care"/ all topical subheadings / all age subheadings 11.CONVALES* in TI,AB,DE,TP,SH 12.explode \Recovery"/ all topical subheadings / all age subheadings 13.REASSUR* in TI,AB,DE,TP,SH 14.INFORMATION* NEED* in TI,AB,DE,TP,SH 15.explode \Information-Needs"/ all topical subheadings / all age subheadings 16.POST?DISCHARGE in TI,AB,DE,TP,SH 17.explode \Patient-Discharge"/ all topical subheadings / all age subheadings 18.#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12 or #13 or #14 or #15 or #16 or #17 19.RANDOMIZED CONTROLLED TRIAL in TI,AB,DE,TP,SH 20.RANDOMIZED CLINICAL TRIAL in TI,AB,DE,TP,SH 21.CLINICAL TRIAL in TI,AB,DE,TP,SH 22.explode \Clinical-Trials"/ all topical subheadings / all age subheadings	\Telephone-Communications-Systems" in DEM,DER) or (explode \Telephone-Instruction" in DEM,DER)) or (telecommunication* or tele?communication* or electronic communication or telephon* or phone or phone call* or follow?up call* or call?back or calls or calling or call or tele?health or tele?medicine or tele?nursing) or (explode \Telecommunications-" in DEM,DER)))	

controlled trial or controlled clinical trial or randomized controlled trials or random allocation or double#blind or single#blind or clinical trial$ or random$ or research design or follow-up stud$ or prospective stud$ or cross-over stud$ or comparative stud$).mp. [mp=title, abstract, subject headings, drug trade name, original title, device manufacturer, drug manufacturer name] 17 14 or 15 or 16 18 13 and 17		23.CONTROLLED CLINICAL TRIAL in TI,AB,DE,TP,SH 24.CONTROLLED TRIAL in TI,AB,DE,TP,SH 25.RANDOM* in TI,AB,DE,TP,SH 26.CROSS-OVER STUDIES in TI,AB,DE,TP,SH 27.CROSSOVER STUDY in TI,AB,DE,TP,SH 28.RESEARCH DESIGN in TI,AB,DE,TP,SH 29.explode \Research"/ all topical subheadings / all age subheadings 30.explode \Study-Design"/ all topical subheadings / all age subheadings 31.#19 or #20 or #21 or #22 or #23 or #24 or #25 or #26 or #27 or #28 or #29 or #30 32.TELEPHONE in TI,AB,DE,TP,SH 33.explode \Telephone-Information-Services"/ all topical subheadings / all age subheadings 34.TELE?COMMUNICATION* in TI,AB,DE,TP,SH 35.explode \Telecommunications"/ all topical subheadings / all age subheadings 36.explode \Telemedicine"/ all topical subheadings / all age subheadings 37.ELECTRONIC COMMUNICATION in TI,AB,DE,TP,SH 38.telephon* 39.PHONE in TI,AB,DE,TP,SH 40.explode \Telephone"/ all topical subheadings / all age subheadings 41.PHONE CALL* in TI,AB,DE,TP,SH 42.FOLLOW?UP CALL* in		

		TI,AB,DE,TP,SH 43.CALL?BACK in TI,AB,DE,TP,SH 44.CALLING in TI,AB,DE,TP,SH 45.CALLS in TI,AB,DE,TP,SH 46.CALL in TI,AB,DE,TP,SH 47.TELE?HEALTH in TI,AB,DE,TP,SH 48.explode \Telehealth"/ all topical subheadings / all age subheadings 49.explode \Telenursing"/ all topical subheadings / all age subheadings 50.#32 or #33 or #34 or #35 or #36 or #37 or #38 or #39 or #40 or #41 or #42 or #43 or #44 or #45 or #46 or #47 or #48 or #49 51.#18 and #31 and #50		

Table 02. Additional search strategies 6-10

LILACS	Picarta	PsycINFO/ PsycLIT	Science Citation Ind	Sociofile
(telefon) or \TELEFONE" or \TELEFONEMA" or \TELEFONIA" or \TELEFONICA" or \TELEFONICAS" or \TELEFONICO" or \TELEFONICOS" or \TELEFONISTAS" or \TELEFONO" or \TELEFONOS" or \TELEINFORMATICA" or \TELEINFORMATICS" or \TELEMATHIC" or \TELEMATICA" or \TELEMATICAS" or \TELEMATICS" or \TELEMEDECINE" or \TELEMEDICINA" or \TELEMEDICINE" or \TELENURSE" or \TELESALUD" or \TELEPHONE" or \TELEPHONES" or \TELEPHONIC" [Title words] or (telefon) or \TELEFONE" or	((ziekenhuisontslag OR (ontslag BIJ/4 ziekenhuis) OR (zorg BIJ/4 ontslag) OR postontslag* OR nazorg OR (continuit* BIJ/4 zorg)) OR (discharge#planning) OR (discharge # planning) OR (hospital # discharge) OR (aftercare) OR (patient* BIJ discharge) OR (post#hospital) OR (post # hospital) OR (continuity # care) OR follow#up OR (follow # up)) AND (telefo* OR telepho* OR call OR phone OR tele#health OR tele#medicine OR tele#communicat* OR tele#nursing)	((\Discharge-Planning" in DE) or (\Hospital-Discharge" in DE) or (\Aftercare-" in DE) or (discharg* or patient* discharge or post?hospital or aftercare or continuity of care or continuity of patient care or convales* or recover or reassur* or information* need*)) and ((\Telecommunications- Media" in DE) or (telecommunication* or tele?communication* or electronic communication or telephon* or phone or phone call* or follow?up call* or call?back or calls or calling or call or tele?health or tele?medicine or tele?nursing)) and	(discharg* OR patient* discharge OR post?hospital OR aftercare OR continuity of care OR continuity of patient care OR convales* OR recover OR reassur* OR information* need*) AND (telecommunication* OR tele?communication* OR electronic communication OR telephon* OR phone OR phone call* OR telephone follow?up OR follow?up call* OR call?back OR calls OR calling OR call OR tele?health OR tele?medicine OR tele?nursing)	((telecommunication* or tele?communication* or electronic communication or telephon* or phone or phone call* or follow?up call* or call?back or calls or calling or call or tele?health or tele?medicine or tele?nursing) or ((explode \Telecommunications- " in DE) or (explode \Telephone-Communications" in DE) or (explode \Telephone-Surveys" in DE))) and (((explode \After-Care" in DE) or (explode \Discharge-" in DE)) or (discharg* or patient* discharge or post?hospital or aftercare or

\TELEFONEMA" or \TELEFONIA" or \TELEFONICA" or \TELEFONICAS" or \TELEFONICO" or \TELEFONICOS" or \TELEFONISTAS" or \TELEFONO" or \TELEFONOS" or \TELEINFORMATICA" or \TELEINFORMATICS" or \TELEMATHIC" or \TELEMATICA" or \TELEMATICAS" or \TELEMATICS" or \TELEMEDECINE" or \TELEMEDICINA" or \TELEMEDICINE" or \TELENURSE" or \TELESALUD" or \TELEPHONE" or \TELEPHONES" or \TELEPHONIC" [Subject descriptor] or (telefon) or \TELEFONE" or \TELEFONEMA" or \TELEFONIA" or \TELEFONICA" or \TELEFONICAS" or \TELEFONICO" or \TELEFONICOS" or \TELEFONISTAS" or \TELEFONO" or \TELEFONOS" or \TELEINFORMATICA" or \TELEINFORMATICS" or \TELEMATHIC" or \TELEMATICA" or \TELEMATICAS" or \TELEMATICS" or \TELEMEDECINE" or \TELEMEDICINA" or \TELEMEDICINE" or \TELENURSE" or \TELESALUD" or \TELEPHONE" or \TELEPHONES" or \TELEPHONIC" [Abstract words]		(((RANDOM) or (RANDOM-) or (RANDOMASSIGNMENT)) or (randomized controlled trial* or controlled clinical trial* or random* or double?blind or clinical trial* or research design or comparative study or cross?over stud*) or ((\Empirical-Methods" in DE) or (\Experimental-Design" in DE) or (\Treatment-Effectiveness-Evaluation" in DE)))		continuity of care or continuity of patient care or convales* or recover or reassur* or information* need*))

C O V E R S H E E T

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Contact address	Drs. Patriek Mistiaen RN, MSN Nurse researcher NIVEL, Netherlands Institute for Healthcare Services Research Drieharingstraat 6 PO BOX 1568 Utrecht 3500 BN NETHERLANDS E-mail: p.mistiaen@nivel.nl; mistiaen@tiscali.nl Tel: +31302729779 Fax: +31302729729
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