



# Why is hospital discharge so difficult? Reconsidering patient trajectories in theory and practice: Insights from an ethnographic study of transitions in hip fracture care

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## ARTICLE INFO

Handling Editor: Medical Sociology Office

## ABSTRACT

This paper combines translational mobilisation theory and assemblage thinking to elaborate the patient trajectory concept. Deploying ethnographic research on transitions in hip fracture care in Wales (2014–2016), it describes and explains the structures and logics that condition transition interfaces, how transition infrastructures enact patients and with what effects. Comparative analysis of transition in three distinctive assemblages offers new insights into the challenges of hospital discharge and opportunities for research and improvement.

## 1. Introduction

The patient trajectory (Strauss et al., 1985) is a well-established healthcare concept, stimulating many studies of trajectory experiences and improvement interventions. Originating from the negotiated order perspective (Strauss et al., 1964), the concept emphasises emergence. It encompasses the ‘physiological unfolding of a patient’s disease’ and ‘the total organization of work done over that course, plus the impact on those involved with that work and its organisation’ (Strauss et al., 1985: 8). Studying this complexity – in research and practice - is challenging. The concept has been extended to explore the interaction of multiple trajectories (Timmermans, 1988), integrated with ideas about illness careers to describe status changes at different phases (Glaser and Strauss, 2007), and combined with game theory to explicate disagreements between healthcare providers in complex trajectories (Allen et al., 2004). Nevertheless, although routinely deployed to denote care processes in sociological research, few have exploited the concept’s potential as ‘a means of analytically ordering the immense variety of events’ (Strauss et al., 1985: 9) through which trajectories evolve.

Drawing on Translational Mobilisation Theory (TMT) (Allen and May 2017) and insights from assemblage thinking (Deleuze and Guattari, 1987; Latour, 2005), this paper proposes a conceptual framework for studying patient trajectories. A practice-based theory of emergent collective action, TMT combines interactionist perspectives on negotiated orders (Strauss et al., 1964), analyses of socio-material networks (Latour, 2005), ideas about sensemaking (Weick, 1995), and theories of Strategic Action Fields (SAF) (Fligstein and McAdam, 2011). TMT has

been used *inter alia* to analyse nurse staffing systems (Allen et al., 2023), intoxication management (Moore et al., 2020), and implementation processes (Salma and Waelli, 2021). Both assemblage thinking and TMT conceptualise agency as arising from networks of socio-material relations. Whilst TMT provides theoretical resources for studying individual projects of collective action, patient trajectories comprise multiple projects, and assemblage thinking is a useful heuristic for explicating these associations.

This paper focuses on projects of collective action at service interfaces in the hip fracture trajectory. A major cause of quality and safety failures, improving the management of transitions is an enduring international policy priority (WHO Europe, 2012), with hospital discharge a particularly intractable issue. Despite diverse interventions, the common aspiration for improvement is expressed through the patient pathway metaphor. Metaphors frame problems that point to certain solutions, and the linearity, order, and formality associated with pathway imagery is discordant with everyday practice. Many entering healthcare have diverse needs, deviating from planned routes, and the prescriptive qualities of pathways contrasts with the unpredictable qualities of healthcare systems. Despite decades of activity, improvements have been limited, prompting calls for a paradigm shift (Braithwaite, 2018).

This paper extends healthcare research influenced by science and technology studies (STS). While Strauss et al. (1985) studied patients’ progression through care systems, here the analysis draws on Mol’s (2002) insights into the ontological multiplicity of medicine, to focus on how patients are enacted as objects of practice for trajectory

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<https://doi.org/10.1016/j.socscimed.2024.116769>

Received 24 April 2023; Received in revised form 5 March 2024; Accepted 8 March 2024

Available online 16 March 2024

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mobilisation. Unlike Mol's topographical focus, this paper has a temporal-spatial orientation, and traces object-formation as care is mobilised. It also considers the effectiveness of enactments in coordinating care, and what needs to alter to improve processes. This involves attending to the socio-material relations in trajectories, building on two additional literatures.

First, it deploys STS insights on technologies in healthcare work. Viewing agency as distributed between humans and non-humans, STS-informed studies explore how technologies mediate practice. Technologies prescribe actions and discipline actors, but they are also influenced by users (Berg, 1999; Timmermans, 1988). Action is shaped by the scripts embodied in technologies (ways of seeing, acting in a social world) (Akrich, 1992), their affordances (functions and material properties) (Gibson, 1979), and their use in practice. Healthcare organisations rely on various technologies for coordinating, monitoring, and accounting for activity; this paper contributes to research which has analysed their enrolment in systems of work (e.g. Berg, 1997, 1999; Dodier, 1998; Greatbatch et al., 2006).

Second, like Strauss et al. (1985), the analysis attends to the invisible practices that sustain organisational functioning, drawing on previous research on nurses' 'care trajectory management' work (Allen, 2015). Understood as 'obligatory passage points' in healthcare systems, nurses make a central but taken-for-granted contribution to the organisation of activity. They maintain 'trajectory awareness' through practices of 'reflexive-monitoring' and 'sensemaking'; generate working knowledge through processes of 'translation'; and 'articulate' activity to mobilise care.

### 1.1. Study design

A multi-site ethnography was conducted in a health and social care region in Wales (2014–2016). Hip fracture trajectory was selected for two reasons. Firstly, it encompasses diverse providers, from unscheduled emergency services, through hospital to community care. Secondly, it provides an opportunity to study planned and emergent processes. Hip fractures are unscheduled events, and while informed by evidence-based guidelines and performance standards, managing the trajectory is complicated by co-existing health conditions in older people.

Data were generated through shadowing, observation of activities, in situ interviews (recorded as low-inference fieldnotes and digitalized), audio-recorded interviews ( $n = 13$ ), and collation of formal and informal artefacts (protocols, care record proformas, referral documents). Fieldnotes and interview data were anonymised, uploaded into computer-supported data analysis software (Atlas/ti), and coded to facilitate management. Documents and artefacts were manually analysed and treated both as topics and resources. A total of 108 participants agreed to be shadowed and/or participate in an audio-recorded interview. Patients and families were not formally recruited; everyone had the option to request that their care not be observed. The study received ethics and research governance approvals (IRAS ID: 94,593). [Supplementary Table 1](#).

### 1.2. Theoretical framework

The research followed an abductive approach (Timmermans and Tavory, 2012). TMT informed data generation and initial analysis. TMT attends to the socio-material relations oriented to a shared goal (*project*), the mechanisms through which this is accomplished, and the conditioning effects of context (*SAF*). Individual services and interface transitions were conceptualised as projects. The analysis focussed on the structures, organising logics, interpretative repertoires, materials, and technologies in the SAFs that conditioned action, and how service actors (re)constituted patients as objects of practice (*object-formation*), maintained trajectory awareness (*reflexive-monitoring*), aligned activity (*articulation*), shared understandings of the patient (*translation*), and created order and accounted for action (*sensemaking*).

Additional concepts were developed to elucidate object-formation and transitions. Patients were conceptualised as composite objects configured around constellations of concerns associated with various ordering logics. Clinical logics enacted objects aligned with specialist professional ontologies (*professional object*) and collective decision-making (*interdisciplinary object*). Administrative logics produced objects for prioritising care (*triage object*), distributing resources (*allocative object*), and accessing services (*referral object*). Mobilisation logics generated objects focused on trajectory management (*trajectory object*) and transition (*transition object*).

Objects had different affordances. *Narrative objects* exhibited the flexible stability associated with boundary objects (Star and Griesemer, 1989). *Technical objects* were concrete, fixed, stable, and ready-to-hand (Rheinberger, 1997). *Epistemic objects* (Knorr Cetina, 1997) were characterised by flux and emergence. Objects coexisted in healthcare practices. Modes of coexistence were formal, inscribed in documents designed to coordinate action, or informal, embedded in taken-for-granted everyday activities. Individual services constituted patients as a *collective object of practice*, a mode of object coexistence aligned with a shared institutional goal, where the patient is more than one but less than many (Strathern, 1991).

Transitions were conceptualised as discrete projects oriented towards achieving an institutional status passage (Glaser and Strauss, 1971). This involves translating the patient from a collective object of practice of one service into a collective object of practice of another (Allen, 2015). To systematically examine these activities, the following concepts were introduced:

1. *Transition Interface*: the structures and organising logics that give rise to, and create the conditions for, transitions.
2. *Transition Infrastructure*: the socio-material arrangements and mechanisms of action that coordinate collective action across transition interfaces.

In this context, *transition objects* represent distinctive objects of practice that stabilise, translate, and articulate activity across a transition interface.

While TMT offered conceptual resources for the relational analysis of individual projects, assemblage thinking provided a useful heuristic for conceptualising trajectories as emergent wholes. Like TMT, agency is understood as stemming from the dynamic interplay between network actors, but assemblage thinking also has a temporal-spatial dimension. Assemblages are envisaged as dynamic and productive entities, shaped and reshaped by ongoing processes of deterritorialization and reterritorialization. The assemblage prism draws attention to the interrelations between discrete projects of collective action, and changes in the scale, qualities, and complexity of trajectories as they evolve in time and space (Fig. 1).

## 2. Findings

The hip fracture trajectory encompassed three distinct assemblages: Unscheduled Assemblage (UA), Acute Assemblage (AA), and Discharge Assemblage (DA). This section describes and explains these socio-material relations. Comparing the management of transitions in each assemblage illustrates the factors that condition interfaces, how infrastructures enact patients as transition objects, and the impact of these enactments on trajectory mobilisation. The findings offer insights into the benefits and limitations of different transition arrangements and the specific challenges of hospital discharge. Data extracts are fieldnotes unless otherwise indicated.

### 2.1. Unscheduled Assemblage

UA encompassed Emergency Medical Services (EMS), Emergency Department (ED), and Assessment Unit (AU). EMS serve as patients'

initial contact with the healthcare system, addressing immediate needs, making disposal-decisions (treatment at the scene, referral, or secondary care), and facilitating care transfer. ED manages diverse patient trajectories, determining whether patients can be treated and discharged or require a hospital specialist referral. AU is an intermediate facility, providing care following referral, until a hospital bed becomes available.

Situated at the interface between public need and hospital provision, unscheduled care in the UK faces persistent challenges. Factors such as an aging population, social issues like poverty and social isolation, and difficulties accessing primary care have heightened demand. ED exit blocks, stemming from reduced acute bed capacity, further strain the system. To alleviate these pressures, new care models have been introduced, allowing for the resolution of calls without ED transport and the development of interventions to manage patient flows. All services were subject to national performance targets and despite having distinct institutional functions, were enrolled in a shared organising logic: to mobilise and prioritise care and reach a disposal-decision.

Suspected hip fracture patients were transferred to ED, where doctors were responsible for reaching a provisional diagnosis. Effecting referrals entailed aligning patient histories, signs, and symptoms with the professional objects of the relevant speciality, to 'sell patients' (Hilligoss, 2014). Medical interlocutors indicated this could be time-consuming and frustrating. But not in hip fracture, with diagnosis confirmation via radiology performing the translational work necessary to enact a referral object to Trauma & Orthopaedics (T&O).

EMS Responders (EMSR) and nurses were responsible for patients' ongoing care and trajectory mobilisation. With understanding of their respective social worlds, their practice was mediated by clinical and mobilisation logics. EMS work entailed the constitution of a professional object, oriented to matters of concern relevant to the patient's immediate care needs and reaching a disposal-decision, and a trajectory object, typically assembled in transit, oriented to the clinical and administrative work of ED. These logics were inscribed in the EMS patient care record.

The work of ED and AU nurses involved enacting the patient as a professional object, through documentation of matters of nursing concern in structured documentation, and a trajectory object, oriented to the mobilisation of care. Nurses have an important but largely invisible role in trajectory management (Allen, 2015). In UA this work reflected the need to maintain patient flow and nurses' role in the management of transitions. ED nurses reflexively-monitored trajectories, informing ED doctors about the status of investigations and tests, and reviewed medical records to establish treatment plans. Patients were moved through the department at short-notice. AU nurses deployed an informal structured proforma as a coordinating and accumulating device (Berg, 1999) to maintain trajectory awareness for transfer and handover to the ward. Nurses also constituted the patient as a collective object of UA practice. A streaming nurse liaised with EMSRs to translate the patient into an allocative object to assign a bed. ED nurses constituted the patient as a triage object for managing medical workflows. They also deployed 'care trajectory narratives' (Allen, 2015) to coordinate overall ED activity. Informal artefacts, care trajectory narratives are mechanisms of encapsulation which function to sustain a working knowledge of individuals' overall care.

EMSRs and nurses were responsible for transitions and care trajectory narratives were the primary artefacts in the transition infrastructure. Enacting a trajectory narrative was a collaborative activity, which involved perspective-taking (Bolland and Tenkasi, 2001) and sense-making. Narratives had a retrospective-prospective orientation. The following example is handover between the EMSR and ED nurse. EMSR offers a narrative summary of the accident and the patient's bodily troubles, and the nurse clarifies that the fall was a result of a 'slip not a trip', important information for ED diagnostic work as slips cause more serious injuries.

EMSR: 85-year-old lady who was at home and slipped. She landed on her right side and has lacerated her head. A neighbour helped her get up. She can't weight bear. There is no obvious shortening, no rotation. I've given her Paracetamol. She's OK when she is still. [] she has not got heart disease but the 3 lead shows a left bundle and ectopic. She's got an aortic aneurysm which they are keeping an eye on. Her bilateral BP is fine. She's broken her back in the past but has no new pain. No pain in her head. She's on constant oxygen. Her SATS are 91 but that's normal. She has a NEWS score of 5 but because of her SATS, which is normal. She's got bronchitis associated with TB, which is why she's on oxygen. She didn't trip over the tube.

Nurse: So a slip not a trip?

EMSR: Yes.

Narratives were dynamic and additive. These infrastructural arrangements were replicated at the ED-AU and AU-Ward interfaces, where narratives were revised to incorporate a wider range of concerns as the trajectory evolved. Professional identities were at stake in transition handovers, and service pressures could mitigate these processes, with the movement of patients outstripping object-formation.

ED Nurse: Some of them over there (AU) will rip you apart with the handover. [...] Oh 'why haven't you done this and why haven't you done that?' But when they say we must move them round then we have to go.

## 2.2. Summary

Trajectory mobilisation in UA encompassed three discrete services enrolled in a shared organising logic. Collective objects of practice were aligned across services, and clinical and mobilisation objects were interleaved in the practices of EMSRs and nurses. Transition infrastructures comprised EMSR and nurses, with reciprocal understanding of each other's work, in joint perspective-taking and sensemaking processes. Enacted as care trajectory narratives, transition objects had flexible-stability enabling care to be coordinated in a fast-paced high-throughput environment.

## 2.3. Acute Assemblage

AA encompassed the Ortho-Geriatric Ward (OGW) and Operating Department (OD). OGW specialised in orthopaedic injuries in older patients, shared between T&O surgeons and ortho-geriatricians. OD comprised a specialist infrastructure for anaesthesia, surgery, and post-anaesthetic recovery. Activity in AA was aligned around shared logics of safety and efficiency, oriented to guidelines for timely hip fracture surgery and optimal utilisation of OD facilities.

Despite mutual understanding of each other's social worlds, OGW and OD worked with different collective objects of practice. OGW focused on diverse concerns across the preoperative and postoperative trajectory. Activity was distributed across nursing and medical teams, with nurses largely responsible for coordination, deploying care trajectory narratives for this purpose. OD work was more narrowly focused on the detailed corporeal-material relations of surgical work; these were inscribed in an integrated OD care plan which coordinated entry and exit from the department and was used to account for practice. Transition was mobilised through practices of conscription, bracketing, division, and reconstruction. Documents were central actors in the transition infrastructure. They enabled OD and the anaesthetist to operate as remote actors to coordinate ward activity in configuring patients for surgery, and OGW to coordinate the work of the Post-Anaesthetic Care Unit (PACU) in configuring patients for return to the ward.

Junior doctors rotated 6-monthly, and documents had been developed in OGW to discipline their work. They enacted patients as objects

of anaesthetist practice through completion of a structured proforma to clerk patients, which was used by OG consultants and T&O surgeons to plan surgery. T&O surgeons and OG consultants shared a commitment to operate on all hip fractures, but anaesthetic risk, a primary concern for anaesthetists, can cause disagreements (Fox, 1994). Anaesthetists could refuse patients and surgical planning addressed these concerns, sometimes involving delayed operations to manage underlying health issues or negotiations between the OG consultant and anaesthetist in challenging cases.

In preparing patients for surgery, junior doctors worked with a clinical guideline which included decision algorithms to prompt and explain required actions. Completion was monitored by Frailty Nurses (FN), who had formal responsibility for transitions. Nurses have uncertain authority in care trajectory management (Allen, 2015), but FNs worked closely with the OG consultant, and junior doctors largely tolerated these interventions, at least in public.

Preparing patients for theatre was highly routinised in nursing work, involving tasks such as ensuring the patient was fasted, and the removal of all attachments. On the day of surgery, transition was mediated by a Preoperative Checklist. Completed by nurses, the document required confirmation of twenty-two standardised items. Black-boxing (Latour, 2005) the multiplicity of activities undertaken by nurses and doctors to prepare the patient for surgery, it enacted the patient as a technical transition object, concrete, specific and ready to go. Patients were transported to OD by a porter and OD Health Care Support Worker (HCSW). There was no formal handover; any interaction was serendipitous. OGW received no prior notification that the patient was to be collected, and because check-listing was interleaved with other nursing work things could be overlooked. While they had no formal responsibility for checklist completion, HCSWs reviewed documentation for omissions.

HCSW: You tend to go straight for the things we have lots of problems with – like the stockings, the anti-coagulants – you know that's going to be the first hold-up.

In OD, the Anaesthetic Assistant (AA) repeated the check-listing process. While apparently routinised, this formally accountable action fulfilled an important safety function. Interviews with OD staff revealed items could be ticked, but ward staff did not always understand their underlying rationale.

AA: the information doesn't translate through from the ward to us because the care plan isn't understood by everybody.

In OD, the broader concerns of OGW work were bracketed off. Nursing documentation remained on the ward, and although medical notes accompanied the patient, these were not used during the intra-operative period. In the operating theatre, the patient was divided into two professional objects: an anaesthetic object and a surgical object, inscribed in separate sections of the OD documentation. While functionally interdependent, surgeons and anaesthetists, worked largely autonomously. The WHO surgical checklist (WHO, 2009) articulated activity before and after the operation, but on transfer to the Post Anaesthetic Care Unit (PACU), the anaesthetist and scrub nurse provided separate brief handovers.

Patients spent about an hour in PACU until they were physiologically stable. PACU nurses accompanied patients back to the ward, and transition was managed in-person. Once again, documents were central actors in the transition infrastructure. The OD care plan featured a 15-point discharge checklist, signed by both the PACU and ward nurse, which black-boxed PACU nursing work, and specified the patient's required configuration for transfer. This was complemented by a care trajectory narrative. OD documentation formed part of the cumulative medical record, but it was notably reductionist, reflecting the need to account for the detailed corporeal-material concerns of surgery in a time-pressured environment. PACU nurses engaged in sensemaking work, scrutinising OD documentation and medical notes to generate a

narrative reconstruction of the patient's operation within the wider context of their care trajectory. Handover encompassed both a discussion of the technical care components and a narrative account of the overall trajectory. Comparing the handover received by the PACU nurse (Extract 1), to the handover with the ward nurse (Extract 2), illustrates the PACU nurse's sensemaking work and narrative reconstruction.

Extract 1

Anaesthetist: This lady is X she's had a left DHS (dynamic hip screw hip surgery). [...] She's got COPD so her chest is quite bad. She has a bronchial inhaler. So anything more than 94 I am happy. [...] She has a Fentanyl patch which she's used to and she also takes Tramadol.

Scrub Nurse: This is X she's had a left DHS. She has Mepore dressing wise, stitches on skin, blood loss 200mls. That's it from my side.

Extract 2

PACU Nurse: This is X. She had a fall and sustained a closed fracture of the left femur. She's gone down to theatre and had DHS. She has a spinal at T4-5. I've checked the block it's at T12. She can't move her legs. She's also had a left block. [...] She's had a litre of fluids and is now on IV antibiotics. Otherwise, no IVs in there. She's COPD and preop her sats were 88%. Her chest is very severe, and the anaesthetist said it was very brittle. She was quite short of breath preoperatively but if you can keep her sats above 94. In theatres it was about 88–97. She's got an oxygen mask and says at home she gets headaches and short of breath. She takes oxygen intermittently for shortness of breath. [] She has shortness of breath at rest, emphysema, prolapsed bowel, osteoporosis, uses a pillow at night. She lost 200 mls. [...] So I took out the arterial line as any gases will be odd. Stopped IV fluids and started on oral fluids. She had 150 mls downstairs. She has a Mepore dressing which is intact, [] one cannula in hand. Cardio was OK, no pain and no nausea. Oh! She's allergic to Penicillin. She has her Ventolin inhaler with her.

## 2.4. Summary

AA transitions involved complex processes of object-formation and translation, reflecting the gap between the collective objects of practice of OGW and OD. Transition was initiated through formally managed practices of conscription, bracketing, and division, alongside informal processes of narrative reconstruction. Documents allowed remote actors to coordinate the work of OGW and PACU nurses in configuring the patient for trajectory mobilisation, and checklists served a gatekeeping function to ensure safe care. Documents were enabled to act through the formal and informal efforts of human actors, and while effective in constituting the patient as a technical transition object of practice for OD work, human actors performed the narrative reconstructions that facilitated transition back to the ward.

## 2.5. Discharge Assemblage

In the UK, as elsewhere, discharge planning is an organisational priority, reflecting bed-utilisation concerns in the context of reduced acute care capacity and patient safety risks. An acknowledge transition problem, research has identified structural barriers (Gadsby, et al., 2022), insufficient social care capacity and acute sector coordination (The Health Foundation, 2023), difficulties of agreeing 'discharge readiness' (Skovgaard, et al., 2022) and the challenges of knowledge sharing (Waring, et al., 2014) as contributory factors, all of which were evident in this study.

The following analysis focuses on the management of transition for the purposes of a home discharge. Deciding to discharge to a residential care facility was often difficult, but management of transition was relatively straightforward. Like UA and AA, it involved transfer between

preconfigured care settings with specific institutional functions. In home discharge, as Skovgaard et al. (2022) have shown, caring infrastructures must be assembled before care transition can take place. Studying these processes highlights the difficulties of transition object-formation at the hospital-community interface, not considered in previous research.

The DA expanded in scale and complexity. It drew in the wider OGW multidisciplinary team, including pharmacists, physiotherapists, and occupational therapists, each working with individual professional objects of practice. Patients and families, became more prominent actors, reflecting an extended trajectory focus beyond bodily concerns to include the lifeworld, and families' enrolment in discharge arrangements (see also, Bishop and Waring, 2019). Depending on the discharge plan, DA also included various community providers: community health services, and social care services provided by the local authority.

Safety was a shared concern. But in OGW the emphasis was on facilitating timely discharge, whereas like the rest of the UK, social care services were over-extended, and oriented towards demand management. There was mutual understanding between OGW and community health services, but relationships with OGW and social care services were more distant. In OGW, work focused on the patient's evolving recovery trajectory and discharge planning. Activity was distributed across the multidisciplinary team and coordinated by ward nurses and FNs who deployed care trajectory narratives for this purpose. Community care was provided by different services with singular institutional functions. To ensure a safe discharge, providers required stable recovery trajectories, so that care and infrastructures could be planned. Thus, while OGW and community services were oriented to a similar constellation of concerns, their collective objects of practice had different affordances. Transition involved translating the patient from an evolving narrative object of practice of OGW work into multiple technical objects of practice of different community services.

Discharge involved first, agreeing a discharge destination, and second, making the infrastructural arrangements for safe transition.

FN: Once they've been to theatre, it's, it's working out where they're going. Are they going back to where they've come from? Are they safe to go home? [...] Do I need to put any sort of services in? [...] If they can't go home, where's the next place? Do they go into residential care? Do they have capacity to accept that?

(Interview)

Despite bed capacity pressures, the OGW team was dedicated to promoting independence. Trajectories were uncertain; some patients took longer to recover; others would never regain their previous level of fitness. As Latimer (2008) has observed, future persons are enacted according to a past, and a crucial aspect of determining a discharge destination was establishing the person's level of functioning before admission. Families mattered too; often already enlisted in on-going care arrangements, discharge could be contingent on their support. Families also offered insights into the viability of discharge plans. Memory problems are common among hip fracture patients, and in many cases, cognitive functioning became a significant concern. If individuals were assessed as lacking the capacity to contribute to discharge planning, decisions were made on their behalf. Typically, this involved discussions with the family, at a Best Interest Meeting, a formally constituted event in the UK NHS. In many cases, however, an individual's cognitive functioning was unclear, and assessments of capacity became entangled with disagreements about the feasibility of discharge plans.

OG Consultant: If she will accept a package of care then we can safely discharge her. If she will not then she will have to go into a home.

Junior Doctor: Are you sure she has capacity?

OG Consultant: If she agrees to a package of care then she does!

For some, discharge marked the gradual resumption of ordinary life.

For others, it entailed biographical disruption (Bury, 1982) and new arrangements to support everyday living. Decisions had emotional, practical, and material consequences for patients and families. Agreeing a discharge destination was an evolving process, undertaken in conditions of uncertainty and existential disequilibrium, with different scenarios being explored and negotiated by the team, patient, and family. FNs played a crucial role in undertaking the translational work necessary to reach a consensus on a discharge destination. They actively monitored trajectory progress, through record reviews and interactions with team members, using an informal paper-based artefact to document trajectory awareness. While multidisciplinary meetings are recommended for collaborative planning in complex patient populations, the OGW found them insufficiently agile. Instead, FNs took the lead in organising a Board Round—a concise, 30-min multidisciplinary meeting held three times a week, focused on discharge planning. The FN presented each case through a care trajectory narrative, enabling team members to contribute to the enactment of the patient as a collective object of practice.

*OG Consultant: You need to be able to put together a story [...] a simple synthesis of what's going on ... what makes this situation tick and where the impediments are [] That's where FN is staggeringly effective. [...] nobody will tell you something's wrong if you haven't expressed what's going on. So, getting a very simple, working model of this individual expressed and spoken in front of people who know they can say 'no that's wrong' is, I think, the most efficient way of running that process.*

(Interview)

Trajectory narratives were epistemic objects in which the patient was enacted as a two-part object of collective practice: an interdisciplinary object, focused on recovery, and a trajectory object, oriented toward prospective discharge destinations. Combining an understanding of the person's recovery trajectory with the equivocality and complexity of the individual's lifeworld, the object evolved before converging on a discharge destination. This involved match-making (Allen, 2015), an iterative process in which the team's assessment of the patient's recovery and future care needs were aligned with their understanding of community provision.

Community care was distributed. Primary care doctors were responsible for overseeing patients' ongoing medical needs, but hip fracture patients typically also required continuing care. A significant proportion of patients received input from the Community Resource Service (CRS), an integrated health and social care team that offered up to six weeks support. The team encompassed social carers, physiotherapists, and occupational therapists, oriented toward a logic of enablement. Acceptance into the service was contingent on the patient's potential for progression toward independence, with the level of support progressively reduced. Patients requiring long-term assistance were referred to social care services provided by the local authority. Social carers supported tasks such as cleaning, meal preparation, and washing and dressing. Social carers' scope of practice was limited, and the community nursing service could be engaged for specific interventions, such as dressing changes and catheter care. There were often gaps in provision, however, which typically had to be addressed by family or friends.

Home discharge involved managing multiple transition interfaces and organising infrastructural arrangements. Responsibility for discharge planning was distributed. The ward occupational therapist arranged home adaptations and ordered equipment, junior doctors prescribed medications, families attended to the home environment, and different healthcare professions provided patients and families with information for ongoing care. Junior doctors managed the interface with primary care, while ward nurses managed interfaces with community nursing and social care. The interface with CRS was led by a screening nurse in collaboration with OGW staff.

Transitional infrastructures with community health services

constituted transition objects oriented to delimited and specific matters of shared professional concern. Junior doctors communicated with the patient's primary care doctor using a structured A-5 proforma primarily focused on medication-management. Ward nurses submitted requests for specific community nursing interventions, through a central hub. Transitional infrastructures mediating the CRS and social care interfaces were more complex. They comprised an initial referral, designed to ensure that recovery trajectories were sufficiently stable for care to be planned and that patient needs aligned with their respective institutional functions, and then additional detailed processes of object-formation for the purposes of transition.

Referrals to CRS involved completion of a 2-page A5 proforma by OGW staff. The first section aimed to establish alignment with the logic of enablement, with instructions to refer to the social care service if criteria were not met. The second section reflected the clinical logics of the CRS team, requesting detailed information on functional skills and rehabilitation factors for therapists, and domestic arrangements, medication, personal care, meal preparation, shopping, and cleaning for social carers. CRS reviewed completed referral forms daily.

Referrals to social care were made by telephone. An administrator used a double-sided A4 structured referral tool to mediate the conversation. This focused on matters related to the professional objects of social care work, documenting information on mobility, transfers, personal care, continence, cognitive functioning, eating, drinking, diet, and allergies. A social work assistant conducted an in-person review of the patient to verify the information provided by the ward. Referral processes were initiated early by OGW to prevent discharge delays. Owing to the uncertainty of recovery, referrals were often rejected on the grounds of trajectory instability, requiring repetition before discharge planning could commence.

The CRS transition infrastructure comprised a CRS screening nurse, who worked with a structured proforma, and contacted the ward shortly before the discharge date to enact a transition object. The proforma was inscribed with the professional logics of CRS service providers and a mobilising logic focused on infrastructural arrangements. Comprising 26 questions, it covered detailed matters aligned with social carers' objects of practice (personal care, meal preparation, oral care, toileting, medication management, continence), information on mobility and therapy requirements aligned with therapists' work (transfers from bed to chair, sit to stand, walking with or without aids, does the patient sleep upstairs and can they to complete this task), and practical details about the home care infrastructure (can the patient unlock the door or is there a key safe; have any aids or equipment required for discharge been arranged, does the patient have a community alarm; is there food in the home). The proforma was crucial for accurate object-formation in CRS transitions. However, knowledge was distributed across the OGW team. Screening calls were unscheduled, and the ward representative often lacked the granular information required, leading to potential inaccuracies in object-formation or delays to address gaps and uncertainties.

CRS Therapist: If you screen you get three stories: one from the patient, one from the nurses and one from the therapists.

The CRS transition proforma was only loosely coordinative of OGW practice. It was not available to the OGW, where it could have functioned as an accumulating and conscription device by enabling different sections to be populated by the relevant team member. When I shared this observation, the CRS nurses underlined the importance of the conversation with the ward representative. Whilst shared sensemaking is a powerful mechanism for constituting transition objects, the CRS transition arrangements were most likely a legacy effect. In the past CRS had visited the wards and used the proforma to screen patients in-person, but this was resource-intensive, and the practice was stopped.

The 'Unified Assessment' document was a central actor in the transition infrastructure with social services and used by social workers in planning care. This 32-page loosely structured A4 proforma, organised into 12 domains, was designed to translate the patient's care needs into

the objects of practice for social carers. Ward nurses, who were responsible for completing the document, found the process challenging. This was partly because of the time it involved, but also because of the significant translational burdens it imposed. These translational difficulties stemmed from the differing jurisdictions of hospital nurses and social carers, and the uncertain impacts of the home environment in mediating the patient's care needs. The 12 domains were unstructured and poorly aligned with the scripts deployed by ward nurses in enacting their professional objects of practice. FNs sometimes intervened, understanding the document's intent, but lacked the patient-specific knowledge necessary for satisfactory completion.

Social Worker: It might say 'mobile with assistance of one', but we need more detail than that. What kind of assistance do they need, can they get out of a chair and how is this going to be affected by the new context they are moving to? [...] Staff nurses really know the patients, but they don't have time to complete the UAs so the (frailty) nurses try to do them but they do not know the patient's that well.

Unlike the CRS transition infrastructure, there was no shared sensemaking, and documentation was frequently passed back and forth, leading to delays in discharge planning. The complexity of the process served as a strong incentive to avoid new social care referrals and the uncertainty surrounding recovery trajectories could be marshalled to favour discharge with CRS. While this might be framed as positive risk-taking, it heightened demands on CRS. Assistance could not be gradually reduced if patients failed to progress to independence, and CRS had to manage transition to long-term social care.

Home discharges were complex ensembles, involving numerous interdependencies requiring alignment in an unfamiliar environment which mediated care needs. While transition infrastructures were designed to generate detailed information on concerns about the patient and their associated care infrastructure, there was no mechanism to ensure the coherence of arrangements.

OT said that the solutions they could offer were never perfect; 'it's – what do we call it? – positive risk taking. Which means three "Hail Marys" and keeping your fingers crossed'.

Translation of the patient into the various technical objects of practice of community services, fragmented the integrated understanding of the patient as a collective object of OGW practice, and responsibility for organising infrastructural arrangements was distributed across the team. Discharge planning involved ensuring all arrangements had been made, but as lists of tasks, rather than an integrated plan. On the day of discharge, despite the complexity of transition there was no safety checklist, and no in-person handover at key interfaces through which to reach a shared understanding of the patient as a transition object; the documentation had to speak for itself.

Discharge failures requiring hospital readmission circulated as apocryphal tales amongst community services but were relatively uncommon. Nevertheless, most discharges required stabilisation interventions from community services. Community nursing was 'never just about the task' but entailed invisible work to (re)organise arrangements to ensure safe care. CRS allocated a full afternoon to undertake a discharge visit. Focused in part on CRS object-formation, a key purpose was to assess discharge arrangements and make any necessary adjustments to ensure these were safe.

CRS worker is unimpressed by the arrangements [...] She has been sent home with a commode, but this will not fit into the bedroom and allow space for a Zimmer frame. [...] The perching stool in the bathroom blocked the door as there was not enough space.

Beyond the issue of integration, there was an inherent tension between the fluidity of the patient as an evolving collective object of practice in OGW, and the stability required by community services, which impacted both CRS and hospital capacity. Patients ready for discharge had to remain in hospital until the arrangements for on-going

care were in place. Owing to the instability of recovery processes, discharges could also be cancelled with limited notice, but there was insufficient flexibility in the system to reallocate the slot.

## 2.6. Summary

A distinctive feature of hospital discharge is that infrastructure configuration is integral to transition. Whilst services were oriented to a similar constellation of concerns, there was a significant gap between the emergent objects of collective practice of OGW and the trajectory stabilisation required by community services. Community care was distributed, requiring enactment of multiple transition objects at different interfaces. Interfaces with the more distant social worlds of continuing care providers were complex. Inscribed with logics of demand management, they were deployed to negotiate service boundaries as well as mediate transition. Placing heavy translational burdens on users, they were weakly coordinative of practice. Transition infrastructures decentred the patient and despite the interdependencies of arrangements, there was no mechanism of articulation. The misalignment of the transition infrastructure with the requirements of the transition interface mitigated transitions, impacting hospital and community capacity.

## 3. Discussion

This paper deployed TMT and assemblage thinking to analyse object-formation and trajectory mobilisation across transition interfaces in the hip fracture trajectory. Comparative analysis of three distinctive assemblages identified the benefits and limitations of different transition arrangements. Transition interfaces were conditioned by services' social worlds familiarity, their organising logics, and the relationship between their respective collective objects of practice. In UA, where there was reciprocal understanding of work processes, enrolment in a shared logic, and equivalent collective objects of practice, narrative transition objects enacted by EMSRs and nurses facilitated trajectory mobilisation in a fast-paced environment. Services in AA worked with divergent objects of collective practice. Here, documents coordinated activity around a shared safety and efficiency logic, constituting the patient into standardised technical objects of OD practice and bracketing off the wider concerns of OGW. Documents fulfilled this function through the formal and informal efforts of human actors, and while effective in constituting technical transition objects, human actors performed the narrative reconstructions that facilitated transition back to the ward. UA and AA involved transitions between preconfigured care infrastructures; in DA infrastructure configuration was integral to transition. Here, documents were also central actors, but they were required to act alone in performing significant translational work in mediating the distal worlds of hospital and community services, divergent objects of collective practice, and misaligned logics. Designed to enact the patient around the detailed concerns necessary for planning care in singular home environments, they were burdensome to complete, only loosely coordinative of practice, and decentred the patient into multiple objects of practice of community care. With no formal integrating mechanisms, ad hoc post-discharge interventions were necessary to ensure safe care, and the transition infrastructure was insufficiently flexible to accommodate trajectory contingencies, impacting service capacity. As well as shedding light on discharge transition challenges not considered in previous research, these findings invite consideration of the object qualities necessary for trajectory mobilisation across different interfaces and how infrastructures can be designed for this purpose.

Documents and artefacts are widespread interventions for transition management. Their popularity has not been matched by systematic and critical analysis, however, leading to concern about the impacts of a 'polyformacy' epidemic on workloads and organisational processes (Allen, 2017). Berg (1999) makes the case for technologies to be 'fully-fledged actors' in healthcare systems, emphasising their use for

improvement rather than rationalisation. He argues that tool design should aim to transform practice toward a specified goal through the production and implementation of an artefact in which the goal is inscribed. Documents were effective technologies in coordinating action and mediating transitions in the AA, where transition objects were enacted around standardised and specifiable concerns. Discharge required the generation of singular objects of practice to enable home care infrastructures to be configured around individual needs. While DA documents functioned as demand management devices, they were less effective in organising transition. Given the complexity of this translational task, the gap between the social worlds of services, and the instability of recovery processes, documents did not (and do not) have the necessary affordances to fulfil these functions. Digital technologies are advancing at pace and ensuring the interoperability of information systems to support communications at the hospital-community interface is a priority. But if new technologies are predicated on faulty assumptions about the goal to be addressed, then benefits will be limited. In this context, visualisation technologies may have value. They have been deployed for architectural design (Ewenstein and Whyte, 2009), functioning to stabilise some aspects of the object while evolving others, and acting as conscription devices to enlist and organise collaborative work (Henderson, 1991). Embedded in digital systems, they could facilitate virtual collaborative sensemaking of evolving trajectories, supporting care planning, and affording greater organisational agility to respond to contingencies to improve efficiency.

Beyond technologies, the management of transition depends on human actors. Transitional infrastructures in the UA relied exclusively on EMRs and nurses, and nurses were central to coordinating the collective objects of practice mediating transition in the AA and DA. Effecting safe transfers of care is a acknowledged EMS function, but trajectory management is not a recognised constituent of nursing jurisdiction (Allen, 2015). Specialist roles have been implemented to improve coordination (McMurray and Cooper, 2016) and they may be beneficial in the community. But while dedicated roles have value, as this study has shown, removed from everyday care practices, they create divisions in nursing work. In this study, service pressures impacted UA transitions and in the acute sector low nurse staffing is associated with longer length of stay and readmissions (McHugh, et al., 2021). These findings underline the importance of incorporating care trajectory management into nursing workforce planning methodologies. In this context, formal assessment of how transition infrastructures distribute work is essential.

Previous research has focused on trajectory episodes and tends to be tied to locales. But this is not how care is experienced by patients and families. As this study has shown, moreover, understanding trajectory processes requires systematic analysis of the relationships *between* services. Analysis of the whole hip fracture trajectory facilitated identification of three distinct assemblages which transcended departments and organisations and generated new insights on transitions through comparative analysis. Studies of other trajectories are needed, and this paper offers conceptual resources to facilitate accumulative understanding. In this context, an important aim is to progress typologies that align the translational tasks involved in transitions with optimal infrastructure design. The preferred method for studying real-world practices, ethnographic methods are also resource-intensive. Understanding trajectories through the lens of TMT and assemblage thinking, enables an ethnographic sensitivity to be embedded into other research methods and has value for quality improvement. Analysis of the factors conditioning interfaces, and the formal and informal socio-material relational mechanisms that support or inhibit collective action, would enable identification of appropriate improvement initiatives, inform technology development and workforce planning.

In foregrounding practices in this study, the intention was to focus on the hitherto neglected socio-material relationships through which trajectories emerge. Objectification has been criticised in studies of medicine and healthcare because it signifies dehumanisation. This paper

deploys a more neutral interpretation, following Berger and Luckman (1966), in which objectification is understood as a mechanism for getting things done. While patients have been conceptualised as boundary objects in healthcare coordination (Allen, 2015; Bishop and Waring, 2019; Middleton and Brown, 2005), prior research has not systematically analysed their object qualities. Tracing object-formation and trajectory mobilisation in transitions has highlighted how services enact patients and how these enactments impact coordination. Whether objectification becomes alienating or not depends on its meaning for those involved (Timmermans and Almeling, 2009). Future studies would be augmented by the inclusion of staff, patient and family experiences, and there is considerable potential in thinking about assemblages with and through emotions (Müller, 2015) drawing in additional theories.

#### 4. Conclusion

This paper has combined TMT with assemblage thinking in a conceptual framework to support systematic analyses of patient trajectories. Attending to the concerns that are centred in trajectory processes and examining how centring is organised, enabled consideration of transition in ways not previously possible and in so doing has suggested mechanisms for improvement. We currently have a good understanding of the impacts of patient trajectories, but there is a paucity of research on why trajectories take the course that they do. This paper offers empirical foundations and a conceptual framework to inform new trajectory studies in medical sociology and support service improvement.

#### Funding

This work was supported by The Health Foundation Improvement Sciences Fellowship.

#### CRediT authorship contribution statement

**Davina Allen:** Writing – review & editing, Writing – original draft, Validation, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization.

#### Data availability

The authors do not have permission to share data.

#### Acknowledgements

Thanks to the health and social care staff in the study sites who allowed me to shadow their everyday activities, took time to participate in interviews, or discuss their work. I am grateful to the many patients and families I encountered along the way, who were not formally part of the study, but permitted me to observe aspects of their care. The paper has benefited from the critical and supportive feedback of Social Science & Medicine peer reviewers.

#### Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.socscimed.2024.116769>.

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