A feasibility study of the provision of a personalized interdisciplinary audiovisual summary to facilitate care transfer care at hospital discharge: Care Transfer Video (CareTV)

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Abstract

Objective: To assess the feasibility and patient acceptance of a personalized interdisciplinary audiovisual record to facilitate effective communication with patients, family, carers and other healthcare workers at hospital discharge.

Design: Descriptive pilot study utilizing a study-specific patient feedback questionnaire conducted from October 2013 to June 2014.

Setting and Participants: Twenty General Medical inpatients being discharged from an Acute General Medical Ward in a metropolitan teaching hospital.

Intervention: Audiovisual record of a CareTV filmed at the patient’s bedside by a consultant-led interdisciplinary team, within 24 h prior to discharge from the ward, provided immediately for the patient to take home. Patient surveys were completed within 2 weeks of discharge.

Main Outcome Measures: Technical quality, utilization, acceptability, patient satisfaction and recall of diagnosis, medication changes and post-discharge review arrangements.

Results: All patients had watched their CareTV either alone or in the presence of a variety of others: close family, their GP, a medical specialist, friends or other health personnel. Participating patients had good understanding of the video content and recall of their diagnosis, medication changes and post-discharge plans. Patient feedback was overwhelmingly positive.

Conclusions: In the context of a General Medical Unit with extensive experience in interdisciplinary bedside rounding and teamwork, CareTV is simple to implement, inexpensive, technically feasible, requires minimal staff training and is acceptable to patients. The results of this pilot study will inform and indicate the feasibility of conducting a larger randomized control trial of the impact of CareTV on patient satisfaction, medication adherence and recall of key information, and primary healthcare provider satisfaction.

Key words: healthcare delivery, medical records, patient discharge summaries, audiovisual media
Introduction

Effective discharge summaries are widely acknowledged to be an important determinant of positive patient outcomes following hospitalization including a reduction in adverse drug events, unplanned hospital readmission, post-discharge complications and mortality, and an increase in patient and carer satisfaction [1–4]. Despite this, Australian public hospital discharge summaries are often completed by a single unsupervised junior medical staff member who may have a limited perspective on many aspects of the patient’s admission. As a result, many discharge summaries are poorly constructed, overly detailed, delayed and unhelpful for the health practitioners who will be continuing the patient’s care in the community [1, 5]. Furthermore, it is unusual for a discharge summary to be primarily directed at enhancing the patient’s own understanding of their medical problems and their ongoing care plan [6].

Patients can be informed in various ways about their discharge management. New technologies have considerable potential for improving communication between patients and medical staff. Our team has developed a novel form of audiovisual discharge summary, the Care Transfer Video (CareTV). Following the successful implementation of a succinct, patient-centered and check-listed interdisciplinary ward round structure in our General Medical ward [7], we are now providing a personalized interdisciplinary video recording on USB or DVD (CareTV) that summarizes the patient’s recent admission. These Structured Interdisciplinary Bedside Rounds (SIBR) [7] include the round’s nurse manager, hospital intern or resident, registrar, consultant, bedside nurse, pharmacist and an allied health representative. Relatives are encouraged to participate as much as possible. Each round follows a standardized format beginning with a summary of the patient’s condition and progress in terms they can understand followed by brief reports from each attendee where relevant and completion of a quality checklist. Patients and family are invited to ask questions which are usually answered immediately. The round concludes with a summary of the plan by the registrar, again in lay terms, with checking that the patient understands. Most SIBRs are completed in between 3 and 4 min. The interdisciplinary nature of the rounds helps avoid mixed messages and has trained our staff with the skills and system to provide succinct, pre-prepared summaries understandable to patients and ideally suited to forming a basis of a video record of the admission.

Despite good evidence that provision of information with video is helpful for patient comprehension and decision-making [8–12], we are not aware of prior utilization of audiovisual formats for provision of personalized interdisciplinary summaries at the time of hospital discharge. Our aim is to improve the quality and continuity of care when the patient returns to the community by improving the accessibility of information summarizing the admission to patients, carers and their health professionals. The recording is immediately available to the patient to take home at the time of their discharge so they can view it alone, with family and carers or with their GP as often as they require.

The aim of this study was to assess the feasibility and patient acceptance of CareTV to facilitate effective communication with patients, family, carers and other healthcare workers at the time of hospital discharge.

Methods

Study design

This was a descriptive pilot study conducted in a sample of general medical patients. Data were collected by a study-specific online or telephone questionnaire.

Sample and recruitment

Patients were recruited from an Acute General Medical Ward in a metropolitan teaching hospital (The Alfred Hospital, Melbourne, VIC) from October 2013 to June 2014. They were invited to participate if they were being discharged, spoke English, sufficiently well to give informed consent, were not in isolation care and were considered by their treating team to be likely to find the recording helpful in their transfer of care upon discharge. CareTVs were recorded in the patient’s allocated room regardless of whether they were in a single-, double- or four-bed room.

Procedures

All patients and staff participating in the CareTVs provided informed consent prior to filming CareTV. Consent was further confirmed on video at commencement of recording of each CareTV. CareTV was recorded at the patient’s bedside and included at least the patient, a consultant general physician, HMO, pharmacist and nurse with optional attendance by an allied health representative where appropriate. Relatives and carers were invited to participate if present and also provided consent. CareTVs were recorded either as part of the SIBR round or, more commonly, soon afterward. Each video was conducted with reference to a standardized script (see Appendix) that included introductory information, diagnoses, major investigation results treatment response and the discharge plan including specific advice from the pharmacist regarding changes to medications. The hospital’s lawyers contributed to the development of this script.

A Logitech C920 camera incorporating a directional microphone was placed on a level surface beside the patient’s head (e.g. bedside table) so that staff addressing the patient were also addressing the camera. The camera was connected by a 2-m lead to a mobile computer, either a laptop on a trolley or a workstation on wheels. Immediately after completion, the video was copied to a customized USB and given to the patient unless the patient requested a DVD instead. The USB was preloaded with VLC (VideoLan) software to facilitate viewing on most commonly used computers. A Microsoft Word file was included on the USB with information regarding CareTV and a web link to an online survey using Survey Monkey software. A copy of each video was retained in a hospital computer.

During the last few moments of the recording, participants were reminded on camera by the physician conducting the CareTV to complete the online survey after viewing it (post-discharge from hospital). Patients who had not completed the online survey (within 2 weeks of discharge) or had received a DVD rather than USB were contacted by our research nurse and invited to complete the survey by telephone.

Telephone interviews were conducted by the same experienced trained research nurse to ensure consistency. The research nurse entered the data from the telephone interviews into the online survey and repeated the questions and responses back to participants to confirm accuracy. Social desirability bias was minimized through the use of fixed-choice response options and questions that mostly did not deal with personal or socially sensitive content.

Ethics approval for this study was provided by the Alfred Health Human Research and Ethics Committee (reference number 577/13, 18/12/2013).

Measures

The questionnaire was developed specifically for this study and consisted of eleven questions. Feasibility and patient acceptance of CareTV was assessed through questions about utilization of the USB/DVD, perception of technical quality, patient recall of diagnosis,
medication changes, follow-up appointments and patient satisfaction with the option of free text comments to many of the questions. Participants’ age and sex were also sought.

Accuracy of recall was confirmed by comparing patient’s recall of their diagnosis, medication changes and post-discharge review arrangements to hospital records including the CareTV.

Data analysis
Quantitative data from the questionnaire were entered into Microsoft Excel for analysis. Descriptive statistics were used to summarize and describe the data. Free text comments were entered into a Microsoft Word document. Thematic analysis was used to categorize the comments according to themes.

Results
Twenty patients consented to participate after invitation by their responsible medical team and completed the questionnaire either online ($n = 5, 25\%$) or by telephone ($n = 15, 75\%$). Thirteen patients were male and seven female with a mean age of 70.2 years (range 22.9–91.3 years). The mean time delay between discharge and responding to the survey was 9 days. Six patients had a relative present when the CareTV was recorded.

Seventy-five percent of patients ($n = 15$) received the CareTV video on USB, 15\% ($n = 3$) on DVD and 10\% ($n = 2$) on both USB and DVD. All patients remembered receiving the video and all had watched it at least once. All patients found the technical quality (ease of playing, picture quality, sound quality and ease of understanding of the words used) to be either excellent or adequate (Fig. 1) although some patients commented that they had sought assistance from friends or relatives to view their video. Twenty percent of patients ($n = 4$) had watched the video once, whereas 55\% ($n = 11$) had watched it two or three times and 25\% ($n = 5$) had watched it on more than four occasions. With regard to sharing of the information, 90\% of patients ($n = 18$) had watched their CareTV with family, 20\% ($n = 4$) with a friend, 15\% ($n = 3$) with their GP, 5\% ($n = 1$) with a treating specialist and 5\% ($n = 1$) with another health provider.

Patients were questioned about their recall of their diagnosis and medications. Ninety-five percent of patients ($n = 19$) stated they could recall the name of the medical condition that caused their illness and the diagnosis reported was correct by broad category (for example, heart failure, cirrhosis of the liver, irregular heartbeat, atrial fibrillation (AF) and dizziness with no cause identified). Ninety percent of patients ($n = 18$) recalled that their medications had been changed in hospital, 5\% ($n = 1$) was unsure and another 5\% ($n = 1$) could not remember. Of these 18 patients, 61\% ($n = 11$) recorded specific drug changes in the comments section for this question. Several patients ($n = 9, 45\%$) commented that after seeing the CareTV, their family (especially those who had not been present at discharge) had greater understanding and knowledge of their diagnosis, health condition and medication changes as a result of ‘hearing it from the “horse’s mouth”’ rather than the patient who could not always remember what they had been told.

All 20 patients recalled advice to visit their GP after discharge, 50\% ($n = 10$) recalled advice to visit a hospital clinic, 50\% ($n = 10$) to visit a private specialist, 40\% ($n = 8$) to have a district nurse visit and 45\% ($n = 9$) regarding an allied health review. One patient commented that watching CareTV when she got home reminded her that she needed to contact her GP to organize a follow-up test.

All patients were extremely or moderately satisfied with their CareTV and extremely or very likely to recommend CareTV to other patients leaving hospital (Fig. 2). Patients ($n = 10, 50\%$) commented that CareTV was ‘very helpful’ and a ‘good idea’, which should be made available for all patients and provided them with more information than a paper discharge summary.

The mean duration of CareTV was 5.2 min (range 1.6–12.4 min), average file size was 123 megabytes (range 43–363) and USB size was 2 gigabytes. The duration of the CareTVs varied depending primarily on the complexity of the patient’s illness and questions asked by the patient’s or family. Cost of branded USBs with preloaded software and Word files was approximately AUD8.

The vast majority of ward staff were willing to participate on camera during filming of CareTVs. Staff who did not want their image captured were able to supervise and/or comment off camera.

Discussion
The aim of this study was to assess the feasibility and patient acceptance of a personalized interdisciplinary audiovisual record to facilitate effective communication with patients, family, carers and other healthcare workers at the time of hospital discharge. Traditional methods of completing and delivering discharge summaries are suboptimal for communicating timely, accurate and medically important patient data to patients, their carers and the physicians who will be responsible for follow-up care [1, 4, 13, 14]. There is an urgent need for improvements to the processes and formats used for transferring information to patients and primary care physicians at hospital discharge [1, 4, 14]. Well-designed information technology has considerable potential to improve communication [15–17].

![Figure 1 Patient perceptions of technical quality of the CareTV.](image-url)
This pilot study has demonstrated that provision of a personalized audiovisual interdisciplinary discharge summary (CareTV) to selected patients is both technically feasible and well received by patients. The SIBR is brief enough to permit digitized video and sound recording onto a USB (CareTV). With appropriate preparation, a substantial proportion of the most important information can be provided in a few minutes on the CareTV (see SIBR script in Appendix) whereas full details of the admission are included in the written discharge summary provided to every patient’s GP. The equipment required for CareTV is inexpensive and readily available, including only a portable computer or laptop and digital camera with incorporated microphone and inexpensive USB stick.

Video is a powerful and underutilized medium that can assist physicians in discussions with patients about their health and increase patients’ understanding of their medical condition [8]. The results of this pilot study suggest that the use of video to provide a discharge summary is feasible and acceptable to the patients who participated in this study and may enhance patient knowledge of diagnosis, medication changes and follow-up arrangements.

This study is limited by the use of a selected sample of patients which may have biased the results, and its applicability to a wider population remains to be determined. Although patient perceptions were strongly positive, it is unclear what proportion of the whole patient population would be prepared to participate in this form of discharge process and how many unselected patients would be able to consent to filming of the video or successfully view the information after discharge.

It has been suggested that effective discharge planning contributes to positive patient outcomes including reduction in unplanned readmissions and post-discharge adverse events, and an increase in patient and carer satisfaction [4, 18, 19]. In this pilot study, CareTV was found to be feasible and acceptable to patients, but the absence of any control patients precludes any conclusion regarding the contribution of CareTV to outcomes of patient’s recall of admission, medication changes and follow-up arrangements, and measurable outcomes of patient length of stay, medication compliance and readmission rates, all of which will require detailed further evaluation.

The results of this pilot study will be used to inform and indicate the feasibility of conducting a larger randomized control trial of the impact of CareTV on patient satisfaction, medication adherence and recall of key information, and primary healthcare provider satisfaction.

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References


Introduction

Doctor: Mr/Ms X, I am Dr ____________ and as mentioned earlier, this will be your video record to help us transfer your care when you leave hospital. We will also be sending a written paper discharge summary to your GP but please ensure you take your CareTV video with you when you see your GP next. Is it OK with you if we make the recording? [If consent is given, proceed]

Today is (date ….). We are the General Medical team on ward 4AMU/4GMU and we are planning to send you home (this afternoon/today/tomorrow)

Team introduction: bedside nurse, consultant and “rest of the team”

Summary

- Presenting symptoms and final Diagnosis,
- Major investigations (that justify the diagnosis or cause doubt),
- Treatment and
- Response.
- Outstanding investigations still to be completed/results to be checked at followup and followup appointments (made or planned).

Invite patient/family to comment or ask questions.

Bedside nurse’s report – including follow-up arrangements

Pharmacist’s report – changes to medications with reasons if possible

Allied health report

Consultant/registrar to summarise main points and conclude with:

“We are trying to improve our CareTV process. Please complete the relevant feedback survey via the weblink included on any of the following:

- the patient information sheet
- the word file included in the USB
- the label of the DVD.”

Finally: (to the rest of the team) Anything else we should add?

Then

1. Switch off the recording
2. Rename the CareTV in the CareTV folder to the patients UR number followed by their surname (no gaps).
3. Copy this file to the USB.
4. Open the file on the USB to confirm that you have the correct video for that patient and to check the recording has worked.
5. Give the USB/DVD to the patient in the CareTV envelope with a copy of the patient information sheet included.
6. Document in the history that a CareTV has been recorded.
7. Confirm that a participant from the CareTV writes/reads the written discharge summary to avoid mixed messages.

Appendix

Care TV

CareTV script for medical staff (the usual format to be followed for the pre-discharge SIBR) 15/1/2014

NB: aim to complete in 3–4 minutes. Responsible consultant must authorise the CareTV recording. Patient and staff involved must have consented beforehand.