When can I go home? A prospective case control study to improve communication with patients regarding their diagnosis, treatment plan and likely discharge date

David Murphy, Rebecca Crowley, Anthony Spencer, Mark Birch

Abstract

Aim This study aimed to improve our ability to communicate with patients with regard to four key issues. Their diagnosis, treatment plan, clinical criteria for discharge and estimated discharge date.

Methods This was a prospective case control study. It involved 200 general medical patients admitted to Christchurch Public Hospital. Each day there were two general medical admitting teams. One team formed the control group and the other team the intervention group. The 100 patients in the control group had their consultant ward round as normal. The 100 patients in the intervention group had a consultant ward round and were provided with additional written information answering the following four points: (1) their diagnosis (2) management plan for the day (3) clinical criteria for discharge and (4) estimated date of discharge. This was a laminated sheet that remained attached to their bedside locker. At four or more hours after the ward round every new patient would undergo a questionnaire based interview addressing their ability to correctly answer the points listed above. A comparison was then made between the intervention and control groups. A subgroup (n=30) were selected to obtain feedback on the initiative.

Results 90% of respondents from the intervention group knew their diagnosis versus 59% of the control group (p<0.01). 76% knew their treatment plan for the day versus 41% (p<0.01). 76% knew some of the clinical criteria for safe discharge versus 25% (p<0.01) and 83% of the intervention group knew their estimated discharge date versus 52% of the control group (p<0.01). The median age of the patients in the intervention group was 78 years of age and 74 for the control group (p>0.05). Of those that gave feedback70% believed the intervention was helpful in helping them understand their diagnosis and 70% believed knowing their likely discharge date was useful.

Conclusion The use of a card with written information for the patient regarding their diagnosis, treatment plan, clinical criteria for safe discharge and estimated discharge date at the bedside helped improve the patients understanding of their care and aided effective communication.

Consumers of our health service have a number of rights under the Code of Health and Disability Services. Two of which have particular relevance to this paper. Patients have a fundamental right to understand their working diagnosis. They are equally entitled to information regarding a proposed management plan and all investigative techniques required.

For a variety of reasons however our patients understanding of these issues remains poor. For example Horwitz et al\(^2\) enrolled 395 patients of which only 59.6% were able to describe their diagnosis at the time of discharge. Amgad et al\(^3\) found 41.9% of their patients were able to accurately describe their diagnosis with a smaller study number.

Coleman et al\(^4\) undertook a randomised controlled trial into the usefulness of providing dedicated information to patients on discharge regarding their diagnosis, medications and follow up. They found a statistically significant difference in readmission rates at 30, 90 and 180 days post discharge. Discharge from hospital therefore should be a planned event with clear lines of communication between doctor and patient. Horwitz et al\(^2\) reported 30% of inpatients in their study receiving less than 1 day’s notice of their impending discharge.
Clearly improved communication has a role to play. There is a large body of research that has looked at methodology designed to improve doctor patient communication skills.

Patients in hospital often experience many hours of inactivity. Meanwhile there are severe time constraints on the medical staff. District Health Boards must find a solution to engage the patient and improve their understanding through written communication tools as an adjunct to the pre-existing verbal communication. Greysen et al\(^5\) embraced this concept recently with a pilot study into the use of tablet computers to engage patients in their care through access to their health record as well as a safety video about the hospital.

Given the importance of inpatient communication, how do we improve our strategy? We focused on four important questions regarding patients care and implemented a tool to try and improve the patients understanding of them. It is the patient’s right to know the answer to these but also understanding them may have a role in reducing readmission rates.

**Methods**

This was a prospective case control study carried out in the General Medicine Department at Christchurch Public Hospital.

The department has a total of 12 general medical teams. Each team consists of a consultant physician, a registrar, a house officer and a trainee intern. Each day there are two admitting medical teams. As patients present to hospital during any 24 hour period they are assigned alternately to each team. On average each team has between 14 and 22 patients to see on the consultant ward round the following day.

One admitting team formed the control group of the study whilst the other formed the intervention group of the study. Both the control and intervention groups were therefore similar in terms of patient numbers and staffing. The intervention groups were led by nominated consultants and so there was no cross over between the control and the intervention group.

The intervention tool took the form of a laminated sheet with four key points explained for the patient. (1) Their diagnosis/diagnoses, (2) treatment plan, (3) the clinical criteria for safe discharge and (4) their estimated discharge date. These four points were generated from internal departmental agreement with significant insight from Dr Sturgess. For both teams the post-acute consultant led ward round continued as normal. For the patients in the intervention group, a completed laminated information sheet, following the clinical encounter, was provided. Details were completed by the medical team on the round and placed at the patient’s bedside. Those patients under the care of the control group would have the normal clinical encounter without any intervention.

Following the ward round, the first and second authors conducted an interview with all patients under the care of both the intervention and control groups respectively of the study. The interviewing physicians were independent of the two teams. Verbal informed consent was obtained prior to the interview. These commenced at approximately 1200 each day and started with the patients who had been seen first on the post-acute ward round at approximately 0800 that morning.

Only patients who had been admitted to the ward were included. Each patient had their clinical records assessed for any evidence of an exclusion criterion. This included delirium, cognitive impairment, communication difficulties, visual impairment, inability to read or a clinical state that would have made a research based interview inappropriate. These patients were omitted from the study.

Each patient was asked to answer each question based on a questionnaire (Figure 1). Their responses were then compared to the information on the laminated sheet (intervention group) or in the patients’ medical notes (control group).

The number of correct answers for both the control group and intervention group were then compared using chi square testing. P-value less than 0.05 was considered statistically significant. The analysis was carried out using SPSS v17 software.
Figure 1. Questionnaire assessing patient level of understanding

<table>
<thead>
<tr>
<th>Ward Questionnaire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you know what is wrong with you? (Do you know your diagnosis?)</td>
</tr>
<tr>
<td>What is your treatment plan today/tomorrow?</td>
</tr>
<tr>
<td>What do you have to achieve to get home?</td>
</tr>
<tr>
<td>When are you going home?</td>
</tr>
</tbody>
</table>

Figure 2. Post discharge questionnaire

<table>
<thead>
<tr>
<th>Follow up Questionnaire</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Do you remember a piece of paper/laminated sheet beside your bed about your diagnosis and hospital stay?</td>
</tr>
<tr>
<td>2. Did it help you to understand what was wrong with you and what had to happen to get you better and home?</td>
</tr>
<tr>
<td>3. Did being told when you were likely to go home help? If so, how did it help?</td>
</tr>
<tr>
<td>4. What else could we have added or done that you think would have helped with your understanding of what was wrong with you?</td>
</tr>
</tbody>
</table>

The final aspect of the study was to obtain feedback from patients regarding the intervention tool. This was done via subset analysis. The first day of the study 30 patients were enrolled in the intervention group. A follow up phone call was placed to these patients (3 were not contactable) within 24 hours of their discharge. They were asked the questions based on a second questionnaire (Figure 2).

Results

The study included 200 patients (100 in the control group and 100 in the intervention group), 53% were female. Median age was 76 years and the most common diagnosis was pneumonia. Median length of inpatient stay at the time of interview was 1 day.

The control group consisted of 47% female patients. This compares to the intervention group where 58% were female. The median inpatient length of stay for both groups was 1 day with a range of 0-14 for the control group and 0-10 for the intervention group. The most common diagnosis for both groups was pneumonia. The median age for the control group was 74 years of age (17-94) younger in comparison to the intervention arm of 78 years of age (31-97). This age difference was not found to be statistically significant.

Of the 100 patients in the control group 59% knew their diagnosis, 41% knew their management plan for the day, 25% knew the clinical criteria for their safe discharge and 52% knew their estimated discharge date. This compared to the intervention group where 90% knew their diagnosis 76% understood the management plan, 76% knew the obstacles for their safe discharge and 83% knew their likely discharge date. This is approximately a 30% improvement in all areas targeted by the
intervention tool. Indeed there was a statistical difference noted between both groups of the study with a comparative table given below (Table 1) with p-values included.

### Table 1. Comparative table of both patient groups

<table>
<thead>
<tr>
<th>Question</th>
<th>Correct (%) intervention group</th>
<th>Correct (%) control group</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you know what is wrong with you?</td>
<td>90</td>
<td>59</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>What is your treatment plan for today/tomorrow?</td>
<td>76</td>
<td>41</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>What do you have to achieve to get home?</td>
<td>76</td>
<td>25</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>When are you going home?</td>
<td>83</td>
<td>52</td>
<td>&lt;0.01</td>
</tr>
</tbody>
</table>

The admitting teams changed every day which meant that both the control group and the intervention group of the study had a different consultant and different team members daily. Given that some teams may have possessed more effective communication skills or had more time with their patients, the data has been presented for all the different teams combined.

**Patient feedback**—The final aspect of the study was to ascertain if the patients found the tool useful and for any feedback/suggestions that they felt would be helpful. This was accomplished as discussed above through a follow up phone call 24 hours post discharge from the hospital and the use of a further questionnaire (Figure 2). The results are enclosed below in Table 2.

### Table 2. Patient feedback to intervention tool used

<table>
<thead>
<tr>
<th>Question</th>
<th>Percentage positive responses (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you remember a white piece of paper beside your bed about your hospital stay?</td>
<td>93(25)</td>
</tr>
<tr>
<td>Did it help you understand what was wrong with you and what had to happen to get you better and home?</td>
<td>70 (19)</td>
</tr>
<tr>
<td>Did being told when you were likely to go home help?</td>
<td>70 (19)</td>
</tr>
</tbody>
</table>

Interestingly 2 patients did not remember the intervention tool by their bedside so one could assume this was not useful for them which would make the other questions suitable for only 25 patients. Of those that remembered the laminated sheet, 76% found it useful. “The ability to plan” was the most frequently quoted reason why the potential discharge date was helpful. Other responses included “the psychological impact” and “having something to aim for.” Only 1 patient suggested an addition to the information sheet. They suggested adding the times at which doctors rounds would occur during the morning.

Some if not all of the issues featured on the laminated card are addressed commonly by patients and their family. Feedback from the nursing staff indicated that the intervention tool was useful for providing family members with accurate information when the doctors were not there. The current format may provide an ideal mechanism to both improve patient knowledge and autonomy and also to ease pressure on nursing and medical staff to provide updates to multiple family members.
Discussion

This paper had a number of limitations. It did not take into account the added resource required to fill in an explain the intervention tool. If it was time consuming or a hindrance this may impact on its usefulness going forward and further research may be indicated here.

The control teams were not blinded to the study, as the intervention tool was clearly visible on the ward, however they were not given any instructions to specifically address each of the components of the intervention e.g. to tell the patient their diagnosis, plan for the day, clinical criteria for discharge and estimated discharge date during their normal clinical encounter. Had this been the case and the intervention tool retained its statistical difference then the case for the tool would have been stronger. However we felt that we wanted to compare the intervention tool with current practise.

It could be that the extra time spent by the intervention group explaining the content and process of the intervention tool had a significant affect in improving the patients understanding of their diagnosis and plan, rather than simply the tool itself. For this to be excluded as an effect one would need to measure how much time was spent explaining the diagnoses and plan with each group of patients. In this study patients who were confused for any reason were excluded due to the difficulty in obtaining information for comparative purposes. Clearly if the intervention tool was to be implemented throughout the hospital then these patients would also receive a copy. These are the patients for whom written information may have the greatest benefit in providing a reminder for the patient and as a useful piece of information for the family and next of kin. This could be studied separately.

This paper did not address whether the intervention tool had any effect on patient length of stay, failed discharges or readmission rates. This too could be studied separately.

The intervention tool was well received with positive feedback from the follow up calls. The lack of additional suggestions from these calls supports the current content of the information sheet. With this in mind the fundamental pieces of information that patients are requesting are small in number and relatively straight forward to answer. Indeed most should be formulated normally during each patient encounter with the obstacle being simply the effective communication of this information to the patients. Many factors make this interaction difficult and are not all due to poor physician communication skills. People require time to assimilate information. Given the relative complexity of medical matters and the short interaction with a medical team on rounds, the information sheet seems an appropriate inclusion at the bedside, referenced to as needed throughout the day by both patient and family.

The introduction of the information sheet clearly helped to improve our patients knowledge across the issues targeted by the intervention tool with a 30% improvement across each issue and a statistical difference between the intervention and the control group. The 59% of people knowing their diagnosis in the control group is consistent with the figure found by Horwitz et al which is reassuring from a methods point of view but overall unsettling from the patients perspective.

The intervention tool has now been expanded to all teams in the general medical department in an effort to improve communication with our patients. It will be the subject of further study to try and determine its generalisability to other departments.
Competing interests: Nil.

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References