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MEDICAL RECORD SUPPORT FOR EFFECTIVE DISCHARGE PLANNING

Nyree J. Taylor
University of Melbourne, Australia, nyreet@student.unimelb.edu.au

Reeva Lederman
University of Melbourne, Australia, reeva.lederman@unimelb.edu.au

Rachelle Bosua
University of Melbourne, Australia, rachelle.bosua@unimelb.edu.au

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Research in Progress

Taylor, Nyree J, University of Melbourne, Australia, nyreet@student.unimelb.edu.au

Lederman, Reeva, University of Melbourne, Australia, reeva.lederman@unimelb.edu.au

Bosua, Rachelle, University of Melbourne, Australia, rachelle.bosua@unimelb.edu.au

Abstract

Little is known about the Information Technology artefacts which help inform decision-making to support people returning home following a hospital stay. Content, delivery, timing and information about personal circumstances form integral components of person-centred discharge planning. From an Information Systems (IS) perspective, understanding barriers to information flow, artefacts in use and the context in which they are presented to health care professionals is the first step to explore how currently used IS support or fail to support the discharge process. This research-in-progress uses Roy's Adaption Model and Adaptive Structuration Theory to explore to what extent patient information documented in the medical record supports and enables person-centred discharge planning. We aim specifically to understand how the medical record shapes discharge planning through clinician-to-clinician and clinician-to-patient information sharing to support a patient's recovery journey when home. Findings suggest that the medical record is insufficient to support and enable person-centred discharge planning. We suggest how these limitations can be overcome to improve person-centred discharge planning to assist and facilitate patients' transition home.

Keywords: Person-centred care, discharge planning, Roy's Adaptation Theory, Adaptive Structuration Theory.

1 Introduction

Pressure on hospitals for better service delivery to accommodate a growing population results in shortened length of stays where much of patient recovery occurs at home (Australian Institute of Health and Welfare, 2016; Parkes & Shepperd, 2000). Hospitals are challenged with servicing greater numbers of more complex patients in shorter time periods, forcing a reliance on enhancing organisational processes to ensure safety and quality of care (Australian Institute of Health and Welfare, 2016). One process to assist with patient movement and facilitate access is *discharge planning*, where care needs are identified early on during admission to assist in the eventual preparation and planning for home (Parkes & Shepperd, 2000). Discharge planning is the clinical administration process, which captures information about a person upon admission, and supports decision-making plans for return home (Hesselink et al., 2012; Parkes & Shepperd, 2000; Rorden & Taft, 1990). The process is an important aspect of care delivery to ensure safety and quality of care. Discharge information documentation in the medical record is a key component to continuity care both during hospital stay and beyond and a key indicator of patient readmission rates (Cummings et al., 2010; Rorden & Taft, 1990; Victorian Government Department of Health, 2010) One key challenge to reducing readmission is ensuring that patient discharge information is relied upon and an accurate 'fit' to facilitate and support patients' return to life at home (Broderick & Coffey, 2013; McCormack & McCance, 2006; Rebuge & Ferreira, 2012). Understanding particular needs, preferences and values of discharge information may help to promote patient engagement and facilitate adaption back to the home environment (Tang, Lorenzi, Harle, Zhou, & Chen, 2016).

The Institute of Medicine describes patient-centred care as one of the six elements to achieving high quality care during the transition to home (Institute of Medicine (IoM), 2001; Luxford, Piper, Dunbar, & Poole, 2015). *Patient-centred care is defined as care which is respectful and responsive to individuals patient preferences, needs and values...where the system is designed to meet and respond to such needs* (Institute of Medicine (IoM), 2001, p. 3). Patient-centred care models enhance individuals' unique experiences of hospital and establish relationships between care givers and receivers. Based on trust, the models propose plans of care tailored directly to suit the needs and requirements of the patient, promote involvement in care decision-making and place an emphasis on partnerships between patient and provider (McCormack & McCance, 2006; University of Gothenburg, 2016). Literature indicates adopting such approaches promotes fewer days in hospital and a greater readiness for discharge (Ulin, Olsson, Wolf, & Ekman, 2016). Whilst patient centred and person centred carry similar meanings, "person-centred" has been used as a preferred alternative to view the person's needs within social, emotional, physical contexts (McCormack & McCance, 2006; Miles & Mezzich, 2011). In this paper, we adopt this alternative term.

Documenting person-centred care is a key component of quality care in the process of discharge planning. Unique preferences, ways of partnering with medical professionals, needs and values can be embedded in documentation along the patient journey with the view to assist patients' transition from hospital to home (Ulin et al., 2016). Our research question in this paper is: **How can the current medical record more effectively support *person-centred* discharge planning?**

We briefly revisit key person-centred care literature in Section 2 and then propose a synthesised person-centred discharge framework in Section 3. This framework was used to review patient records to illustrate that current discharge documentation is inadequate to support this process. We discuss our findings in Section 5 and outlines avenues for the next stage of this study in the conclusion.

2 Background

Information delivery for patients is an important part of nursing care as nurses are placed in a privileged position where they are invited to share a patient's personal situations and circumstances that affect them at home (Rorden & Taft, 1990). During shift-work a nurse monitors and detects subtle changes in patients' health patterns which can help to organise, propose and plan care interventions. While literature suggests that patients often feel more supported and satisfied with their care provision when healthcare professionals pay attention to their unique needs and preferences (Stojan, Clay, & Lypson, 2015; Ulin et al., 2016), studies indicate that upon discharge, patients' feel that their information needs have often not been adequately met. A 1994 study conducted in the UK's NHS system reported that 62% of patients had not been informed when to resume normal activities, 70% had not been informed of warning signs, and 56% had not been provided with written or printed information (Bruster et al., 1994). Still today, similar themes present where patients discharged early from hospital indicate problems with personal care, household activities, and physical mobility. Holland et al suggest these could be related to deficits in personalised information at discharge (Holland, Knafl, & Bowles, 2013; Horwitz et al., 2013).

Person-centred care in nursing describes care which understands the person and their particular individual requirements for healthcare interaction (Australian College of Nursing, 2014). Few studies have explored how nursing information provision can be tailored to meet the individual needs and what information is considered 'person-centred'. Discharge documentation is important as it provides insight and overview to the care provided whilst in hospital and can assist patients with movements from hospital to home environments.

Literature indicates a tension between healthcare professionals and patients in the definition and interpretation of person-centeredness and the information required to support this concept (Caligtan, Carroll, Hurley, Gersh-Zaremski, & Dykes, 2012; Horwitz et al., 2013). In a study performed by Cartigan et al, (2012) nurses largely appeared more reserved about patients' accessing information than

patients themselves. However, nurses and patients' information requirements on plan of care and routine schedules for the day, were consistent. Both groups illustrated varied information needs where patients' needs focused more on procedural and organisational information. Nurses however needed to know more about healthcare provision requirements. Findings suggest that while patients and nurses consider similar things to be important, they vary on what contexts are important, with information needs being relatively specific for both. Howitz et al, 2013 used a mixed methods prospective cohort design to review instructions provided to patients on discharge. They suggest that a large amount of care delivery takes place without documentation and that healthcare professionals should anticipate that whilst all information may be 'provided' it might not necessarily be fully understood.

To date limited research has focused on what patient information is considered *person-centred* and how this information supports the process of discharge planning. This paper is situated within the boundary between hospital and home and endeavours to explore the required information components that contribute to and foster a person-centred approach to discharge. Outcomes from the research can be used to help inform person centred hospital communications to better support patient safety and maintain sustainable health care routines upon discharge.

3 Methodology

Being part of a larger study, our methodology comprised a two-stage investigation into person-centred discharge information provision for patients. Stage I synthesized two theoretical models from nursing and information systems theory to create a framework to view person centred discharge information. Stage II used the framework to retrospectively analyse information captured in a set of medical records to highlight problems with person-centred discharge information.

3.1 Stage I: Development of the Person-centred Discharge Framework

We developed a person-centred discharge planning (PDP) framework synthesizing two theoretical models i.e. Roy's Adaptation Model (RAM) from nursing theory (1984) and the IS theory Adaptive Structuration Theory (AST) (Figure 1). The framework provides a lens to analyse patient information documented in the medical record and understand the synthesis between a technology and how providing personal information to help overcome a person's unique stressful events. RAM sees humans as interactive beings within their environment, illustrating that the way in which human beings respond to stimuli affects their ability to positively or negatively adapt. Stressors hindering individual adaptation are *self-concept, physiological, role function and interdependence* (Roy, 1984). Roy's theory proposes nurses are in positions to accurately identify such stressors and plan interventions that can support the patient once home.

AST has been adopted by IS researchers to explore and describe the complex interplay of social interactions between humans and information systems (Giddens, 1983; Kouroubali, 2002). AST consists of decision outcome constructs of *efficiency, quality, consensus and commitment* and explores these through a combination of rules and resources that negatively or positively influence a user group (DeSanctis & Poole, 1994). Using these two theories, we can combine requirements about human interactions with concepts related to the value of information.
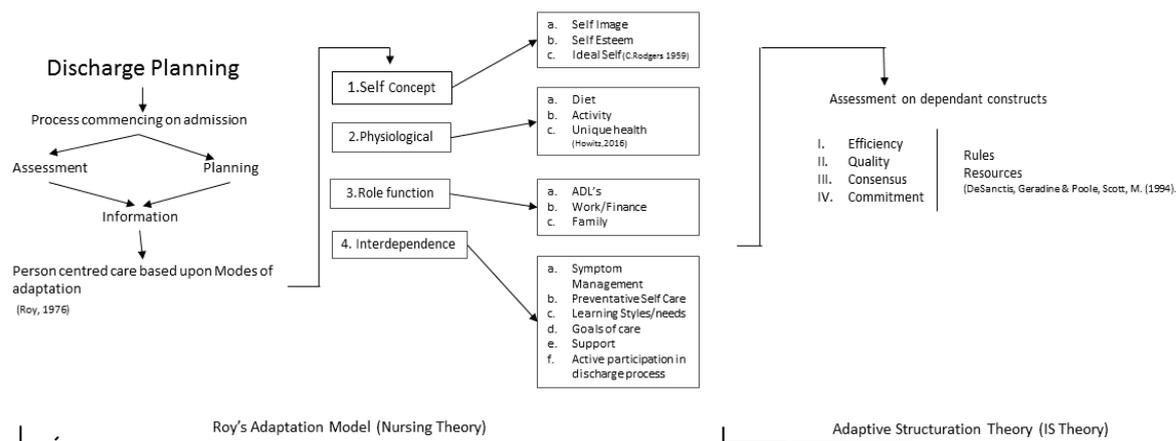
Figure 1 Conceptual framework for Person-centred Discharge Planning (PDP)

3.2 Stage II: Examination patient records

3.2.1 Design

In this stage, we analysed patient records identifying patient-centred discharge information. The analysis focused on information related to patient needs, preferences and values when admitted to hospital for Acute Coronary Syndrome (ACS) complaints. The intention was to compare the information currently documented in the medical record to the information requirements proposed in the PDP framework.

3.2.2 Sample descriptions

Participants in our data set were female, aged 30-59 years with admission to an eastern metropolitan hospital (single site) for minor cardiac procedures. Cardiovascular disease is the biggest killer of Australian Women and this age group has been identified as a next wave of population growth (AIHW, 2010; Australian Bereau of Statistics, 2012). Females have been purposefully selected for homogeneity of the sample, seeking to understand how hospitals acknowledge and incorporate their personal circumstances into the pre/post discharge information.

3.2.3 Data collection and analysis

Medical patient records fitting the above criteria were purposefully accessed between July 2014 and January 2016. In total, there were N=49 records, however for the study a total of 31 were analysed, at which point data saturation was reached. Analysis comprised a two-step process from admission to discharge (separation), for a diagnosis of ACS. Step one involved demographic data collection. Step two analysed the captured data using the synthesized conceptual PDP framework focusing on information about self-concept, physiological state, role functions and interdependencies to obtain a holistic assessment of patients' unique personal circumstances. Data were divided into four entities (*Admission, Patient Journey, Nursing Assessment, and Discharge*) to more easily capture person-centred attributes as patients moved through the system. An AST lens was used to evaluate the context in which the information was captured and the consistency of information provided (Table 1). Two registered nurses independently accessed and verified the data collection process.

Entity	Definition
Admission	*Demographic data including admin entry (elective/emergency), age, presenting problem, time to present (ED), diagnosis, treatment, social status, employment status.*
Patient Journey	*Included information about diagnosis, treatment and complications during their stay, life-style risk factors (HT, anxiety, high cholesterol, smoker, previous AMI, depression etc) any allergies or cardiac medications that are to the patient treatment and condition.*
Nursing Assessment	*Physical, social, emotional information recorded on admission*
Discharge	*Instructions, information, discharge time, referrals to support after hospital stay, Activities of daily living (ADL's)*

Table 1 Definition of stages of information capture

4   Findings from the medical records

Admission

From admission documentation, the average age was 49 years with 45% living in married/defacto, 32% single and the remaining status was unrecorded (23%). 58% were currently *caring for others* with only 6% being *cared for at home by carers*. The number of dependants was inconsistently recorded and details around the role the patient played in caring for dependants at home were absent (age of dependants, commitments and responsibilities). 9% lived alone, but few had a follow-up plan of supportive care for discharge eg family support/friends' assistance once home. Twenty-six women were working, but there was no contextual information pertinent to recovery and discharge (eg *having to drive to work, days worked per week, stressful/not stressful work, other responsibilities, hours worked or return to work plan relevant to personal roles).*

Patient Journey

Information about physiological state was often incomplete. 19% of records captured complications during their stay as isolated events. There was no information about patient education in terms of whether the possibility of complications/supportive care was explained to the patient upon discharge. 58% of records captured information placing the patient in a high cardiac risk factor profile – few records provided information on how supportive care was provided to the patients in light of existing conditions.

Nursing Care

On admission (100%) risk assessments such as falls, pressure and living status were captured. Such documentation was completed predominantly through a 'tick box' approach with un coded text following a standardised documentation pattern but lacked information on nursing action/partnership's made with patients. There were gaps in details on a women's social situation (*family violence, drug abuse, stress, dependants and recent weight loss*). The women's average BMI was 30 with 83% with a BMI > 26, 6.45% had documented a malnutrition risk score of >2. RAM provided insight into how documentation detail should be present in the records as follows: *Self-concept:* Patient self-perception, self-esteem issues or ideal self-image were poorly captured. Emotional needs may have been captured such as "*patient suffers from anxiety*" with little detail on further care plans to partner with the patient to develop intervention strategies. *Role function:* Patient *employment status, family/ carer status* was inconsistently recorded lacking full visibility of a person's role within the context of their own home/environment. Data captured employment status as 'employed' but lacked job details (part-time/full-time) and employment conditions (*stressful, distance from home, involved machinery heaving lifting). Physiological:* Information related to *diet, exercise or unique health circumstances* were inconsistently recorded, mostly recorded as single lines or phrases of open text.

Discharge Information

97% of the records indicated patients were to go home, with 93% being referred on to a cardiac rehabilitation program. The average number of days completed in a cardiac program however was 3.3 days of the recommended 10 recommended. 19% of the women readmitted to hospital for a related heart condition within a 28-day window, generally well before rehabilitation started. Discharge instructions were scant with 'tickbox' information provided (discharge medication- and discharge instructions provided).

RAM highlighted interdependence as information that patients would require taking ownership of their own healthcare. Examples with interdependent information absent are as follows *Interdependence:* Health information (*stage up to in giving up smoking, unique dietary or activity habits, stress in their lives*) – and an absence of being able to equip the patient with resources or strategies to assist them to manage these issues, eg: contact to tobacco clinic hotline when the patient felt the urge to smoke, online or phone support service to adjust to home. Documented records contained "tick box" sheets, lacking important detail and context around patient self-care. Information captured about verbal advice given to patients in the immediate discharge period was limited.

Information quality was not well-evidenced and lacked context. The random nature in which this information was inconsistently stored and accessed was problematic. Rarely was information found in a consistent format for staff to use and access in a logically consistent manner allowing for traceability of events from one user to the next. Multiple usernames and passwords were required to access desktop applications, and applications crashed multiple times requiring shut down and re-boot. Time to review two of the records took 21 minutes.

5 Discussion

This study aimed to answer the question: *How can the current medical record more effectively support person-centred discharge planning*? In response, our analysis indicates that the PDP framework is a useful tool to analyse information documented in the medical record. This study's findings confirm that the medical record contains insufficient patient data - specifically information relevant to understanding and appreciating holistic care delivery and patient needs, values, and preferences of care delivery (Institute of Medicine (IoM), 2001; Ulin et al., 2016). Ulin (2016) emphasized documentation of partnerships and care plans as a way of personalising records leading to shortened stays and increased readiness for discharge. In our study, documentation of care of this type was scant and difficult to find and focused merely on activities and information in relation to what the healthcare profession did, rather than unique patient needs, preferences and values and how these needs were addressed.

In terms of RAM, information unique to a patient's personal circumstances was either inconsistent or not captured), while interdependence information was scant (patient journey and educational support information for discharge). Although there was documentation to support components of patient care, the medical record lacked important detail providing the next user with context and semantics in which the data was captured and obtained. It is plausible that care exchange occurred during the patient's time in hospital, however the record of this discussion and plan was difficult to trace. This is consistent with previous research which indicates that a large amount of care delivery occurs without mirrored documentation in the medical record (Broderick & Coffey, 2013). Although nursing care assessment information was completed on admission, physiological and self-concept information was poorly captured. In fact, each of the RAM stressors was insufficient due to a lack of completeness in information documented for each category.

Reflecting on RAM in our synthesized framework, our findings confirm that the documentation of patient information is not 'forward-looking' to capture persons' holistic needs. The capturing of rich information is a dynamic activity that needs to *incrementally add* new situated information to the medical record as this information may significant impact and contribute to decisions around patient discharge planning. Nursing and health practitioner practices should therefore revisit key indicative

stressors required for effective discharge planning and devise adequate information documentation practices that capture complete and consistent information over time.

In viewing the data through the AST lens, consideration is warranted around the social context in which the technology is utilised (Kouroubali, 2002). It was extremely challenging to find important information that required communication between clinicians, and clinician and patient. Further, prioritisation of important information became 'lost' in the abundance of documented organisational procedures, which could in fact out shadow other priorities of care. Consequently, it was difficult for the user to know the 'rules' for using the technology to influence care. Such differences highlight data inefficiencies in technology use to support and enable the social context of information flow from one healthcare professional to another.

When considering the decision outcome elements of AST (*efficiency, quality, consensus and commitment)* that affect the rules of technology use and resources (DeSanctis & Poole, 1994), our framework highlights that information captured lacked regularity and consistency. Quality of information also varied with partial person-centred information captured about a patient in one application and the same information recorded in a different location.

From an AST perspective, the medical record failed to serve as a collaborative structure that determines how a group of actors reach decisions (DeSanctis & Poole, 1994, p. 126). There were no rules that governed medical record use and the documentation of key information that could facilitate patient-discharge planning. Although not directly observed–commitment towards the technology may be impacted by the inconsistent partnership/relationship between the human users, the process and the supportive technology system (Giddens, 1983). Our findings therefore confirm that person-centred discharge planning requires clearer prescriptions in the form of rules that guide on-going information documentation from the point of patient admission, ensuring that care is transitioned in a more efficient way that fosters independence and provides customised care plans for patients when at home (Bruster et al., 1994; Holland et al., 2013). This further challenges the design and use of IS artefacts (in particular the medical record) to be truly effective in including and considering the context in which resources are provided (Brooks, Atkinson, & Wainwright, 2008). The more information systems enabled by technology support person-centred discharge information, the greater the acceptance and use by clinicians in practice, and more effective eventual care provided for patients.

6 Conclusion

This research indicates data captured in the medical record is insufficient in detail to fully support and enable person-centred discharge planning. It's not surprising that patient information needs are often 'missed' when documentation in the medical record is insufficient to provide full contextualised visibility into a patient's personal care needs. We illustrate deficiencies in current discharge processes in an Australian public hospital using a person-centred discharge framework synthesized from RAM and AST. The next stage of our study involves longitudinal ethnographic interviews up to 28 days post discharge to verify and confirm person-centred information needs of patients following discharge. This stage will determine key information needs to facilitate more effective discharge planning.

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