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Standardizing Key Issues from Hospital Through an Electronic Multi-Professional Discharge Checklist to Ensure Continuity of Care

Anne Kuusisto^a, Anne Joensuu^b, Minna Nevalainen^c, Terhi Pakkanen^b, Paula Ranne^b, Juha Puustinen^{b,d,e}

^a Administration Centre, Satakunta Hospital District, Pori, Finland,
^b Medical Care Area, Satakunta Hospital District, Pori, Finland
^c Regional Council of Satakunta, Pori, Finland
^d Pori Social Security Center, Pori, Finland
^e Faculty of Medicine, University of Helsinki, Helsinki, Finland

Abstract

This article describes development of the multi-professional discharge checklist and its implementation into the nursing documentation system (NDS) as part of the patient's overall care plan. The aim was to harmonize patient's admission and care period documentation and to improve the quality of electronic nursing discharge summaries. The ultimate goal was to ensure continuity of care. The multidisciplinary discharge checklist was developed in two phases to support the discharge of elderly patients (over 65 years). First, the information content of the checklist was defined, and second, it was integrated into the NDS. Focus groups of social and healthcare professionals (n = 82) in specialist health care, primary health care and social services defined the information content and participated in the feedback and checking rounds. The development work should continue. Particular attention should be given to the technical performance of discharge checklists in the NDS.

Keywords:

Continuity of Patient Care, Checklist, Patient Discharge

Introduction

Continuity of patient care is not always realized when the patient moves from hospital to home or primary health care; as a result, up-to-date information is not available to the professionals [1]. Poor communication and lack of documented guidelines or checklists have increased the incidence of handoff errors [2] and adverse events, with adverse events associated with information and medication being the most common [3]. The lack of standardization of information in multiple places and pages of documents, which is not an efficient use of professionals' time and adds to their cognitive load [4]. Standardization of these procedures is thus a Joint Commission requirement for accredited hospitals [5].

In Finland, nursing documents are produced, stored and presented using the Nursing Documentation System (NDS) which is part of the Electronic Health Record (EHR). The Finnish nursing model applied is based on the nursing process, a nationally defined nursing core data set and the Finnish Care Classification (FinCC). The FinCC consists of the Finnish classification of nursing diagnoses (FiCND), the Finnish classification of nursing interventions (FiCNI) and the Finnish classification of nursing outcomes (FiCNO) [6,7]. An important objective of the implementation of the nursing model has been to enable multi-professional collaboration and exchange of information between health professionals [8].

An electronic nursing discharge summary (ENDS), which is part of the Finnish nursing model, is recorded at the end of the care period or as a mid-term review in long-term care [6,7]. It is stored in the Patient Data Repository and available for professionals and patients [9]. The aim of the ENDS is to ensure the continuity of patient care when the care responsibility passes from one organization to another, and to gather the key information of the service event into a readable and comprehensible form [6]. According to a recent study, nurses working in primary health care valued the ENDS's efforts to improve information flow and cooperation, but the data content was estimated to be poor [1].

Safe discharge from the hospital is an important way of supporting home living and safe rehabilitation after hospitalization. A recently published systematic review stated that inadequate or delayed information transfer between hospital and primary health care professionals was common [10]. To facilitate the interface between specialized health care and primary health care, so-called discharge checklists are recommended [11-16]. The checklist is a tool for systematic work. It seeks to prevent memory lapses and to avoid human error [17,18]. They include important issues related to the patient's discharge [17,19], such as things that describe the patient's functional performance ability [20,21].

Discharge checklists have made it possible to ensure that all relevant issues related to the discharge have been taken into account [12]. Acute medicine discharge checklist has helped to add structure to the complex interprofessional communication which is essential to safe discharge transitions [22]. In a systematic review, they have been found to improve the quality of medical case summaries [16]. Patient's own checklist that engages the patient can make discharge safer by targeting gaps in patient education and correcting potential adverse events [23].

Checklists remain paper-based [23] and their functionality is limited [15,17]. Recently, the integration of the electronic discharge checking lists, especially in medical processes, has been shown to be beneficial [15,18]. Technologies must be highly usable to ensure high-quality and safe delivery of care without unnecessary increases in workload [24]. Nurses have had to integrate data and information for summaries from EHRs and devices by hand, typically by remembering data [25]. Technical implementation of checklists in the EHR system has proved to be challenging. Extra difficulties have been caused by the fact that they have had to be added separately "by hand" to each patient's patient record [15]. Besides causing extra work, transferring and duplicating patient data in the patient information system manually is prone to changes in information [26] and thus a threat to patient safety [3]. Structured documentation has improved the quality of documentation, i.e., recording of nursing activities and results, supported the exchange of information, and contributed to the continuity and coordination of care and the reuse of information [27].

According to a systematic review, mere transfer of the discharge checklist into electronic format may not ensure its successful implementation. In order for it to be successful, it is essential to integrate it into existing work processes [18]. Hospitals should develop documented guidelines, promote cooperation and clarify work processes [2] so that the information content of the discharge checklists can be immediately updated and shared among the various occupational groups involved in the care of the patient [15].

According to our knowledge, a multidisciplinary discharge checklist has not previously been implemented in the day-today Nursing Documentation System. The purpose of this article is to describe the development of the information content of the multiprofessional discharge checklist into a NDS to harmonize patient's admission and care period documenting and to improve the quality of electronic nursing discharge summaries. The ultimate goal is to ensure continuity of care.

Material and Methods

Setting

In Finland, municipalities are responsible for organizing social welfare and primary health care. Hospital districts (n = 21) organize specialized health care [28]. This development project was carried out in the Satakunta Hospital District (SHD) in 2014–2016 as part of a project funded by the Ministry of Social Affairs and Health for the discharge and rehabilitation processes of older people. In 2018, SHD provides specialized health care services to approximately 223,000 residents in cooperation with primary health care and social services [29]. The NDS has been in use in SHD since 2015.

The multidisciplinary discharge checklist was developed within the project in two phases to support safe discharge of elderly patients (over 65 years). In the first phase, the information content of the discharge checklist was defined, and in the second, it was integrated into the NDS.

Phase I. Definition of the Data Content of the Multi-Professional Discharge Checklist

The development of the information content of the discharge checklist was preceded by a comprehensive literature review on the continuity of care [1]. In addition, we acquired some examples of paper checklists used elsewhere in Finland. The data content of the discharge checklist was developed using focus group interviews in workshops related to a development project in elderly care. This method can be used at the beginning of development projects, whereby focus groups can highlight, for example, the wishes or needs concerning the information content of the system or the user interface solution[30].

Focus groups of social and healthcare professionals (n = 82) in specialist health care, primary health care and social services defined the information content of the discharge checklist and

participated in the feedback and checking rounds. Participants in the working groups were found and selected on the basis of volunteering and interest expressed. The sizes and configurations of the focus groups at the meetings varied (Table 1).

Table 1 – Composition of the Multidisciplinary Team (n = 82) by Profession*

Professional title	n
Nurse	35
Doctor	11
Physiotherapist	6
Rehabilitation counselor	6
Social worker	6
Practical nurse	5
Home care supervisor	2
Senior manager of the elderly	2
Project worker	2
In addition, one representative of each:	7
occupational therapist, fitness instructor,	
senior care supervisor, service counselor,	
psychologist, nurse and elderly care	
professional	

* The number of professional groups is indicative

The aim of the workshops was to find out key information for the patient's discharge to ensure continuity of care from the perspective of different professionals and organizations. The workshops were designed in a multi-professional team. There were always two team leaders, one asking questions and the other taking notes. In the workshops, small group work based on patient cases and free-form ideas was used.

The material consisted of examples of paper checklists used elsewhere, written output from workgroups, and notes from team leaders. The material was analyzed and categorized thematically. The results made up the thematic areas of the discharge checklist.

The paper discharge checklist was piloted between July 1, 2015 and May 16, 2016 in several units in specialist health care and primary health care at SHD. The checklist was updated three times. The functionality of the paper checklist was evaluated using the so-called principles of continuous evaluation (oral, written, Webropol[®]).

Phase II. Integrating the Multidisciplinary Discharge Checklist into Nursing Documentation System (NDS)

The fourth version of the checklist was implemented into special health care NDS as a template for the electronic form. The use of a template is recommended to improve the usability of NDSs, multi-professional co-operation and the utilization of information [8,31,32]. The template content was constructed from the FinCC classification [6,7]. The template contains the default parts. It can also be edited for individual patients [33].

An electronic discharge checklist was tested between May 16, 2016 and September 30, 2016 in specialist health care in elderly psychiatry, rehabilitation, pulmonary diseases, neurology and internal disease ward patients over 65 years of age because it was a project of older people. The use of the checklist was evaluated face-to-face in discussions and feedback sessions (n = 4). Additionally, five random samples were taken from each of the units participating in the pilot (n = 5) to assess whether the checklist was filled or used and whether the information was transferred to the electronic nursing discharge summary.

Results

Information Content of the Multi-Professional Discharge Checklist

After continuous dialogue with feedback and three check rounds, the content of the paper-based multi-professional discharge checklist consisted of the following content areas: (1) housing, home care and follow-up care, (2) functional ability at discharge, (3) medication, (4) social benefits and (5) patient involvement.

Multi-Professional Discharge Checklist as Part of NDS

The contents of the paper-based discharge checklist were transferred in structured form, as a so-called template, into the NDS (Figure 1). The categories corresponding as closely as possible to the data content were selected from the FinCC classification. The template serves as a plan for co-ordination of care and follow-up care as well as a daily documenting base.

At the beginning of the discharge checklist, a space is reserved for the planned discharge date. It is recommended that the discharge date is recorded immediately at the beginning of the care period to ensure a safe and systematic discharge.

The planned care activities in the structured discharge checklist are shown in bold in Figure 1. They are in accordance with the Finnish classification of nursing interventions (FiCNI version 3.0): (1) involvement in planning and implementation of care, (2) supporting patient coping, (3) supporting patient self-help, (4) providing aids for day-to-day activities, (5) orientation tracking, (6) mental state monitoring, (7) pharmacotherapy and (8) planning for continuity of care. After the end of the project, nutrition-related guidance was added to the discharge checklist.

The planned care activities, such as orientation tracking, are specified by keywords (oriented/forgetful). The contents of the discharge checklist can be modified in accordance with each patient's personal care needs and a particular care activity can be included in the NDS as an exclamation mark (for example: blood glucose drops easily <3.0 mmol/L). (Figure 1.)

CARE PLANS

COORDINATION OF CARE AND CONTINUITY OF CARE, NEED FOR FURTHER CARE

30.10.2018-

Objective of care: planned discharge date:

Planned care activities

Involvement in planning and implementation of care: Patient/relative/sender

Supporting patient coping: Type of accomodation/home life/services/social situation/family carer **Supporting patient self-help**: Movement/toilet functions/personal hygiene/dressing/eating

Providing aids for day-to-day activities: Aids/care accessories

Orientation tracking: Oriented/forgetful

Mental state monitoring: Normal/depressed/anguished

!*Pharmacotherapy: Patient/relative/continued care/WARFARIN/medicines as needed

Planning for continuity of care: Information on the discharge/further examinations/instructions for further care

Figure 1 – The Information Content of the Electronic Multi-Professional Discharge Checklist (FiCNI, version 3.0)

Discussion

In this paper, we described how the information content of a multi-professional discharge checklist was developed into NDS to harmonize documenting patient's admission status and hospital period and to improve the quality of electronic nursing summaries. The ultimate goal was to ensure continuity of care. The starting point for this development project was that "cannot cope at home" is not a sufficient description of admission to hospital. Instead, the preparation of the patient's discharge should be started as early as possible so that the patient and his/her family or friend can stay at home as well as possible after acute care. For example, the patient's ability to function or any need for aids or care accessories should be clarified as early as possible.

Improving effectiveness of communication among caregivers and the safety of medication use have been included as items for hospital accreditation [5]. The use of structured documentation has improved the quality of the documentation [27], and the use of discharge checklists can reduce the potential for preventable adverse events associated with transfer of data [2]. Standardized checklists have previously shown benefits in patient care, especially in medicine. They have helped to standardize and harmonize good practices in the organization of continuity of care [13,16,23].

Previously, professionals had to search numerous pages of documentation for information that might not be there [4]. Matters that are relevant for the discharge are often only in the hands of professionals. This introduces patient safety concerns of increased risk for errors [3]. According to our knowledge, an electronic multi-professional discharge checklist is not available elsewhere in NDS. In this project, it was desired that the content of the discharge checklist in NDS was constructed from the patient's point of view and that it would be generic to the social and healthcare professionals involved in the patient care regardless of profession. The aim was to avoid situations where no single document contains all the information needed for the patient's discharge.

The discharge checklist was implemented as a template on the NDS, based on the recommendation of an IT vendor. The categories describing the data content of professionals were found quite well from the FinCC classification [6,7]. On the other hand, there were problems with the compilation of the data content into electronic format. We knew that lack of written guidelines has led to errors in patient transfer situations [2]. That is why we provided end users with technical and substantive written guidelines for using and filling in the discharge checklist. The guidelines for using and filling in the discharge

list were not detailed because different units care for patients with various disorders and the patients have different personal care needs.

In our project, the technical implementation of the discharge checklist into the NDS was challenging. Past experience has shown that usability problems with these records can have unintended consequences that harm patients and cause additional workload for nurses and other clinicians [24]. In our project, professionals made many suggestions for improvement which were passed on to the IT system supplier. Based on initial user experience, they suggested, for example, that the discharge checklist should open automatically for all patients over the age of 65. Furthermore, it was recommended that the position of the discharge checklist that has been added to the NDS should be interchangeable. The information contained in the checklist should be automatically transferred to the electronic nursing discharge summary. End users also hoped that the content of the discharge checklist could be "hidden" and opened as a dropdown menu as display space is limited [compare 15].

A systematic review by Kattel et al. [10] has suggested dynamic documentation development and implementation of electronic discharge software that can automatically populate sections of discharge summariers. These recommendations are noteworthy. Patient data transfer within the information system is a risk for patient safety [26]. Unless technology supports the work processes [18], commitment to the discharge checklist can be challenging and the desired benefits will be missed.

Strengths and Limitations

The representativeness of the material was good. The workshops had a wide representation of different professional groups in specialist health care, primary health care and social work. It is noteworthy that in this project, customers and patients (families) did not participate in defining the data content of the discharge checklist although the original aim was to build a content-enhancing patient perspective.

Recommendations for Future Work

Patient discharge cannot be designed solely for professionals. In the future, patients and families should be engaged and included in the development work. It would also be desirable to link patients' self-generated entries to the discharge checklist. The contents of the checklist and its introduction should also be looked at in relation to other retrieval situations than discharge from the special health care ward (e.g. from nursing institution to hospital).

Conclusions

In this article, we described how the key issues from the hospital were standardized through an electronic multidisciplinary discharge checklist in NDS to ensure continuity of care. We found that based on preliminary user experience, the electronic multidisciplinary discharge checklist was perceived as a useful tool. More research is needed, however. We suggest that development work should continue. Technological developers should be aware of the different functional needs that must be taken into account when data contents are configured in the EHR system. In the future, particular attention should be focused on the technical performance of discharge checklists in the NDS.

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Address for Correspondence

Anne Kuusisto PhD, RN Satakunta Hospital District Sairaalantie 3 28500 PORI FINLAND <u>Email:</u>first name.surname@satshp.fi