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What is This?
Understanding the occupational and organizational boundaries to safe hospital discharge

Justin Waring1, Fiona Marshall2 and Simon Bishop3

Abstract

Objective: Safe hospital discharge relies upon communication and coordination across multiple occupational and organizational boundaries. Our aim was to understand how these boundaries can exacerbate health system complexity and represent latent sociocultural threats to safe discharge.

Methods: An ethnographic study was conducted in two local health and social care systems (health economies) in England, focusing on two clinical areas: stroke and hip fracture patients. Data collection involved 345 hours of observations and 220 semi-structured interviews with health and social care professionals, patients and their lay carers.

Results: Hospital discharge involves a dynamic network of interactions between heterogeneous health and social care actors, each characterized by divergent ways of organizing discharge activities; cultures of collaboration and interaction and understanding of what discharge involves and how it contributes to patient recovery. These interrelated dimensions elaborate the occupational and organisational boundaries that can influence communication and coordination in hospital discharge.

Conclusions: Hospital discharge relies upon the coordination of multiple actors working across occupational and organizational boundaries. Attention to the sociocultural boundaries that influence communication and coordination can help inform interventions that might support enhanced discharge safety.

Keywords

boundaries, communication, coordination, hospital discharge, patient safety

Introduction

Contemporary thinking in patient safety is largely informed by theories and concepts developed within the fields of social psychology and human factors.1 These suggest, in broad terms, that unsafe care rarely results from individual error alone but is enabled, exacerbated or conditioned by ‘latent factors’ found in the wider work environment. From this ‘systems’ perspective, safety improvements are premised on reducing operational complexity, enhancing nonclinical skills and engendering organizational learning.2 Despite advances in systems thinking, research continues to highlight worryingly high levels of substandard care and patient harm.3 One explanation might be that policy and research fails to adequately address the inherent complexity of service organization and delivery. Although human factors thinking moves beyond single-agent causality, analysis has often remained within narrowly defined clinical micro systems, such as the emergency room or operating theatre, and on teamwork, communication or decision-making factors.4 Wider organizational, cultural and social factors are recognized as important, but remain underdeveloped as analytical dimensions.5 In particular, there is little analysis of the threats to safety located within the wider system of care, especially between care providers, processes and settings.6 Developing this idea, health services are increasingly described as complex systems.7,8 This is because they

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involves a large number of dynamic, nonlinear interactions between a diverse range of heterogeneous actors, units or system components. System performance is often difficult to understand or manage because the interdependencies between actors can lead to unanticipated outcomes, especially where activity in one part of the system can have knock-on effects on other subsystems. Research within the operating department shows, for example, how interdependencies with other tightly coupled hospital departments can influence team safety within the operating theatre.9

A prominent example of the threats to patient safety located between care providers and settings is hospital discharge. Discharge planning and care transition involves a multitude of interdependent health and social care professionals working within and across different organizational settings where discharge quality is shaped by the coordination and alignment of these interdependent actors and activities. Hospital discharge exemplifies the idea of a complex system and it is widely interpreted as a vulnerable process in the patient journey. For example, Forster et al.10 found almost 20% of hospital discharges involve some form of adverse event. Common threats to safety are associated with medicines management, the provision of ongoing care, incomplete testing, the use of home adaptation and risks of falls, infections or sores.11–14 Analysis of these events consistently identifies communication and coordination across occupational and organizational boundaries as influencing the quality and safety of discharge, especially the accuracy, completeness and timing of interdependent activities.15–18 Elaborating these interdependencies, Glasby19 describes the influence of occupational factors, related to differences in professional knowledge, cultures and practices; organizational factors related to divergent working patterns, capabilities and resources; and compatibility and coordinating factors related to how occupational and organizational differences are aligned.

Extending this view, occupational and organizational boundaries are interpreted as barriers to coordinated working, as exacerbating system complexity and, in turn, latent threats to discharge safety. Social boundaries distinguish and define domains of social activity and social organization through a variety of material, sociological and symbolic media.20 Boundaries are analytically important because they provide a source of differentiation and identification (who we are), prescribe shared areas of practice (what we do) and shape relations with others (who we work with). Professional boundaries are often associated with expert jurisdiction within the division of labour21 and with inhibiting workforce reconfiguration, diffusion of innovation and service integration.22,23

To better understand how occupational and organizational boundaries can exacerbate system complexity and represent a latent threat to safety, this study draws together research within fields of relational sociology,20,24 organizational studies,25–27 sociology of professions,21,28,29 and public management research30–32 to propose a heuristic model. The three analytical dimensions developed are by no means inclusive of all possible boundary issues, but together provide a basis for analysing the threats to system safety associated with occupational and organizational boundaries:

- **Organization**: relates to the more formal aspects of service and work configuration, including task allocation and division of labour, leadership and governance, hierarchy and resource profiles that shape how different system actors work together (e.g. how shift patterns or task allocation shape discharge planning).21,29,31

- **Culture**: relates to the shared values, norms and customs that frame discharge activities, which often reflect work organization and the meanings that actors give to their work (e.g. how different philosophies or values of discharge can shape collaboration).24,28

- **Knowledge**: relates to differences in the way actors perceive, make sense of and understand their work, including the different forms of knowledge that are seen as legitimate for guiding practice (e.g. how different meanings of discharge can influence decision making).25–27

This heuristic model offers an analytical framework for investigating the sociocultural and organizational aspects of patient safety.5,33 It has been used, for example, to analyse the threats to safety within the operating theatre34 and the institutional constraints on safety improvement interventions.35,36 In the context of hospital discharge, this heuristic is used to elaborate the occupational and organizational boundaries that influence hospital discharge, and in turn, represent a threat to discharge safety.

**Methods**

**Study design**

We investigated discharge planning and care transitions in two local health economies (or systems) in the English National Health Service (NHS). Each system comprised an acute NHS Hospital Trust around which primary, community, rehabilitation and social care services were arranged. Selection of the two systems took into account demographic differences (ethnic diversity, urban/rural balance) and the distribution of nonhospital services. Within each system, the study focused on the discharge of stroke and hip fracture patients, as
representing typically older patients with complex care needs.

The research conducted between 2011 and 2013 involved an ethnographic study of the threats to safe discharge. Ethnography is concerned with describing and interpreting the cultures and social organization of communities and groups. It is especially suited to understanding how social groups give meaning to and structure their everyday lives, including the naturally occurring interactions between actors. In broad terms, it aims to develop an insiders’ perspective of social practice and shared cultures. Ethnography is an established method within health services research and has been used to investigate the sociocultural framing of patient safety. For this study, the principles of ethnographic research were extended to the level of the social system to understand how meanings, cultures and practices were distributed across multiple relational settings.

Data collection

Nonparticipant observations were undertaken to investigate the interactions and boundaries between health and social care agencies during discharge planning and care transition. This included the following: workplace observations to map the discharge processes; in-depth observations of key activities and shadowing of key actors, including doctors, nurses, therapists and social care staff. Observations were undertaken over two to four months in each stroke and hip fracture service and continued for a further two months in the community (Table 1). Observations were hand written in field journals and typed-up electronically as summary reports. Alongside observations, 220 semi-structured interviews were used to further understand how hospital discharge is planned, organized and experienced from the perspectives of different actors. Interviews followed a relatively open topic guide that aimed to gather occupational narratives or stories of the discharge process through which differences in understanding, culture and patterns of working could be examined. Interviews were digitally recorded and transcribed verbatim (Table 2).

Data analysis

Data analysis aimed to develop a descriptive and explanatory understanding of discharge planning and care transition. In the first instance, this followed in the interpretative tradition of identifying empirical concepts, making analytical inference and developing explanatory statements from data. As data analysis progressed, coding was informed by the study’s overarching interest in boundaries and the sensitizing dimensions of organization, culture and knowledge. As such, analysis involved an interpretative interplay whereby emergent codes and concepts were compared across research sites, and simultaneously analysed with reference to the heuristic framework. In line with the above heuristic, the findings examined differences in stakeholders’ distinct modes of organizing discharge; their cultural norms, values and preferences for discharge and their particular ways of understanding of discharge.

Results

Organizational factors

Organizational factors can create or reinforce boundaries between system actors. As might be expected, a vast range of organizational issues were identified, such as resource constraints, leadership or scheduling arrangements, but four prominent issues were found that have an impact on discharge, including the division of labour; the availability, structure and purpose of discharge planning meetings; the use of information communication technologies (ICTs) and the use of discharge planning tools.
The first related to the division of labour or how discharge tasks were organized amongst the workforce. As might be expected, many clinically related discharge activities, such as assessment of mobility or cognitive function, were closely aligned to professional jurisdictions. Others, however, were less clinically bound relating instead to more general activities of care planning and administration, such as ordering equipment or making referrals. There were subtle variations in how these tasks were configured. In both health systems, hip fracture services were typically organized in a highly demarcated and sequential way with discrete specialists taking responsibility for different periods of care (i.e. surgery–recovery–rehabilitation–discharge–follow-up). Following this approach, discharge planning was often delegated to key groups within these areas of responsibility (e.g. Occupational Therapists (OTs) contacted equipment suppliers, nurses liaised with social care and surgeons wrote to General Practitioners (GPs)). This approach reinforced prevailing occupational boundaries and seemed to inhibit collaboration amongst different actors, e.g. discharge planning involved multiple isolated tasks with formal handovers between professional groups. The lack of coordination between professional groups was frequently observed in the way linked activities were poorly aligned or scheduled. For example, when therapist rehabilitation conflicted with nursing care, where social workers visited the ward at a time when the nurses were busy or when surgical ward rounds were separate from those of other medical specialists.

In contrast, the organization of tasks within the stroke services was less demarcated by professional boundaries. Instead, tasks were colocated and combined so that different specialists worked together to complete related or similar tasks. For example, external referrals to community health and social care providers were made by OTs and nurses working together. Similarly, social care assessments were made in partnership between social worker and a patient’s nurse or therapist. This approach resulted in more joined up and collaborative working, where members of the care team seemed to understand better and align their distinct practices.

We try to work in a way that supports one another . . . . we each have a role in discharge and where we can work together the patient gets a better overall experience. [Occupational Therapist, Interview]

I try to time my visits to the times that the family or occupational therapist will be with the patient, that way I can a better understanding of the patients care needs after they leave hospital. [Social worker, Interview]

The second issue related to the organization and scheduling of discharge planning meetings which were prominent settings for communication and decision making. In all sites, daily ward rounds and weekly Multidisciplinary Team (MDT) meetings represented the formal opportunities for interprofessional decision making, but variations were observed across the two research sites. There were differences, for example, in the espoused purpose of these meetings. In most instances, they enabled ward staff (doctors, nurses, therapists) to plan care across the inpatient stay (from admission to discharge). In both hip fracture services, however, these meetings centred on surgical treatment and recovery, with little consideration of longer term rehabilitation or discharge. In one hip fracture service, a separate discharge planning meeting was introduced alongside more usual MDT meetings because of the lack of consideration given to this transitional period and the dominance of surgical recovery in other meetings. In contrast, issues of discharge were routinely considered in all daily and weekly planning meetings for both stroke services. For example, early within a patient’s admission it was usual for rehabilitation and the discharge destination to be discussed alongside immediate acute care needs, thereby leading to a more holistic and long-term care plan.

| Table 2. Number of interviews with each profession by system and organization. |
|---------------------------------|---------|---------|---------|
| Organization and profession     | Health system |
|                                 | One  | Two  | Total  |
| Acute hospital                  |       |       |        |
| Medical                        | 10   | 8    | 18     |
| Nurses                         | 18   | 15   | 33     |
| Health care assistants          | 5    | 2    | 7      |
| Occupational therapists         | 10   | 10   | 20     |
| Physiotherapists               | 16   | 8    | 24     |
| Other therapists (speech, dieticians) | 2    | 3    | 5      |
| Pharmacists                    | 1    | 2    | 3      |
| Administrative                 | 2    | 2    | 4      |
| Managerial                     | 3    | 3    | 6      |
| Social and voluntary care      |       |       |        |
| Social work                    | 9    | 5    | 14     |
| Social care providers          | 2    | 2    | 4      |
| Support group voluntary        | 4    | 2    | 6      |
| Community and primary care     |       |       |        |
| Community nursing              | 2    | 3    | 9      |
| Community hospital nurses      | 5    | 2    | 7      |
| General practitioners          | 1    | 2    | 3      |
| Administrators                 | 2    | 0    | 2      |
| Ambulance (regional)           | –    | –    | 2      |
| Patients and carers            |       |       |        |
| Patients                       | 16   | 14   | 30     |
| Carers/relatives               | 12   | 11   | 23     |
Daily and weekly meetings also varied in terms of composition. In all sites, they were predominantly attended by ward staff. This was especially evident in one hip fracture service where a relatively small group of surgeons, the lead nurse and, on occasion, a therapist representative contributed to daily care planning. As such, decision making within these meetings reflected the narrow emphasis on surgical recovery, rather wider needs. In contrast, where daily and weekly meetings included a wider range of specialists, there was greater scope for decisions to reflect a wider range of patient care issues. Of note, the weekly MDT meeting in one stroke unit was attended by each patient’s key nurse, all medical leads, a pharmacist, lead therapists, community nurses and, occasionally, locality social workers. These inclusive meetings afforded enhanced information sharing amongst different groups, more holistic decision making and appeared to lead to more integrated discharge planning.

It’s a long meeting but we try to give each patient a really thorough review no matter what stage of their care. As they get closer to leaving us this can become more complicated as we need to consider the likely destination according to their needs. [Stroke Consultant, Interview]

In all sites, discharge activities were usually decided through these formal meetings with action taken in the course of everyday patient care. At these times, different groups would share more experiential knowledge of the patient and make incremental adjustments to discharge arrangements based upon this new information. These interactions were more evident where the division of labour was less demarcated because it allowed different groups to work together, which in turn fostered collaboration. Importantly, these informal interactions were often seen as an opportunity for less-powerful groups to influence discharge planning outside of the formal settings.

It’s a very sort of informal basis. We will go and chat as things become apparent. Yeah. I mean outside of the MDT that is pretty much how it’s done on quite an informal basis. [Senior Nurses, Interview]

A third organizational issue related to the use of technologies to support discharge, including paper records and notes; visual aids and whiteboards; telephones and faxes and computer technologies and electronic patient records. Three common boundary issues shaped the contribution of these technologies. First, they were usually assigned to particular occupational groups with limited scope for data sharing. Within the hospital, for example, there were separate record systems for medical, nursing and therapists, with only one stroke unit using a shared hospital record. The implication of having separate systems could be seen further in the referral processes for community health or social care, where it was often necessary for the staff member to draw on multiple information sources to complete a single referral. Second, many communication technologies were inherently complex and reflected uniprofessional issues, despite being designated for group activities. A prominent example was the use of a ward whiteboard that displayed the outstanding tasks for each patient. Although these were used by several groups, they tended to reflect the work of nurses. Third, there was an overabundance and duplication of communication technologies that often seem to complicate their contribution to care planning. It was observed, for example, that separate ICT systems were used for ordering equipment and take-home medicines, discharge summaries, writing to the GP and updating the hospital record system. In all sites, the ward clerk held responsibility for managing these separate systems but this rarely negated the complexity faced by individual clinicians trying to find information or complete online activities.

The final organizational issue related to the use of formal discharge planning guidelines or tools. In all sites, hospital discharge was structured through a variety of care pathways, policies, guidelines, assessment tools and checklists that outlined the expected flow of the patient through the respective care systems, including both hospital and community settings. These were used to variable effect. For example, all sites made reference to care pathways and many used an estimated date of discharge (EDD) to coordinate activities. Although these could coordinate tasks and activities, they were not used by all groups or on a multiprofessional basis. In the hip services, the main care pathway was designed around surgical treatment and recovery, not rehabilitation. Similarly, discharge summaries were used in all sites to share basic information with community care providers, but these often reflected only limited information about medical treatment and recovery. Such tools could easily reinforce occupational boundaries rather than support collaboration. Where such tools and approaches were used in a shared and collective way, such as in the stroke services, they appeared to have a greater influence on coordinating shared activities.

We try to set an EDD as soon as possible so that we all know what we are working towards. [Stroke Nurse, Interview]

I use the checklist as a way of following the progress of the patient and keeping on top of all the activities need
to ensure a smooth discharge. [Discharge coordinator, Interview]

Culture

Three prominent cultural dimensions reinforced boundaries between different health and social care actors. The first related to the value or priority accorded to discharge. For orthopaedic surgeons, discharge was generally seen as a low-value task, with emphasis given instead to urgent surgical care. This view was also reflected amongst many ward nurses and some physiotherapists, who similarly emphasized urgent care rather than longer term discharge. As such, these occupational groups appeared to participate little in discharge planning and, where possible, attempted to delegate discharge tasks to other staff groups or junior colleagues. This was observed, for example, in the way orthopaedic MDT meetings gave limited consideration to discharge with discharge tasks delegated to other staff, usually occupational therapists.

For the vast majority in the stroke services, and also in some areas of hip fracture care, discharge was seen as important activity but for different reasons. Across all services, for example, ward managers and senior nurses tended to value discharge, not for its contribution to patient recovery but because it released beds for new inpatients.

We have got to get better at discharging patients because the demand for beds means that we can’t afford to keep patients in hospital for any longer than necessary. [Manager, Field journal]

For the majority of staff in both acute stroke services, discharge was valued as a discrete and important transition that, if appropriately arranged, could support longer term recovery and prevent readmission. This view was widely shared across professional groups, including those providing community rehabilitation and social care. With their shared appreciation of discharge, these groups appeared more willing to work together and find ways to tackle ‘shared’ problems.

It’s a crucial stage and one we have got to recognise as important in its own right [Discharge coordinator, Field notes]

The second cultural issue relates to the beliefs and norms about patient and family involvement in care and discharge planning. Across three of the research sites, patient and family involvement in formal decision making was largely limited to bedside consultations, social work assessment and periods of rehabilitation education. In most of these interactions, clinicians aimed to gather or convey information to patients, but rarely appeared to involve patients as active partners in their own care. In one stroke service, however, a different approach was taken where patients and their family members were explicitly valued as central to their care and recovery. A prominent example of this was the scheduling of ward rounds and social work assessments to coincide with patient visiting times, the introduction of a Family Meeting to discuss and plan ongoing care with community rehabilitation specialists, and inviting carers into the hospital early on the day of discharge to support care transition. In this service, patients were seen as actively contributing to their own recovery and as providing a focal point around which interprofessional communication might be facilitated.

The Family Meetings give everyone the chance to contribute to the decision-making. They are really important for us to understand each person’s home circumstance but they also convey to the family that they are an equal partner in the recovery process. [Stroke Consultant, Interview]

A final cultural issue related to the persistence of a blame culture that could reinforce division and tensions between professional groups. Where responsibilities were highly demarcated, it seemed more common that actors would blame others for holdups, delays or inaccuracies. This was particularly common between health and social care where delayed discharge was the focus of significant blaming. In sites with more inclusive planning meetings and overlapping work roles, there was greater appreciation for how others worked and the common pressures faced by different system actors. As such, in these settings, actors were more understanding and less blaming when discharge activities were delayed or inaccurate.

You never know when the social work team will visit the patient. There just seems to be a void between making a referral and hearing back. [Ward nurse, Interview]

Knowledge

During discharge planning and care transitions, two aspects of knowledge were found to reinforce occupational and organizational boundaries. The first concerned staff understanding of hospital discharge in the context of their overall work. For ward nurses and doctors, discharge was commonly regarded as an end point where their responsibility for patient care was transferred to another. In contrast, those in community health and social care saw discharge as the beginning of their responsibilities for rehabilitation and care.
These differences clearly reflect each group’s position within the patient journey and underlie many of the problems in coordinating work, including the value given to discharge and the way in which work tasks are organized. These differences in understanding were exemplified by whether discharge was organized for the end or the beginning of the day or week. Those who saw it as an end point tended to organize discharge for Friday, whereas those who saw it as a beginning point planned care to start on Monday; meaning the patient might have reduced care over the weekend.

Discharge takes place when the patient has recovered from surgery and will be better cared for in another, more appropriate environment. [Surgeon, Interview]

Our involvement doesn’t start until they leave hospital and it’s a really busy time for completing care plans. [Social care team, Field notes]

Others, however, saw discharge as an ongoing or transitional period that required distinct caring and collaborative activities. This was evident amongst occupational therapists and discharge coordinators, who also acted as a conduit between the acute and community settings. Working across the acute and community boundary, these actors appreciated the distinct activities, values and meanings of each setting and the need to find ways of aligning these differences.

A second difference related to the types of knowledge used and seen as necessary for planning discharges. For the likes of doctors, nurses and physiotherapists, biomedical knowledge about disease state, cognitive function and physical activity were the primary indicators of readiness for discharge. This type of clinical evidential knowledge was usually developed through patient assessment and laboratory testing and contributed to formal decision making in MDT meetings and ward rounds. Although occupational therapists, social workers and social care teams had similar forms of technical knowledge, they more readily used other, more holistic knowledge about patient recovery, such as psychological, social or personal needs. This experiential knowledge was usually gathered through informal interactions with patients and families, and used to enhance more evidential knowledge so as to facilitate patient-centred care planning. Such experiential knowledge was usually less valued than biomedical knowledge, and tended to feature at the periphery of decision making, suggesting a further boundary between staff groups. Such differences in knowledge also revealed the persistence of uniprofessional knowledge domains whereby discharge planning often resembled a patchwork of distinct perspectives, rather than an interweaving of multiple perspectives. This was especially the case in the hip fracture services where discharge planning tended to be organized sequentially:

The doctors are guiding [discharge meetings] ... in terms of medically where would the patient likely to be going in terms of their recovery. [Occupational Therapist, Interview]

There is little understanding on the wards about the patient’s wider needs and how these might be addressed. [Social worker, Interview]

Discussion

Main findings

Hospital discharge is increasingly recognized as a vulnerable stage in patient care and recovery and exemplifies the threats to safety located between care providers, processes and settings. A growing body of international research shows that patients often experience unsafe care before, during and after care transition, often because of the difficulties of coordinating multiple health and social care agencies. Elaborating this view, this study suggests discharge relies upon a complex network of specialists working within the acute hospital setting, community health and social care, primary care and voluntary sectors. Analysis of the threats to safe discharge therefore requires attention to the interdependencies and interactions between these heterogeneous groups. Analysis of these system interactions and the sociocultural framing of system dynamics extends prevailing approaches to patient safety by showing, for example, how clinical micro systems are interdependent and framed by wider social, cultural and institutional forces. As such, analysis within micro systems should also consider wider meso- and macro-system factors.

Developing this perspective, the study investigated how occupational and organizational boundaries can represent a latent threat to discharge safety through exacerbating system complexity. In particular, the problems of coordination and collaboration often stem from the boundaries that define and separate professional groups. Although the study found well-recognized boundaries between health and social care agencies, it identified a number of less well-recognized issues that might explain variations in discharge safety. In line with the analytical heuristic, these related to differences in organization (division of labour, configuration of planning meetings, use of technologies, influence of planning tools), culture (value of discharge, blame culture, collaboration, patient involvement) and knowledge (the meaning of discharge, types of legitimate knowledge to inform discharge planning). These help explain the persistence and impact of
occupational and organizational boundaries; such as where actors perceive or value discharge differently, or where working patterns are configured to inhibit collaboration. In such cases, boundaries exacerbate system complexity through complicating or fracturing the interdependent interactions between health and social care actors. As such, these boundaries might be interpreted as a latent threat to system safety. The effect of these system-level relationships might not always be apparent, especially where they cascade to other system areas. For example, the challenge of coordinating health and social care assessments during inpatient admission can mean that a patient’s discharge is delayed and they leave hospital with an inappropriate care package.

Looking beyond hospital discharge, the organization, culture, knowledge framework provides a useful basis for understanding the dynamics of system complexity, especially the sociocultural aspects of relational interdependency. In extending this model, further consideration might also be given to the dimension of power that appeared to further influence system interactions. This could be seen, for instance, in relation to who determines readiness for discharge or allocates scarce resources. An extended framework has the scope to inform research on the implementation of service improvement interventions where such dimensions and boundary issues are known to stymie change.

Returning to discharge safety, the study suggests, in broad terms, that systems with more integrated and multiprofessional working, shared resources and opportunities for interaction might also be characterized by cultures that commonly prioritize or value discharge and, in turn, exhibit a more inclusive and collaborative approach to discharge planning. The dimensions of organization, culture and knowledge align in ways that allows boundaries to be aligned or to become more permeable, thereby enabling coordination and collaboration and reducing systems complexity. The study found, however, that this broad characterization might be difficult to find and that prevailing occupational and organizational boundaries continue to exacerbate system complexity. Of note, there were stark differences between hip fracture and stroke services. In comparison to the stroke service, the discharge of hip fracture patients involved a more tightly defined division of labour relying on multiple sequential handovers between subgroups. In addition, these services revealed little shared understanding of either the importance or meaning of discharge to patient recovery, often favouring acute surgical care over longer term recovery. These factors might explain why hip fracture patients appeared to experience a more complex, fragmented and unsafe care transition, as compared to stroke patients where there was greater evidence of collaboration and coordination across boundaries.

**Strengths and limitations**

Complex systems are extremely challenging to study. It is difficult, for example, to identify the range of actors involved, to map their patterns of interaction and to explain the implications for system safety. We observed that each organizational domain and occupational group had highly developed and historical patterns of working, which stakeholders often found difficult to explain. The research also involved multiple, parallel periods of data collection within different care settings, where the research team were constantly challenged to make sense of local practices, and legitimize their position with stakeholders. Considering these challenges, particular efforts were made to enhance the quality of the study. A source of empirical credibility is the richness of data collected over 18 months, with over 200 participants. This was further enhanced through comparison between care systems and patient groups, thereby enabling the identification of unique events, negative cases and theoretical interpretation. Data collection and analysis also involved constant comparison between interview and observational data, which was especially useful for confirming interview data, and elaborating activities that participants found difficult to articulate.

**Implications**

Despite occupational and organizational boundaries continuing to exacerbate system complexity and threaten discharge safety, the study identified possible areas for improvements. The first is the scope for actors within the discharge process to work across occupational and organizational boundaries, sometimes referred to as boundary spanners or knowledge brokers. Through working across boundaries, these staff are able to appreciate and learn about forms of knowledge, cultures and ways of working that are not always accessible to those in professional silos. Through appreciating such differences, they can mediate social differences and support more integrated ways of working. The study found discharge coordinators, community nurses and early support discharge teams mediate social boundaries in three ways. First, they support communication between separated groups by reconciling differences in meaning and acting as translators. Second, they are repositories of knowledge, through combining the expertise of others into a single point of contact to help navigate complex processes. Third, they provide a coordinating function through crafting combined or aligned ways of working, especially
through taking responsibility for complex tasks that require the alignment of multiple perspectives.

The second area of improvement relates to how interprofessional communication might be enhanced through providing more routine opportunities for interaction. The study found both formal and informal interactions contribute to improved hospital discharge, including MDT meetings and everyday clinical interactions. Although formal meetings remain important for decision making, the study suggests they do not always include diverse perspectives, are dominated by sectional or professional interests and can be poorly scheduled. The study also suggests that greater attention should be given to the less formal opportunities for reciprocal interaction where actors are colocated or have ‘functional proximity’. This functional proximity enables divergent actors to share experiential knowledge, develop mutual understanding, build trust and align working practice, thereby fostering greater collaboration in routine work.

The third area of improvement relates to a culture of collaboration. The study found different services can have distinct beliefs and values about discharge but that a culture of collaboration was more evident where actors shared understandings of discharge, where they valued its importance to the patient and where there was an expectation that multiple perspectives were needed to inform robust discharge planning. Looking across the research sites, it is doubtful that such a culture could be nurtured across the wider health and social care system, yet it was found in certain areas, such as within hospital wards, rehabilitation units or social care settings. These services were characterized by the appointment of discharge coordinators, had enhanced levels of functional proximity and patients were actively involved in discharge planning.

Finally, the study suggests technological and procedural changes can be made to support discharge planning. In general, well-coordinated, easily accessible and legible patient records were integral to organizing discharge. Importantly, such records might be developed on a multiprofessional rather than uniprofessional, and be made available to different professional groups. With particular regard basis to the use of ICTs, the study found no consistent approach, with fragmentation and duplication of computer software across all sites. ICTs offer an obvious solution to both the storage and sharing of knowledge across boundaries, but currently they seem to support intra- rather than interorganizational activities. Similarly, the use of discharge policies and checklists was beneficial but only where these are recognized and utilized by all relevant groups, not just within professional or organizational boundaries.

Conclusions

Hospital discharge is a vulnerable stage in a patient’s journey. It relies upon the coordinated efforts of tightly coupled, interdependent and heterogeneous actors. This complexity is exacerbated by the persistence of occupational and organizational boundaries, which we interpreted as a latent threat to safe discharge, influencing the performance of clinical micro systems and the interconnections between subsystems. These boundaries can be perceived in terms of the dynamics of organization, culture and knowledge. Differences in these areas can impact upon discharge planning and care transition. Greater use of discharge coordinators, enhanced functional proximity, a culture of collaboration and simplified technologies might help cross these boundaries and mitigate systems complexity.

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