

Original Articles

Effective acute care handover to GP: optimising the structure to improve discharge documentation

K A Lockman¹

MBBch, MD, FRCP
Consultant Physician
Acute Medical Unit, Royal
Infirmary of Edinburgh

W H Lee¹

MBChB
Core Medical Trainee,
Acute Medical Unit, Royal
Infirmary of Edinburgh

R Sinha²

MBBS, MRCP
Clinical Research Fellow,
Liver Unit, Royal Infirmary
of Edinburgh

W L Teoh¹

MBChB, FRCP
Consultant Physician,
Acute Medical Unit, Royal
Infirmary of Edinburgh

C Bickler³

MBChB, FRCGP
Edinburgh Community
Health Partnership, Astley
Ainsley Hospital

S Dummer¹

MBChB, MRCP
Consultant Physician,
Acute Medical Unit, Royal
Infirmary of Edinburgh

A Veiraiah¹

MBBS, MRCP
Consultant Physician,
Acute Medical Unit, Royal
Infirmary of Edinburgh

KA Lockman, WH Lee, R Sinha, WL Teoh, C Bickler, S Dummer & A Veiraiah

Abstract

Time and resource constraints have often led to the use of assessment records as discharge communications from acute and emergency departments. However, whether this addresses the primary care needs has not been demonstrated. This study examined the optimal structure that can impart key discharge information effectively using feedback from general practitioners (GP). We implemented an electronic assessment template that focused on the most relevant headings. Prespecified process measures were examined and qualitative thematic analysis of free-text comments from GP surveys were conducted to optimise the document. Our findings suggest that the structure of a discharge summary can influence the quality of information, users' compliance and readers' perceptions of the length of the letter.

Keywords

Discharge summary, quality improvement, acute care, primary care

Abbreviations

GP; general practitioner

Key points

- The structure of a discharge summary can influence the quality of information, users' compliance and readers' perceptions of the length of the letter.
- Diagnosis, changes to medications, action for GP and follow up arrangement are the key information in a discharge summary.
- GPs prefer the key information to be highlighted at the top of a discharge letter.
- A separate section for brief handover using relevant headings for key discharge information can improve communication to GPs.

Introduction

Effective discharge communication is pivotal to a seamless transition of care between hospital and community. Hospitals traditionally use a discharge document to provide general practitioners (GPs) with a summary of diagnosis, treatment and follow-up plan. Studies have shown that delays, inaccuracies or deficits in discharge information can lead to errors and adverse events, including readmissions.¹⁻⁴ The advent of electronic discharge summaries has addressed some of these inadequacies, especially poor legibility and timeliness.⁵⁻⁷ Its impact on quality of information is still uncertain, prompting recommendations of mandatory fields to be included in discharge summaries.⁸⁻¹⁰

Ensuring that mandatory fields are utilised appropriately can be challenging.¹¹ Previous reports suggest that this may be achieved by provision of comprehensive feedback, perhaps coupled with non-monetary incentives or through classroom education followed by individual reminder sessions.¹²⁻¹⁵ However, such interventions are highly effort intensive and difficult to deliver in acute and emergency units that discharge patients within a few hours. Delivering a reliable discharge process in these units can be difficult; high turnover, resource

and time constraints can potentially have a negative impact on the quality of discharge communication. Further, information documented during clinical assessment for such a brief stay will be invariably similar to that included in a discharge summary. A separate discharge summary can potentially lead to a duplication of effort and inefficiency in the process.

For these reasons, in our institution, the electronic assessment document for patients who are discharged within four hours of acute presentations to hospital is also used as the discharge letter to GPs. However, a brief review of these documents from our unit revealed wide disparities in content, template use and readability. Consequently, information provided to GPs was inconsistent. The problems were not limited to inadequate or inaccurate documentation. Overly verbose or inclusive discharge documents can detract a GP's attention from pertinent points.¹⁶ Many discharge documents did not provide clarity on what was expected from a GP in the community.

The introduction of electronic templates with preset headings as a prompt for key information can potentially mitigate some of these problems.^{11,17,18} We had previously created a structured document for our acute assessment. In this study, our objective was to build on this structured assessment record to develop

- 1 Acute Medical Unit, Royal Infirmary of Edinburgh, 51 Little France Crescent, Edinburgh EH16 4SA
- 2 Liver Unit, Royal Infirmary of Edinburgh, 51 Little France Crescent, Edinburgh EH16 4SA,
- 3 Edinburgh Community Health Partnership, Astley Ainsley Hospital, 133 Grange Loan, Edinburgh EH9 2HL

Correspondence

Khalida Ann Lockman
Department of Acute and
General Medicine,
Royal Infirmary of
Edinburgh,
51 Little France Crescent,
Edinburgh EH16 4SA
Email: ann.lockman@nhs.net

Effective acute care handover to GP: optimising the structure to improve discharge documentation

an effective and efficient discharge document. We aimed to use feedback from GPs to improve the structure of a discharge communication.

Methods

Setting

The Primary Assessment Area is a dedicated unit that provides acute medical assessment for patients who have been assessed by GPs (or non-acute hospital services) and referred directly to the acute physicians. The unit provides rapid medical assessment, investigation and treatment by a senior clinical decision maker. Patients are either discharged or transferred to the adjacent acute medical unit where a full admission process will be undertaken. Similar to an emergency department, the unit provides assessment within the four-hour waiting standard. Previously, either a paper-based or an electronic admission template was used to document the assessment for all patients presenting to the area. There was a wide variation in the admission template used and the headings were more appropriate for a longer stay in the hospital. Many of these headings were irrelevant for a brief four-hour stay and consequently, a significant proportion were unused.

Interventions

This is a quality improvement study with a two-step intervention. In the first step, we introduced an updated electronic focused assessment template in order to streamline medical assessment. We obtained feedback from GPs to assess the impact of this change. In the second step, we incorporated additional subheadings to cover key items as highlighted by GPs.

First intervention: focused electronic assessment template

The template comprised the following headings (in order of appearance): presenting complaint, history of presenting complaint, background, allergy, medications, social history, examination findings and management plan including a separate heading for communication to the GP. The users had the ability to delete the headings where appropriate. The template was incorporated into the electronic patient record (TrakCare, InterSystems Corp, MA, USA) and the integration allows the following information to be automatically populated in the header: patient's demographics, admission and discharge details, GP practice, consultant responsible and contact details of the area. The template was first tested on the 9th June 2014. Minor changes to the structure and wordings were made after tests of change as well as based on users' experience. After consultations with

stakeholders, the final version was introduced for clinical use on the 16th of June 2014. Guidance on discharge communication was always included in the induction of medical staff and in supervision. During the course of this study there was no change to education on discharge communication. The study did not include personalised feedback or specific staff training on writing discharge summaries other than advice on how the format could be accessed.

Process measures for first intervention

All consecutive discharges from 1st of March 2014 to 15th of September 2014 were included. The exclusion criteria were: discharges to ambulatory care, transfer to non-acute hospitals, attendance for ambulatory procedures and referrals that did not require full medical assessment such as referrals for blood tests. Referrals for potential venous thrombosis were excluded as a separate assessment proforma existed for these cases. Process measures were: mean variations in the total number of headings, mean of unused headings (defined as no data entered) and percentage of documents that incorporate plan for GPs (defined as completed section under the designated heading or, if the heading was unavailable, plans were outlined in the main body of text), changes in medications (defined as medicines plan on discharge irrespective of whether changes in dose or titration are specified) and diagnosis. These measures were chosen after examining the variations in a sample of discharge letters and agreed by consensus between three investigators (SD/KAL/AV). Both baseline and post intervention data were collected.

Outcome measure for first intervention: GP feedback

The first online survey was distributed to general practices within Edinburgh South in July 2014 using SurveyMonkey (SurveyMonkey, Palo Alto, CA, USA). An example of a focused assessment template was provided along with a discharge summary prepared using the most commonly used conventional assessment template as a comparator. Chest pain was the chief presenting complaints for both examples to allow direct comparison. Based on these examples, respondents were invited to choose the preferred structure based on a) readability; b) clarity of the document. A single free-text section was included at the end for comments.

Second intervention: incorporation of additional key subheadings

Based on views from survey respondents, additional subheadings were added to cover key items of interest to GPs. These subheadings replaced the heading 'communication for general practitioner' and could

Effective acute care handover to GP: optimising the structure to improve discharge documentation

be generated using a keyboard shortcut once the decision for discharge has been made. They were tested on the 8th of September 2014 and launched for clinical use on the 15th of September 2014.

Process measure for second intervention

All consecutive discharges from the periods of; 01st of August 2015 – 31st of August 2016 were included. Here, the process measures were examined after at least six months from the launch of the second intervention to enable the change to be fully embedded. Additionally, the interval would allow at least two periods of junior doctor changeover to reflect the engagement of staff who were not involved in the initial development and implementation of the interventions. The exclusion criteria were as outlined previously. Process measures were: the proportion of discharge letters using the right template, the mean number and proportion of documents with the key information irrespective of whether or not it was recorded under the appropriate subheadings.

Outcome measure for second intervention:

GP feedback

A second survey was distributed to all GPs within Edinburgh, Midlothian and East Lothian on the 8th of February 2016 through SurveyMonkey. Three examples of a completed discharge document with the key subheadings were provided. GPs were invited to choose the option best preferred based on: readability, clarity, clinical information required for ongoing care, time efficiency and overall utility. A single free-text section was placed at the end of the questionnaire.

Statistics

Statistical analyses were performed using IBM SPSS version 20.0 for Macintosh (IBM, Armonk, NY, USA). Data are presented as frequency and percentage of total respondents. The differences between the categorical groups were analysed using Chi Square test. Multiple and logistic regression analyses were performed adjusting for the number headings as well as users' grade where appropriate. *P* value of <0.05 is deemed significant.

Qualitative analysis of the free text data

Briefly, data familiarisation and immersion were conducted independently by three researchers (KAL, AV, RS). Broad concepts were coded and themes were identified inductively. The researchers then discussed and compared the themes. Data were cleaned, source data were annotated and themes allocation were checked. A thematic framework was devised using Microsoft Excel for Mac version 15.28 (Microsoft Corp, Redmond, WA, USA). The

frequency of theme appearance was recorded and Pareto charts were constructed.

Ethical and governance

This study was deemed to be a service evaluation by the governance committee in our institution hence no formal ethical approval was sought.

Results

The impact of focused assessment template

A total of 261 consecutive discharge documents were examined. Of these, 37.2% were prepared using focused template. Prior to the introduction of the focused template, at least four different structures were used with an average number of headings in all discharges of 15.3 (SD 10.6, *n*=138). Within six months of its introduction, the focused assessment template was used in 73.7% of the discharges, and the average number of headings for all discharges was reduced to 10.3 (SD 3.9; *n*=123) (Figure 1A). This was paralleled by a decrease in the average number of unused headings from 2.5 (SD 3.6) to 0.8 (SD 0.7) (Figure 1B). There was a positive relationship between the number of unused headings and the overall number of headings; the higher the number of headings presented to the user, the greater the proportion of headings left unused ($\beta=0.73$ (95% confidence interval (CI) 0.23, 0.29); *p*<0.001, adjusting for users' grade).

A feature of the focused assessment template was a designated heading for GP communication. When compared with conventional structures, the focused assessment template was associated with higher number of discharge documents where an action plan for GP was recorded (52.6% *vs.* 27.4%; *p*<0.001). Of the focused documents with GP communication, 72.9% of the action plans were documented under the designated heading. We found that a heading for GP communication in a template increased the likelihood that an action plan was recorded by three-fold (OR 3.4 (CI 1.9, 6.1)); *p*<0.001, adjusted for number of headings and users' grade). However, the use of focused assessment template was not associated with a significant change in the average number of key items (diagnosis, change in medicines and hospital follow up) recorded (1.3 (SD 0.9) with the focused template *vs.* 1.0 (SD 0.8) for the conventional structures).

General practitioners' views on the focused assessment template

A total of 43 GPs responded to the initial survey. Of these, 67.4% chose the focused assessment template document based on readability and 65.1% felt that it offered more clarity to the instructions. Among the

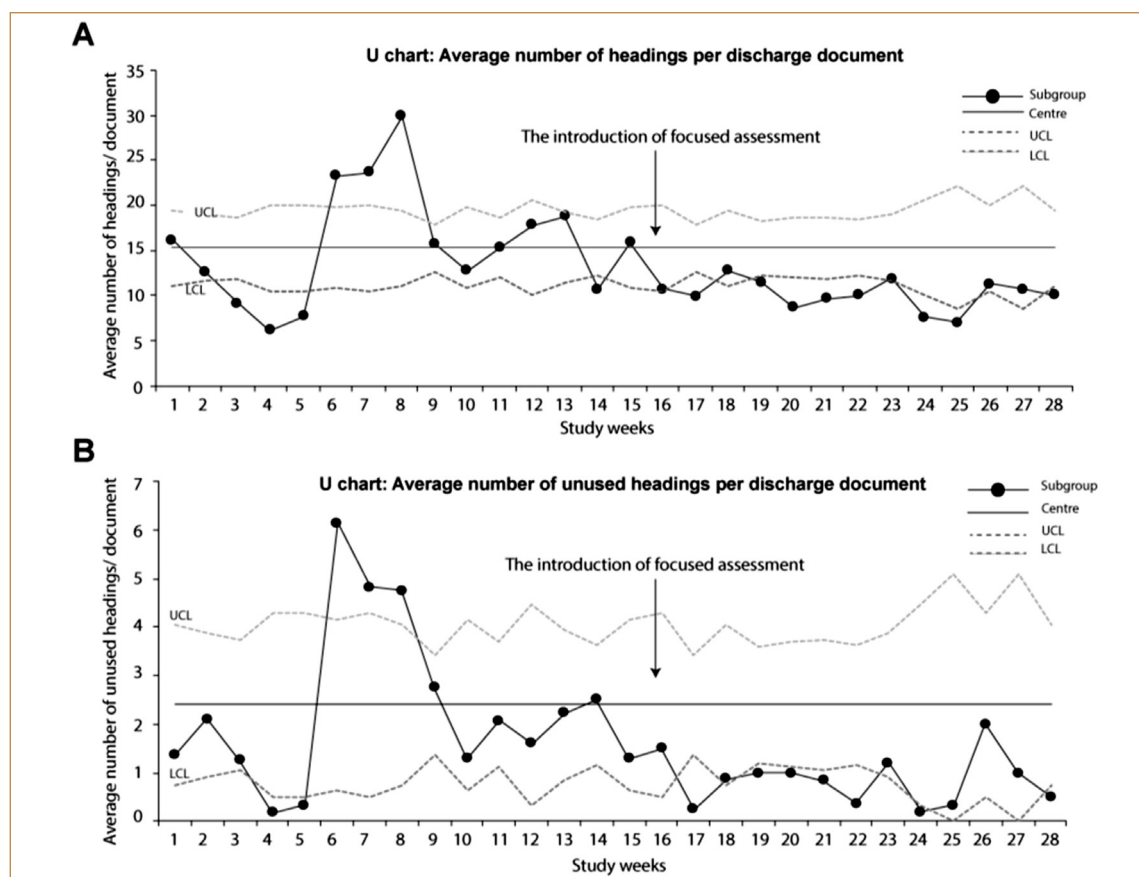
Effective acute care handover to GP: optimising the structure to improve discharge documentation

Figure 1. U-charts demonstrating A, the mean number of headings in a discharge document; B, the mean number of unused headings in a discharge document. The focused template was tested at Week 15 and launched at Week 16. The introduction of focused assessment template was associated with reduced total number of headings and unused headings in a discharge document. Special cause variation conditions met: three sigma variations, six consecutive points below mean. Control limits were extended from 14 weeks. UCL, upper control limit; LCL, lower control limit.

respondents, 34 provided free-text comments which contained 20 themes based on generic discharge documents from secondary care as well as on the examples given (Figure 2).

As shown in Figure 2, ‘actions for GP’ was the most frequent theme discussed. The responses also indicate that any action for GP should be clear and the tasks should be appropriate. An example from the survey was as follows:

“Avoid statements like “should have repeat ECG from GP within the next few days” 1. GPs don’t do ECGs. 2. What does “a few days” mean? 3. Why do you want an ECG done? What question are you asking and what outcomes do you want depending on the result?”

Another identifiable theme was ‘accurate history of medicines changes’, which covered a wide range of issues related to the medicines. The most common was the clarity of what have been stopped, started or adjusted and the underlying reasons for these changes:

“The most important discharges to get accurate are those patients on multiple medications. This is often the area of discharge letters that is not accurate

and we spend often inordinate amounts of time trying to decipher”

The core information required for ongoing care was clear throughout the responses:

“Clarity of diagnosis, follow up plan, medication changes and instruction requests for the GP are the most important issues”

Many comments proposed that the core information should be highlighted, for example in bold or in separate headings placed at the top of the discharge document to ensure effective communication:

“GP action points at top of letter in bold lettering, including any changes to medication. Stating changes or ‘no change’ to patients’ usual medication in every case-helpful if this is done under a separate paragraph at the top of the page”

Some respondents highlighted the importance of a concise discharge document and that core information can be lost in the body text:

“Anything buried in the text can easily be missed when you are receiving about 50–60 results/letters daily.”

Effective acute care handover to GP: optimising the structure to improve discharge documentation

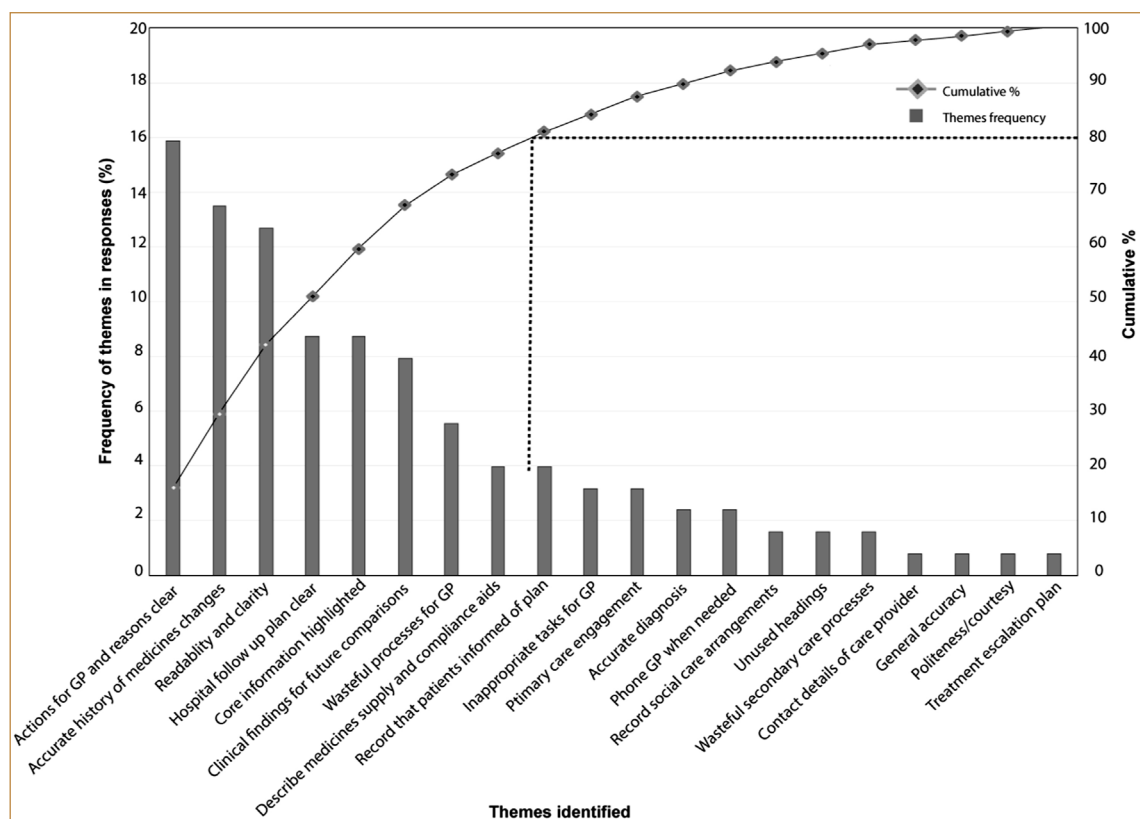


Figure 2. Pareto chart displaying general practitioner experiences relating to discharge communication. Themes were identified from the qualitative thematic analysis of the free-text data in the initial GP survey.

The use of additional subheadings for communicating key items

Based on our findings, we designed a short template comprising four key points to be added at discharge on top of the focused assessment template. The four key points were (in order of appearance): diagnosis, changes to medication (with subheadings for stopped/started/dose changes), action for GP and hospital follow up arranged. Users were instructed to add this template electronically on top of the completed focused assessment document once the decision for discharge had been made. This section replaced the heading ‘communication to general practitioner’ previously placed at the end of the focused assessment document.

We then examined 471 consecutive discharge documents. Of these, 207 (43.9%) were prepared using the focused assessment template with the additional four subheadings, 172 (36.5%) used the focused assessment template without the additional subheadings and the remaining 92 (19.5%) used free-text or alternative templates. Discharge documents completed using the additional subheadings had significantly higher documentation of: changes in medications (96.6% *vs* 66.9%; $p < 0.001$), follow up arranged (90.8% *vs* 22.7%; $p < 0.001$) and GP action plan (89.9% *vs* 29.7%; $p < 0.001$) when compared

with the use of focused assessment alone. The rate of diagnosis documentation was 100% for both templates.

When the composite of all four key items were considered, 80.5% of discharge documents with the additional subheadings incorporated all four key items, while 3.5% of discharge documents prepared with focused assessment alone and 1.1% of other templates contained all four key items. As demonstrated in the U-chart (Figure 3), the use of additional subheadings was associated with reduced mean number of missing key information in all discharges from 1.9 (SD 0.8) to 0.2 (SD 0.5).

General practitioners’ preferences for the structure of a discharge document

We then sought further feedback from GPs. Three examples of a completed discharge document were provided: 1) A focused assessment document with key subheadings placed at the end of the document; 2) A focused assessment document with key subheadings placed at the beginning of the document; 3) Key subheadings alone. Of 92 respondents, 69.6% preferred the template with key subheadings placed at the beginning of the focused assessment document (Figure 4A), and 70.7% of all respondents felt that this was the best way to share important clinical information (Figure 4B). Most respondents also felt

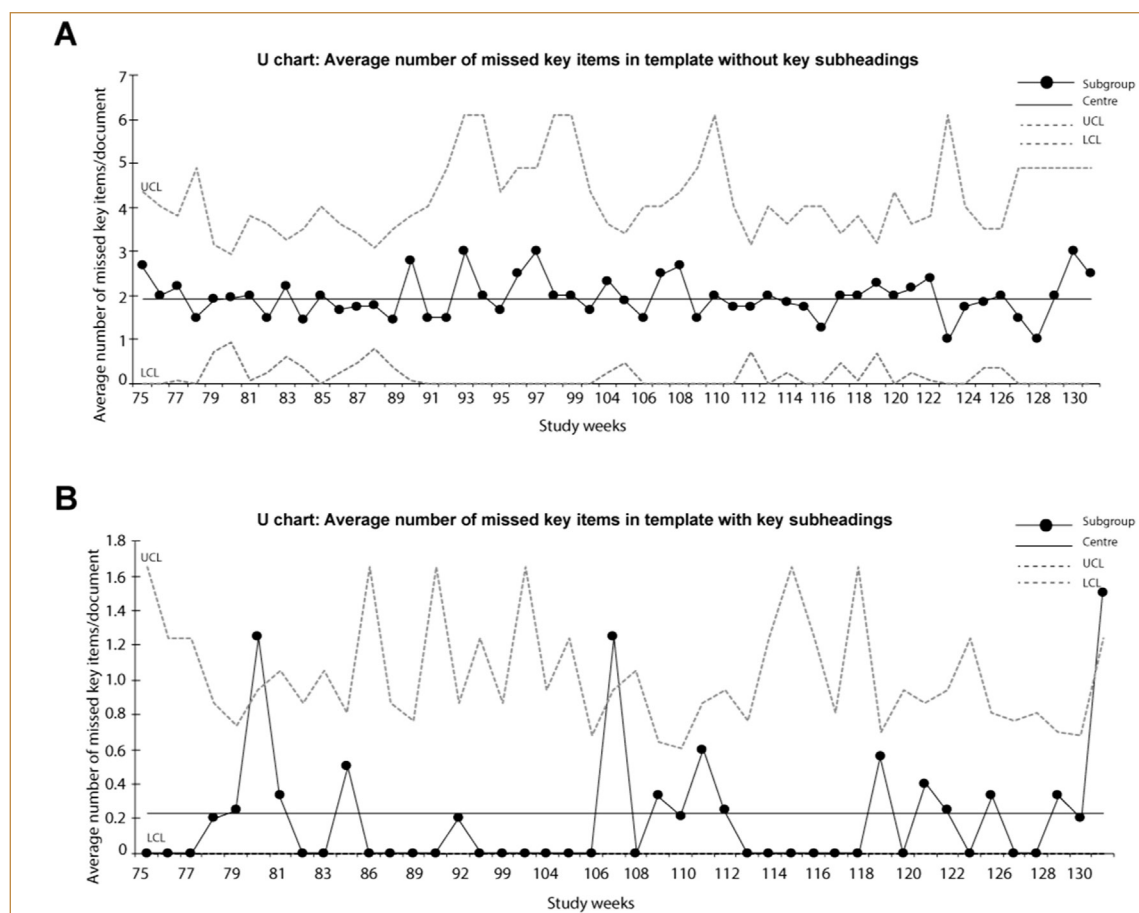
Effective acute care handover to GP: optimising the structure to improve discharge documentation

Figure 3. U-charts demonstrating A, the mean number of missed key items in template without key subheadings; B, the mean number of missed key items in template with key subheadings. The allocation of subheadings for the key items (diagnosis, changes in medicines, hospital follow up and action for GP) was associated with increased communication of the information in a discharge summary. UCL, upper control limit; LCL, lower control limit. Note: The Y axis scales are different in the two charts.

that the template with key subheadings placed at the beginning was better based on clarity (65.2%) and readability (57.6%) (Figure 4C and D). However, less than half of the respondents considered the structure to be time-efficient (Figure 4E).

Qualitative feedback on the key subheadings from general practitioners

A total of 39 respondents provided free-text comments, which comprised 14 themes. The most common themes that emerged were 'clinical findings for future comparison' and 'core information summarised' (Figure 5). The theme 'core information summarised' was largely associated with positive comments related to the key subheadings placed at the beginning of the focused assessment document. The respondents felt that this structure allowed GPs to capture relevant information with the option of more detailed information:

"GP actions at top (sic)-quick and clear/easy to read. Then more detailed info below if GP wishes to read further/has time"

Several respondents seemed to find the focused assessment document with key discharge subheadings placed at the end to be longer than when the same information was provided with the key discharge subheadings placed at the beginning. This suggests an interesting possibility that the sequence in which information is provided can influence the perceived length of the documents.

Respondents also commented on other aspects of discharge communication that can lead to preventable increase in workload for GPs. One such process was that of sending multiple versions of discharge letters (immediate letter followed by amendments to create a 'final' discharge letter), and via different means (copies received electronically and handed in by patient). This can result in GPs having to allocate resources to check for incremental changes. These issues are classified separately as the theme 'wasteful processes for GP'.

A positive theme that recurred throughout both surveys was that GPs were very happy to be involved in improving the quality of discharge documents,

Effective acute care handover to GP: optimising the structure to improve discharge documentation

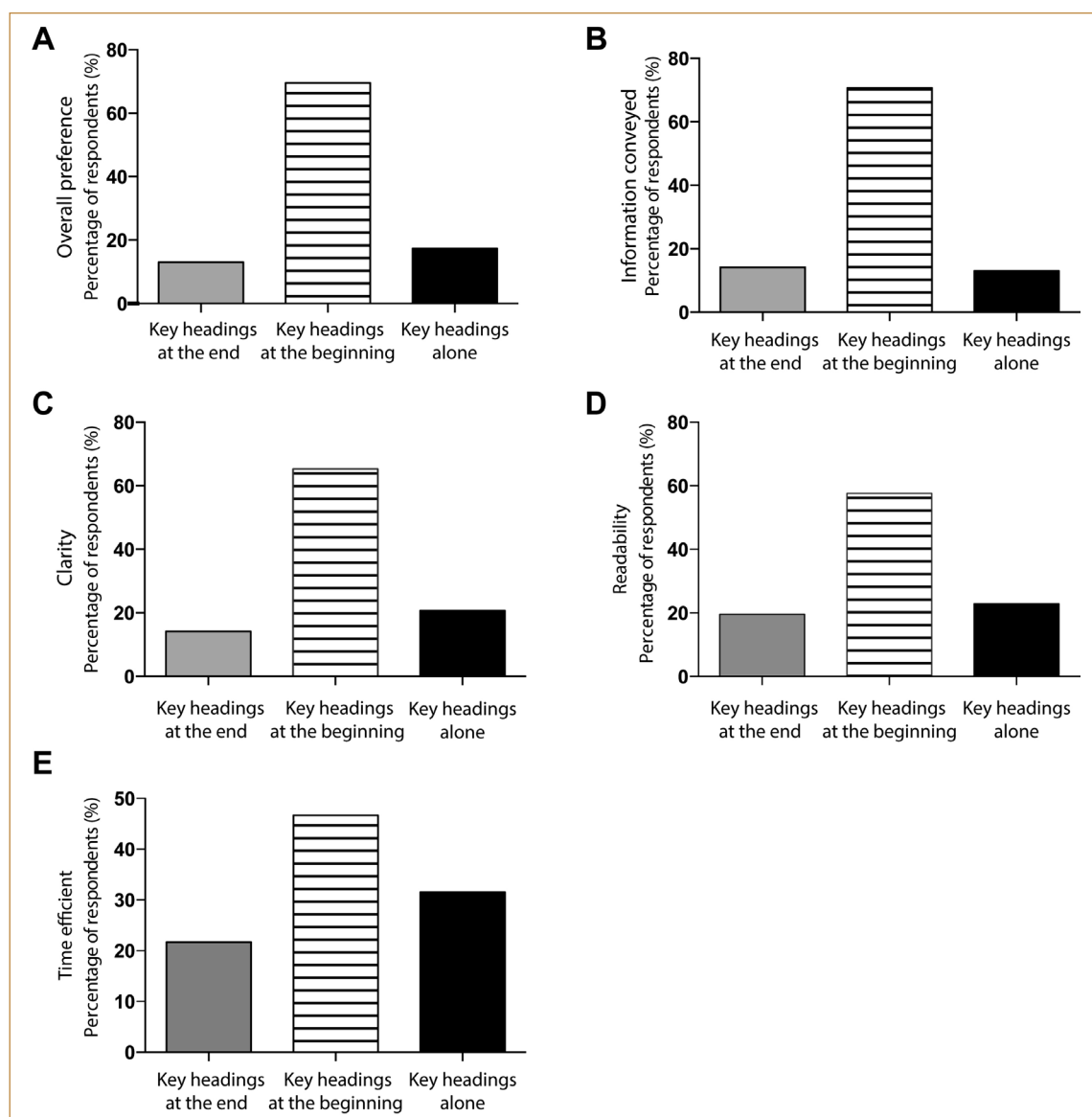


Figure 4. General practitioners' preference of a discharge document structure based on A, the overall preference; B, clinical information conveyed; C, clarity; D, readability and E, time efficient. Three examples of a completed discharge document with the same clinical scenario were provided: 1) A focused assessment document with key subheadings placed at the end of the document; 2) A focused assessment document with key subheadings placed at the beginning of the document; 3) Key subheadings alone.

and indeed felt that their involvement was essential for developing effective changes in this area. One of the respondents commented:

“Thank you so much for actually asking for our opinions. Sadly, it seems to happen so rarely that secondary care asks primary care for anything like this”

Discussion

In this study, we demonstrated the utility of an assessment record as the basis of discharge document. Through an iterative process, we developed a format through which a brief summary of key information, as identified by GPs, could be entered to a discharge

document. GPs expressed the preference for the summary of the key information to be presented at the top of the discharge communication; this would allow them to read the more detailed information when necessary.

Given the daily volume of discharge information received by a GP, information should be relevant and structured such that it is clear and can be captured immediately. To this end, the structure of a template is crucial. A structure can influence the quality of information, users' compliance as well as the overall clarity and readability of a document. The provision of headings is central to a structured document. Headings organise the information into segments,

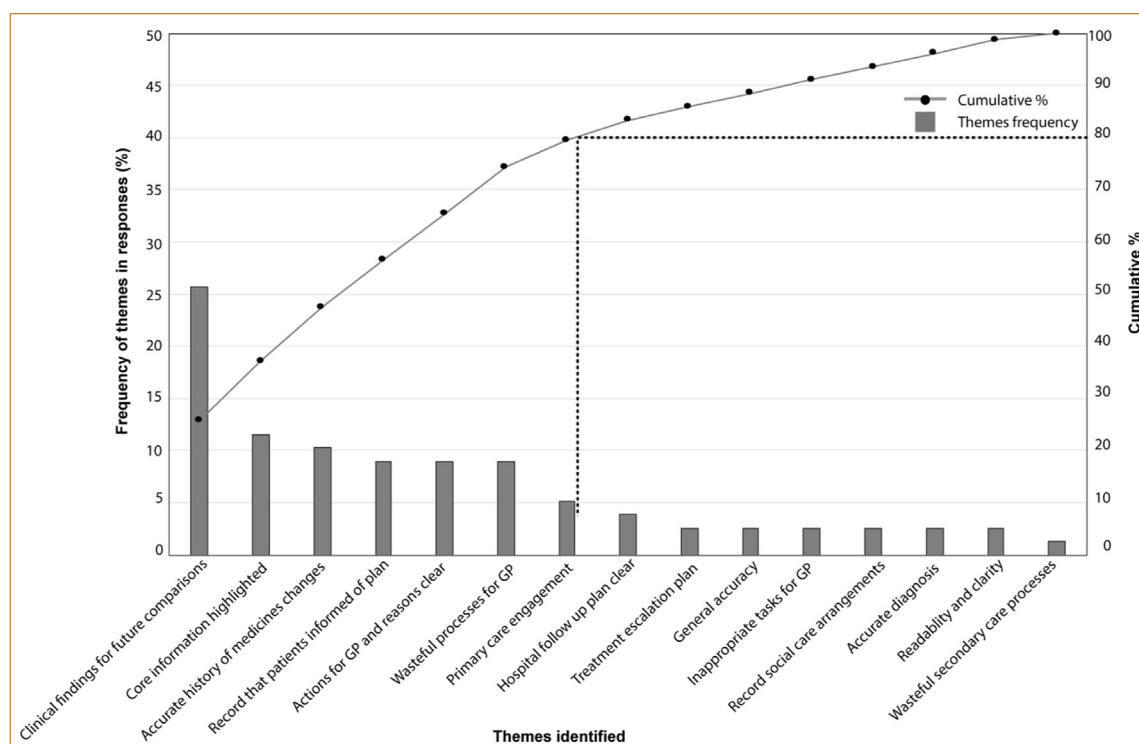
Effective acute care handover to GP: optimising the structure to improve discharge documentation

Figure 5. Pareto chart displaying general practitioner experiences relating to discharge communication. Themes were identified from the qualitative thematic analysis of the free-text data in the follow up GP survey.

making it conspicuous and less likely to be buried in the main body of text. The main feature of the focused assessment document is that its headings are limited to those most relevant. Our data have shown that reduced headings decreases the number of unused sections and this can improve readability and enhances clarity.

We have shown that the inclusion of a specific heading 'communication for general practitioner' increases the documentation of 'action for GP'. However, in 47% of the focused document examined, this section was left uncompleted. It is possible that in some cases, an ongoing action was deemed unnecessary. An alternative explanation is that its perceived importance diminished with its positioning at the end of the document particularly after a comprehensive plan of management. Irrespective of the underlying reason, an incomplete section can lead to the perception of fragmented handover. It is evident from the survey that GPs prefer a direct instruction, for example, 'no action required'. There was also a substantial variation in the quality of information provided under the heading. Changes in medication was not documented in 40% of the discharges and follow up arrangements were often omitted.

For this reason, this section was strategically moved to the beginning of the document and subheadings that represent the four key points identified from

the survey were introduced. These subheadings significantly improved the documentation suggesting a refocus to providing effective communication. Critically, the improvement in discharge information was achieved without providing comprehensive feedback to individuals involved in writing discharge letters, which would be very difficult to provide in a unit that discharges or transfers most patients within 4 hours.

However, users' compliance remains a challenge. Our data showed that 50% of the most recent discharges were without these subheadings. Consequently, focused assessment was left without a heading that specified action required for ongoing care hence documentation of 'action for GP' dropped to 32%. The reasons are multifactorial. The separate section requires a user to update the document once the decision for discharge has been made. Whilst uncoupling the discharge process from the assessment can shift the focus to providing effective communication, it hinges on a multitude of factors, such as time constraints and computer availability. However, one of the main factors is the 'Captain's Log' phenomenon where the focus is on documenting an assessment to support clinical decisions without adequately considering the perspective of 'others'.¹⁹ In our experience, even when the document was intended for a GP, it was constructed in narratives more suitable for a hospital clinician. There is an

Effective acute care handover to GP: optimising the structure to improve discharge documentation

inadvertent presumption that information required by a GP for ongoing care is analogous to that routinely used by secondary care clinicians.

Overcoming this mentality is key to a successful discharge process. The emphasis for any future staff training should focus on changing perception from 'discharge' to 'handover'. The term 'discharge summary' denotes the end of stay and the focus is inevitably in providing a summary to recount events during hospitalisation. In contrast, 'handover' underscores a transition that requires communication between secondary and primary care. A handover process encourages an alternative point of view, where the construction actively considers the perspective of a GP. The emphasis is on the future planning and how the current clinical events might influence future decisions.

Some limitations must be acknowledged. This study was limited to an acute medical assessment area, and therefore the results may not be entirely generalisable to other settings. The impact of this structure on processing time or readmission rate were not examined. Additionally, we have not addressed

potential confounding factors such as variations in clinical workload or complexities of the cases during the observation period. However, our study reflects real-world insight into the challenges encountered with discharge communication. In partnership with GPs, we explored strategies and implemented changes to mitigate some of these challenges through an iterative process.

In conclusion, we have shown that a separate section for handover of key discharge information could substantially improve communication as received by GPs. This does not have to be exhaustive particularly if it was to be accompanied by an assessment document. However, a template is only effective if it is used and properly completed. Thus, managing human factors is important to its viability. Efforts must be made to persuade clinicians to view discharge as part of a handover process. Perhaps, it is time to rebrand the entire concept of discharge summary as handover communication.

Declaration of competing interests

Nothing to declare.

References

- Forster AJ, Murff HJ, Peterson JF, Gandhi TK, Bates DW. The incidence and severity of adverse events affecting patients after discharge from the hospital. *Ann Intern Med.* 2003;**138**(3):161-7.
- Bergkvist A, Midlov P, Hoglund P, Larsson L, Bondesson A, Eriksson T. Improved quality in the hospital discharge summary reduces medication errors-LIMM: Landskrona Integrated Medicines Management. *Eur J Clin Pharmacol.* 2009;**65**(10):1037-46.
- Kripalani S, LeFevre F, Phillips CO, Williams MV, Basaviah P, Baker DW. Deficits in communication and information transfer between hospital-based and primary care physicians: implications for patient safety and continuity of care. *JAMA : the journal of the American Medical Association.* 2007;**297**(8):831-41.
- van Walraven C, Seth R, Austin PC, Laupacis A. Effect of discharge summary availability during post-discharge visits on hospital readmission. *J Gen Intern Med.* 2002;**17**(3):186-92.
- O'Leary KJ, Liebovitz DM, Feinglass J, Liss DT, Evans DB, Kulkarni N, *et al.* Creating a better discharge summary: improvement in quality and timeliness using an electronic discharge summary. *J Hosp Med.* 2009;**4**(4):219-25.
- Reinke CE, Kelz RR, Baillie CA, Norris A, Schmidt S, Wingate N, *et al.* Timeliness and quality of surgical discharge summaries after the implementation of an electronic format. *Am J Surg.* 2014;**207**(1):7-16.
- Alderton M, Callen J. Are general practitioners satisfied with electronic discharge summaries? *HIM J.* 2007;**36**(1):7-12.
- Sheu L, Fung K, Mourad M, Ranji S, Wu E. We need to talk: Primary care provider communication at discharge in the era of a shared electronic medical record. *J Hosp Med.* 2015;**10**(5):307-10.
- Health and Social Care Information Centre, Academy of Medical Royal Colleges. Standards for the clinical structure and content of patient records. London: HSCIC, 2013. <http://www.rcplondon.ac.uk/resources/standards-clinical-structure-and-content-patient-records>
- SIGN 128: The SIGN discharge document. <http://www.sign.ac.uk/pdf/sign128.pdf> June 2012
- Hammad EA, Wright DJ, Walton C, Nunney I, Bhattacharya D. Adherence to UK national guidance for discharge information: an audit in primary care. *Br J Clin Pharmacol.* 2014;**78**(6):1453-64.
- Singh G, Harvey R, Dyne A, Said A, Scott I. Hospital discharge summary scorecard: a quality improvement tool used in a tertiary hospital general medicine service. *Intern Med J.* 2015;**45**(12):1302-5.
- Dinescu A, Fernandez H, Ross JS, Karani R. Audit and feedback: an intervention to improve discharge summary completion. *J Hosp Med.* 2011;**6**(1):28-32.
- Tan B, Mulo B, Skinner M. Discharge documentation improvement project: a pilot study. *Intern Med J.* 2015;**45**(12):1280-5.
- Key-Solle M, Paulk E, Bradford K, Skinner AC, Lewis MC, Shomaker K. Improving the quality of discharge communication with an educational intervention. *Pediatrics.* 2010;**126**(4):734-9.
- Sarzynski E, Hashmi H, Subramanian J, Fitzpatrick L, Polverento M, Simmons M, *et al.* Opportunities to improve clinical summaries for patients at hospital discharge. *BMJ Qual Saf.* 2016.
- Makela P, Haynes C, Holt K, Kar A. Written medical discharge communication from an acute stroke service: a project to improve content through development of a structured stroke-specific template. *BMJ Qual Improv Rep.* 2013;**2**(1).
- Rawal J, Barnett P, Lloyd BW. Use of structured letters to improve communication between hospital doctors and general practitioners. *Bmj.* 1993;**307**(6911):1044.
- Lenert LA, Sakaguchi FH, Weir CR. Rethinking the discharge summary: a focus on handoff communication. *Acad Med.* 2014;**89**(3):393-8.