

# Written and verbal information versus verbal information only for patients being discharged from acute hospital settings to home: systematic review

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## Abstract

This article presents the results of a Cochrane review which was conducted to determine the effectiveness of providing written and verbal health information compared with verbal information only to patients being discharged from acute hospital settings to home. Only two trials met the review inclusion criteria. In both trials the participants were parents of children being discharged from hospital to home. The two outcomes measured in both trials were knowledge and satisfaction. The review confirms that providing written and verbal health information is more effective in improving knowledge and satisfaction than providing verbal information only for parents of children being discharged from hospital to home. There is no evidence of the effectiveness of the intervention in adults who provide their own care after discharge from hospital. Further research is required which involves adult patients being discharged from hospital to home, and research which measures a range of outcomes which include readmission rates, recovery times, patient/carer knowledge, complication rates, service utilization and costs (community, outpatient and inpatient), confidence in one's own care management, stress and anxiety levels, satisfaction

with services provided prior to discharge, and adherence to recommended care.

## Introduction

It is becoming commonplace for patients to be discharged from acute hospital settings to their own homes and be required to manage various aspects of their own care or have significant others (family members or other people important to that person's care and wellbeing) provide that care (Johnson, 1999). This coupled with the decreasing length of hospital stay (Organization for Economic Cooperation and Development, 2003) has increased the need for information to be provided to patients and/or significant others so care can be effectively managed at home (Leino-Kilpi *et al.*, 1993).

There has been a growing awareness among health professionals and consumer advocates that comprehensive information in a format the patient can understand needs to be provided to manage care at home. These formats can include verbal and written information, audiotapes, videotapes, follow-up phone calls, E-mail communication with their doctor, and websites to access further information. These delivery formats contrast with the provision of verbal information only at the time of discharge, which is an approach that leaves knowledge and authority in the hands of health professionals. It also has the potential to disempower patients, as they are unable to refer to information after discharge or may not remember what they have been told (Linke, 1996).

It has been demonstrated in several qualitative studies that providing written information to patients

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on discharge is an important strategy which has the potential to improve the confidence of patients (or significant others) to manage care and seek appropriate follow-up care (Johnson, 1999), decrease recovery time (Johnston and Vogeles, 1993; Devine and Westlake, 1995), improve satisfaction with services provided whilst in hospital (Larson, 1996), decrease stress and anxiety (National Health and Medical Research Council, 2000), reduce hospital readmissions (Mamon, 1992; Fries, 1998), and improve adherence to hospital aftercare regimes (Mazzuca, 1982; Gibbs 1989; Frith 1991). However, there has been a degree of doubt expressed among some health professionals regarding the benefits of providing this type of written information to patients and whether it serves any real purpose or is just 'a nice thing to do' (Johnson, 1999).

This systematic review sought to answer some of the questions raised about the benefits of providing care information on discharge to patients in the written format, in combination with providing verbal information, as opposed to providing verbal information only. The written format in addition to verbal information was specifically chosen as the focus for this review because it is the most common approach used in hospital settings at discharge.

## Methods

The complete search strategy for this Cochrane review is described in detail in Johnson *et al.* (Johnson *et al.*, 2003). However, some key aspects of the methods will be presented. In line with the review requirements of the Cochrane Collaboration, only randomized controlled trials and controlled clinical trials were able to be included in this systematic review. Keywords used to develop the search strategy for the systematic review included: randomized controlled trial, controlled clinical trial, patient discharge, hospital discharge, recovery, discharge information, discharge advice, discharge education, patient information, carer information, parent information, patient education, carer education, parent education, aftercare, post-operative

care, continuity of patient care, medical information and written information.

Databases searched for specific time periods were: MEDLINE (OVID) [January 1990 to May (week 2) 2002], Cochrane Consumers and Communication Review Group Register and Cochrane Central Register of Controlled Trials (CENTRAL) (in December 2001), EMBASE (1990 to June 2002), CINAHL (1990 to December 2001), PsycINFO (1990 to November 2001), ERIC (1990 to July 2002), OVID (included Ageline, EBM Reviews) Cochrane Controlled Trials Register, EBM Reviews (Cochrane, DARE and Best Evidence), MEDLINE, Pre-MEDLINE and PsycARTICLES (1990 to June 2002), Sociological Abstracts (1990 to April 2002), Austhealth (including AMI, APAIS) Health, ATSIhealth, RURAL, AusportMed and CINCH (1990 to April 2002).

Studies that were identified through the above search strategy and appeared to meet the inclusion criteria were retrieved in full, and their reference lists examined to identify any additional studies that met the inclusion criteria.

Initial attempts were made to explore the grey literature, but it became apparent that the material identified would not meet the inclusion criteria. For example, studies reported were about developing health information or implementing specific projects in health services.

The intervention compared was the effectiveness of written discharge information plus verbal information with verbal information provision only. Participants included all patients discharged from an acute hospital setting to home (excluding hostels, nursing homes and convalescence homes), and included patients of all ages and/or their significant others (i.e. including parents of children).

The types of discharge information included disease/condition management information, specific care information related to procedures, medication information, advice on when to seek attention, and advice on who to seek attention from and how.

The outcome measures reviewed were readmission rates, recovery times, patient/carer knowledge, complication rates, service utilization and costs (community, outpatient, and inpatient), confidence

in one's own care management, stress and anxiety levels, satisfaction with services provided prior to discharge, and adherence to recommended care.

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

### Stage 1

Two reviewers (A. J. and J. S.) screened the abstracts of articles identified from the search strategy. Any disagreement regarding relevance of the abstracts was resolved through discussion. Full paper copies of articles were obtained and examined where there was insufficient information in the abstracts.

### Stage 2

Two reviewers (A. J. and J. S.) independently examined full paper copies of articles and determined whether they fulfilled the inclusion criteria. The articles needed to fulfill all five inclusion criteria which were:

- Randomized controlled trial or clinical controlled trial
- Discharged from an acute hospital setting
- Discharged to home
- Intervention must be written discharge care information plus verbal information only
- Intervention must be provided at discharge to home only

Any disagreements regarding inclusion were resolved by discussion.

### Stage 3

Data were extracted from relevant trials using a data collection tool independently by each reviewer (A. J. and J. S.) and then data were compared. Data extracted included: study population, study methods, interventions, assessment of outcomes, results, conclusions and limitations. Authors were contacted for further information as required. Any disagreements regarding information extracted were resolved by discussion.

### Stage 4: Assessment of validity

Allocation concealment was used to assess validity, by asking 'Was allocation concealment adequate?'. This was described as adequate (A), unclear (B), inadequate (C) or that allocation concealment was not used (D). A sensitivity study was planned to be performed to exclude trials that were in the (C) and (D) categories. This was not necessary due to the included trials fulfilling categories (A) or (B).

### Stage 5: Analysis

The primary analysis was a comparison of written health information plus verbal information versus verbal information only for knowledge and satisfaction. All comparisons made were narratively described and are presented in Table I. A meta-analysis of both trials was not possible because SD measurements were not available.

## Results

The electronic searching yielded a total of 1795 citations; however, only two trials met the inclusion criteria. The participants in the two trials were parents whose children were discharged from children's hospitals, one in the US and the other in Canada. The children in the Canadian trial (Jenkins *et al.*, 1996) were discharged from a burns unit after acute thermal injury. The children in the US trial (Isaacman *et al.*, 1992) were discharged from an Emergency Department with otitis media, which is an infection of the middle ear.

The sizes of the study groups in the two trials were similar. In the otitis media trial (Isaacman *et al.*, 1992) 197 parents participated and they were provided with one of three types of instruction on discharge. The control group received non-standardized verbal information only ( $n = 84$ ), one intervention group received standardized verbal information ( $n = 52$ ) and the other intervention group received standardized verbal information plus written information ( $n = 61$ ). The burns trial (Jenkins *et al.*, 1996) had 123 participants and provided participants with two types of information on discharge. The control group received routine

**Table I.** *Characteristics of the trials used in the review*

Study	Methods	Participants	Interventions	Outcomes	Allocation concealment
Isaacman <i>et al.</i> , 1992	RCT	US study: 197 parents of children with a mean age of 26.6 months discharged with otitis media from Children's Hospital of Wisconsin Emergency Department	control group: routine discharge teaching ( $n = 84$ ); intervention group 1: standardized verbal instructions ( $n = 52$ ); intervention group 2: standardized verbal instructions plus standard written instructions ( $n = 61$ )	knowledge of otitis media care, satisfaction with discharge instruction, outpatient service use following discharge, use of telephone advice following discharge	adequate
Jenkins <i>et al.</i> , 1996	RCT	Canadian study: 123 families of children under 17 years of age, discharged with burns from Winnipeg Children's Hospital	control group: routine discharge teaching ( $n = 61$ ); intervention group: discharge instruction with the pediatric burn discharge book provided on discharge ( $n = 62$ )	knowledge of burn care, satisfaction with discharge teaching	unclear

verbal discharge information ( $n = 61$ ), and the intervention group received verbal and written discharge information ( $n = 62$ ).

The two trials evaluated knowledge levels and satisfaction with discharge instructions. In the burns trial (Jenkins *et al.*, 1996) knowledge was measured using a 10-item questionnaire with open-ended questions which made 44 the highest achievable score. This required the respondents to provide information on selected burns care-related topics. Parents received 1 point for each incorrect answer to questions about burn care, 2 points were given for partially correct answers and 3 points were given for correct responses, except for two questions where 4 points were given for a predefined optimal answer. The study population's mean knowledge score was the sum of scores for all components to which a person responded, divided by the sum of the highest possible score for questions responded to (maximum = 1.0). With regard to satisfaction, two other questions were asked using a five-point Likert scale (1 = not at all satisfied and 5 = completely satisfied), with a total possible span of 2–10 points for both questions combined. The study population's mean satisfaction score was the sum of scores for all components to which a person responded, divided by the sum of

the highest possible score for questions responded to (maximum = 1.0).

In the otitis media trial (Isaacman *et al.*, 1992) knowledge about medication, signs of improvement and worrisome signs was measured using a seven-item questionnaire with 1 point being given for each correct answer, with the highest possible score being 7. The study population's mean knowledge score was the sum of the scores divided by the sum of the highest possible score for questions responded to (maximum = 1.0). In addition, on day 3, parents were asked to rate their satisfaction with the quality of the discharge instruction using a 10-point scale (10 being best). Neither trial identified if, nor how, the tools used were validated.

The follow-up evaluation times varied between the two trials from 24 hours to greater than 15 days. In the otitis media trial (Isaacman *et al.*, 1992) evaluation was conducted at discharge, and then by telephone for all participants on day 1 and day 3 following discharge. On completion of interviews at discharge and day 1 the interviewer provided reinforcing information to the parents to correct any incorrect answers or provide missing information. The burns trial (Jenkins *et al.*, 1996) conducted evaluation by personal interview at the first outpatient appointment for 120 participants, and the

additional three interviews were completed by telephone. In this trial the interviews were conducted over a period between less than 7 (35.8%), 8–14 (35%) and 15 plus days (29.2%).

The outcomes that the two trials measured were parents' knowledge and satisfaction with information received. The results will now be presented separately.

## Knowledge

In both trials parents' knowledge improved in a range of areas when provided with written health information and verbal information compared to verbal information only. In the burns trial (Jenkins *et al.*, 1996) the intervention group (written information in addition to verbal information) had significantly higher knowledge scores overall than those in the control group (verbal information) (average knowledge scores for intervention group 0.79, SD 0.15 and the average knowledge scores for the control group 0.73, SD 0.16,  $P = 0.029$ ). In the otitis media trial (Isaacman *et al.*, 1992) knowledge scores were recorded in three areas—medication data, signs of improvement and worrisome signs. For medication data knowledge, parents in the intervention group (written information in addition to verbal information) scored significantly higher than the control group (verbal information) at exit interview (average knowledge score for intervention group 0.902, no SD provided and the average knowledge score for the control group 0.765, no SD provided,  $P < 0.05$ ). In the area of knowledge related to signs of improvement, the intervention group and the standardized verbal information group scored significantly higher than the control group at exit interview [0.569 (intervention group), 0.253 (standardized verbal information group) versus 0.099 (control), no SD,  $P < 0.05$ ]. For knowledge related to worrisome signs, the intervention group and the standardized verbal information group scored significantly higher than the control group at exit interview, and on day 1 and day 3 (correct or missing information had been provided after previous interviews), exit interview [0.381 (intervention group), 0.320 (standardized verbal information group) versus 0.055 (control), no SD,  $P < 0.05$ ], day 1 [0.445 (intervention group),

0.375 (standardized verbal information group) versus 0.191 (control), no SD,  $P < 0.05$ ] and day 3 [0.444 (intervention group), 0.387 (standardized verbal information group) versus 0.224 (control), no SD,  $P < 0.05$ ]. We were unable to undertake statistical comparisons for parent knowledge as no SDs were provided by Isaacman *et al.* (Isaacman *et al.*, 1992).

## Satisfaction with information received

Both trials reported high satisfaction scores with information received. The burns trial (Jenkins *et al.*, 1996) determined the parents' satisfaction with the discharge information received and the usefulness of that information. Satisfaction was high in this trial (Jenkins *et al.*, 1996), but there was no significant statistical difference between the two groups (intervention 0.897, SD 0.15; control 0.914, SD 0.14). The otitis media trial (Isaacman *et al.*, 1992) measured parent satisfaction with discharge information received, and the results showed a higher level of satisfaction in favor of the intervention group and the standardized verbal information group (intervention group 0.96, standardized verbal information group 0.96 and control group 0.85, no SD given,  $P < 0.0001$ ).

## Discussion

The findings of this review are important because of the fact that providing information to patients (or significant others) on discharge from hospital to home is an essential component of quality care provision for the majority of clinical staff and is a fundamental right of all patients being discharged.

The results of this review found that providing written and verbal health information, when compared to verbal information only, does significantly increase the knowledge of parents of children who have been discharged from hospital to home. It is important to note that the knowledge scores in both trials may have been underestimated. This is suspected, because there was no requirement in either trial that the person who was given the discharge

information participated in the follow-up interviews. This could have resulted in a parent participating in the follow-up interview(s), and not being the parent who was provided with the original written and verbal discharge information.

Both trials suggested that the difference in knowledge scores shown in the intervention groups could be attributed to the standardization of the information, consistency of information provided and formalization of the instruction process rather than necessarily the provision of written information. Developing written health information is an important activity that would assist in this standardization process.

Both trials reported high satisfaction with discharge information in the control and intervention groups. In the otitis media trial (Isaacman *et al.*, 1992) a significantly higher score was achieved in the intervention groups compared to the control groups. However, it is possible that these high satisfaction scores are related to the general nature of the questions asked. Studies of patient satisfaction surveys (Cohen, 1996; Draper and Hill, 1996) have found that asking general questions can mask patients' concerns or dissatisfaction.

While the two trials are consistent in demonstrating that providing written information plus verbal information is more effective in improving knowledge and satisfaction than providing verbal information only for parents of children being discharged from hospital to home, generalizability of the results of this systematic review are guarded. This is due to only two trials meeting the inclusion criteria, the variability of methods used in the two trials and two trials focusing on providing information to parents of children being discharged from hospital to home. We cannot conclusively state that the findings are applicable to adult patients providing their own care.

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## Conclusion

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It is commonplace for patients (or significant others) to manage aspects of care at home following discharge from acute hospital settings. Various

qualitative studies have assisted in understanding the range of benefits of providing written information at discharge. These include improving confidence, decreasing recovery time, improving satisfaction, reducing readmissions and improving adherence to recommended care. What this systematic review of randomized controlled trials adds is evidence of the effectiveness of providing written information in addition to verbal information to parents when discharging child patients from hospital to home. This systematic review indicates that providing written information in addition to verbal information is more than just a 'nice thing to do'.

This systematic review has identified the need for further research. More specifically randomized controlled trials should be conducted on adult patient groups being discharged from hospital to home. The research should focus on the specific intervention of providing written plus verbal information compared to verbal information only. A range of outcomes need to be measured, which include readmission rates, recovery times, patient/carer knowledge, complication rates, service utilization and costs (community, outpatient and inpatient), confidence in one's own care management, stress and anxiety levels, satisfaction with services provided prior to discharge, and adherence to recommended care.

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