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# Physiotherapists' perspectives of barriers and facilitators to effective community provision after hip fracture: A qualitative study in England

**Short title: Physiotherapists' perceptions of effective community provision after hip fracture**

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## **Abstract**

### **Purpose**

To investigate physiotherapists' perspectives of effective community provision following hip fracture.

### **Methods**

Qualitative semi-structured interviews were conducted with 17 community physiotherapists across England. Thematic analysis drawing on the Theoretical Domains Framework identified barriers and facilitators to implementation of effective provision. Interviews were complemented by process mapping community provision in one London borough, to identify points of care where suggested interventions are in place and/or could be implemented.

## Results

Four themes were identified: ineffective coordination of care systems, ineffective patient stratification, insufficient staff recruitment and retention approaches, and inhibitory fear avoidance behaviours. To enhance care coordination, participants suggested improving access to social services and occupational therapists, maximising multidisciplinary communication through online notation, extended physiotherapy roles, orthopaedic specific roles and seven-day working. Participants advised the importance of stratifying patients on receipt of referrals, at assessment, and into appropriately matched interventions. To mitigate insufficient staff recruitment and retention, participants proposed return-to-practice streams, apprenticeship schemes, universities engagement, combined acute-community rotations, and improving job description advertisements. To reduce effects of fear avoidance behaviour on rehabilitation, participants proposed the use of patient specific goals, patient and carer education, staff education in psychological strategies or community psychologist access. Process mapping of one London borough, identified points of care where suggested interventions to overcome barriers were in place and/or could be implemented.

## Conclusion

Physiotherapists propose that effective provision of community physiotherapy following hip fracture could be improved by refining care coordination, utilising stratification techniques, employing enhanced recruitment and retainment strategies, and by addressing fear avoidance behaviours.

**Keywords:** Femoral neck fractures, allied health professional, stratified care, process mapping, qualitative research, older people.

## Keypoints:

- Efficiency may be improved with seven-day provision, and by improving communication and access to the multidisciplinary team.
- Recruitment and retention strategies should be tested in community services, including linked acute-community rotations.
- Patient stratification may improve community care coordination following hip fracture.
- Changing fear avoidance should rely on educational and psychological strategies.
- Physiotherapists and/or occupational therapists should receive training to address fear avoidance cognitions in patients/carers.

## **Introduction**

Approximately 60,000 adults aged 60 years and over fracture their hip each year in England [1]. Physiotherapy supports the recovery of mobility and independence, promoting health-related quality of life post-fracture [2, 3]. The availability of physiotherapy following discharge from acute hospital in England is determined locally by commissioners [4]. This leads to variation in provision [5-7] often attributed to differences in access to structural resources (e.g. bed-based rehabilitation), staffing resources, and different local caseload priorities [8-10]. Such variation affects quality of care, functional recovery, and one-year mortality rates for patients following hip fracture [9].

To address unwarranted variation, there is first a need to determine effective provision. Patients reported physiotherapy as a key component for recovery after hip fracture but there was a mismatch between their expectations for physiotherapy input and actual physiotherapy received in the acute hospital and community settings [2, 11]. This is in keeping with the perspectives of physiotherapists working in acute hospitals who indicated greater staffing was required for effective provision [12]. To date, there are no published perspectives from community physiotherapists on effective provision following hip fracture.

These previous studies observed barriers to implementation of effective provision in keeping with the Theoretical Domains Framework (TDF), a framework of 14 domains providing ‘a theoretical lens through which to view the cognitive, affective, social and environmental influences on behaviour’ (individual and system wide) [13; p2]. By virtue of its application in improving care across multiple influences, the TDF was considered an appropriate framework to explore factors influencing effective provision of physiotherapy following discharge from acute hospital after hip fracture. The framework was considered in conjunction with process mapping to determine where suggested interventions are in place and/or could be implemented to improve care pathways [13, 14].

The aim of this qualitative study was to explore physiotherapists’ perspectives of current and effective community provision after hip fracture. Our specific objectives were to:

1. Identify perceived barriers and facilitators to implement effective community physiotherapy after hip fracture informed by the TDF;
2. Identify interventions to overcome barriers and enable facilitators of effective provision of community physiotherapy; and
3. Map current provision of community physiotherapy within one local system to identify points of care where suggested interventions are in place and/or could be implemented.

## **Methods**

### ***Study design and ethical approval***

We used a qualitative study design based on semi-structured interviews. Additionally, we used process mapping techniques to systematically describe community physiotherapy provision within one London borough [14, 15]. These data allowed us to determine how potential interventions outlined in interview data could be implemented to overcome barriers, or enable facilitators, across the patient pathway. Institutional ethical approval was granted

for interviews (REMAS: LRS/DP-21/22-26812) and process mapping (Quality Improvement Reference: 13102). The research was reported in line with the consolidated criteria for reporting qualitative research (COREQ) [16].

### ***Participant selection***

For interviews, we used purposive sampling to recruit physiotherapists working with patients following hip fracture in the community through professional networks and social media [17]. We aimed to recruit 20 physiotherapists for interviews; two from each of the nine geographical regions of England, and additional physiotherapists if required to ensure data saturation. For the process mapping, we used snowball sampling to recruit up to three senior clinicians from each of four community teams (Table-1) from one London borough (population 307,700 [18]).

Team Name	Team Description
Musculoskeletal Outpatients	Patients independently attend appointments at outpatient NHS facilities in the community and receive rehabilitation from acute musculoskeletal injury, limb or spinal surgery, including hip fracture, and/or for physical management of long-term musculoskeletal diseases or conditions.
Bed-Based Intermediate Care	Patients admitted to nursing care beds on a ward for inpatient rehabilitation or reablement usually following a medical or surgical inpatient stay in the acute hospital (including acute hip fracture management) for a finite time (typically max 6 weeks) where rehabilitation is predicted to mean the patient can return to live at their preferred residence.
Home-Based Intermediate Care	Patients reviewed and supported at home upon discharge from acute hospital requiring multidisciplinary reablement and/or require a new or increased supportive social care package, where intervention is predicted to mean the patient can return to pre-morbid level of care need.
Community Physiotherapy (Home-Based)	Patients with ongoing rehabilitation or reablement needs receive physiotherapy at their preferred residence.
Home-based Rapid Response Team	Home-based service, patients who need to be seen rapidly to prevent deterioration or being readmitted (please note this service was not mapped, and is included here to illustrate this aspect of the service).

Table 1: Description of community physiotherapy teams within central London borough

### ***Data collection and analysis***

The lead author (JA) conducted one-to-one semi-structured interviews via Microsoft Teams. An interview topic guide of open-ended questions informed by the TDF was developed [13], (Table-2). Participants were asked about their perspectives of community physiotherapy after hip fracture, their perceived barriers and facilitators to implementing effective community physiotherapy, and to suggest strategies to improve provision. Prompts were used to stimulate additional responses. Interviews were audio-recorded and transcribed verbatim by an external

professional service. Each participant's transcript was returned to them for comment and/or correction prior to analysis as part of an optional member checking process [19].

	Topic Guide	Applicable Theoretical Domain Framework Construct [13]
1	What is your role in rehabilitation after a patient fractures their hip?	Knowledge, skills, social/professional role and identity, emotion
2	What does a typical patient's rehabilitation look like after hip fracture, once they leave the hospital?	Knowledge, beliefs about consequences, beliefs about capabilities
3	What do you think is good about community rehabilitation currently being provided to patients after hip fracture?	Beliefs about capabilities
4	What could be improved about the current rehabilitation following hip fracture?	Knowledge, skills, beliefs about consequences
5	How do you engage the patient and their carers (by this we mean people providing informal support, such as friends, family and neighbours) in their rehabilitation?	Social influences, motivation and goals, behaviour regulation, emotion, memory, attention and decision processes, beliefs about capabilities
6	What would a good community rehabilitation service for patients after hip fracture look like?	Knowledge
7	What do you think is preventing you from delivering the rehabilitation services that you want to deliver to patients following hip fracture, in community settings?	Environmental context and resources, emotion
8	How can we improve community rehabilitation services to address these challenges?	Beliefs about consequences
9	What have you already tried, in your local team, to improve current rehabilitation provided for patients after hip fracture?	Skills, knowledge
10	What ideas do you have to improve community rehabilitation services after hip fracture in the future?	Beliefs about consequences, knowledge, skills

11	Is there anything else that you would like to add, that you think would be relevant to this study?	Knowledge
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**Table 2: Semi structured physiotherapy interviews: Topic guide.** Applicable Theoretical Domain Framework construct for each question is included.

Data collection and analysis was completed as part of an iterative process until data saturation was achieved and no new themes were emerging from the raw qualitative data [12]. The lead author read each transcript in full using an inductive thematic analysis approach and identified initial themes from participants' accounts, using computer software (NVivo, Version-12, [20]). To ensure credibility, a second author (SG) analysed four interviews and concurred with the initial analyses. After discussion with members of the research team (JA, SG, KS, ES), initial themes were conceptualised into themes and related sub-themes using the 'one sheet of paper' method to visualise similarities and differences in perspectives among community physiotherapists [21]. These were subsequently mapped against the TDF to frame them within the context of implementation barriers and facilitators [13]. Final themes and related sub-themes were drafted, with supporting quotations, and discussed with the research team (KS, ES, SG, JA, GJ). A second optional phase of member checking was completed, whereby participants were provided with analyses to review [19].

For the process mapping, the lead author conducted interviews via Microsoft Teams with three participants (maximum) from each of the four community teams (Table-1). Participants were asked to describe the care pathway for their service inclusive of admission criteria, actions, events, milestones, transitions and end-points [15]. The lead author graphically mapped descriptions online using MIRO contemporaneously [22]. Participants provided verbal feedback to refine the map during the interviews. Maps were subsequently converted into workflow diagrams and returned to participants for comment [19]. Points of care were identified, where interventions to overcome barriers or enable facilitators suggested from interview data, were in place and/or could be implemented.

### ***Research team and reflexivity***

The lead author (JA) conducted all interviews and had no prior relationship with participants. Participants were aware of JA's professional role as a musculoskeletal physiotherapist at the time of recruitment and interview. JA completed university-level qualitative research training and was supported by the research team who have an established interest in stratified care, believing it is a positive approach for patients. We acknowledge this position may have influenced the analysis by deducing stratification's importance from the data.

## **Results**

### ***Participant characteristics***

For qualitative interviews, 17 community physiotherapists (sixteen female, one male, age range 28-58years, professional experience 5–30years) were interviewed from eight geographical regions across England. All were working at senior professional levels (five specialists, eleven highly-specialist, one clinical-specialist). Four worked in bed-based intermediate care, three combined acute and early supported discharge, two early supported discharge, and eight home-based. We achieved data saturation at 15 interviews with no new themes emerging from the final two interviews. Three eligible participants chose to withdraw

their participation prior to interview. For process mapping, four physiotherapists, three occupational therapists, and three clinical leads participated (ten female, age 28-69years, professional experience 5–32years) (Table-3).

	Job Title (Interview or Mapping#)		Age*	Sex	Job Role	Location†	Experience*
1	Senior Specialist Physiotherapist	(I)	50	F	Home-Based & Outpatients‡	London	20
2	Senior Specialist Physiotherapist	(I)	53	F	Bed-Based	Southwest	30
3	Senior Specialist Physiotherapist	(I)	49	F	Bed-Based	West Midlands	26
4	Clinical- Specialist (Ortho) Physiotherapist	(I)	48	F	Acute Hospital & Home-Based§	Northwest	21
5	Senior Specialist (Ortho) Physiotherapist	(I)	49	F	Acute Hospital & Home-Based§	Southwest	21
6	Senior Physiotherapist	(I)	54	M	Home-Based	Yorkshire	17
7	Senior Specialist Physiotherapist	(I)	36	F	Home-Based	West Midlands	15
8	Senior Specialist Physiotherapist	(I)	35	F	Home-Based	Northwest	5
9	Senior Physiotherapist	(I)	50	F	Outpatients & Home-Based	East Midlands	17
10	Senior Specialist Physiotherapist	(I)	45	F	Home-Based¶	Yorkshire	20
11	Senior Specialist Physiotherapist	(I)	58	F	Home-Based	London	30
12	Senior Specialist (Ortho) Physiotherapist	(I)	44	F	Acute Hospital & Home-Based§	East	17



13	Senior Specialist Physiotherapist	(I)	48	F	Bed-Based and Home-Based††	Southeast	26
14	Senior Physiotherapist	(I)	28	F	Home-Based	East	6
15	Senior Physiotherapist	(I)	53	F	Home-Based	Southwest	30
16	Senior Physiotherapist	(I)	35	F	Bed-Based	Southeast	13
17	Specialist Physiotherapist	(I)	46	F	Bed-Based	East Midlands	24
1	Clin Lead; Rehabilitation & Falls	(M)	54	F	Manager: Home-Based, Outpatients	London	32
2	Deputy Clin Lead; Rehabilitation & Falls	(M)	44	F	Manager: Home-Based & Outpatients	London	23
3	Deputy Clin Lead; Rehabilitation & Falls	(M)	39	F	Bed-Based	London	18
4	Highly Specialist Physiotherapist	(M)	31	F	Bed-Based & Home-Based§	London	10
5	Highly Specialist Occupational Therapist	(M)	32	F	Bed-Based	London	7
6	Highly Specialist Occupational Therapist	(M)	30	F	Bed-Based & Home-Based§	London	5
7	Senior Occupational Therapist	(M)	69	F	Bed-Based & Home-Based§	London	17
8	Senior Specialist Physiotherapist	(M)	32	F	Outpatients (Musculoskeletal)	London	8
9	Senior Physiotherapist	(M)	28	F	Outpatients (Musculoskeletal)	London	6

10	Senior Physiotherapist	(M)	50	F	Home-Based	London	20
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**Table 3: Participant characteristics: Interviews and Process Mapping**

Clin – Clinical; F – female; M – male; Ortho – Orthopaedic; Rehab – Rehabilitation  
 #(I) participated in Interviews, (M) participated in Mapping Process; \* represents years at date of interview;

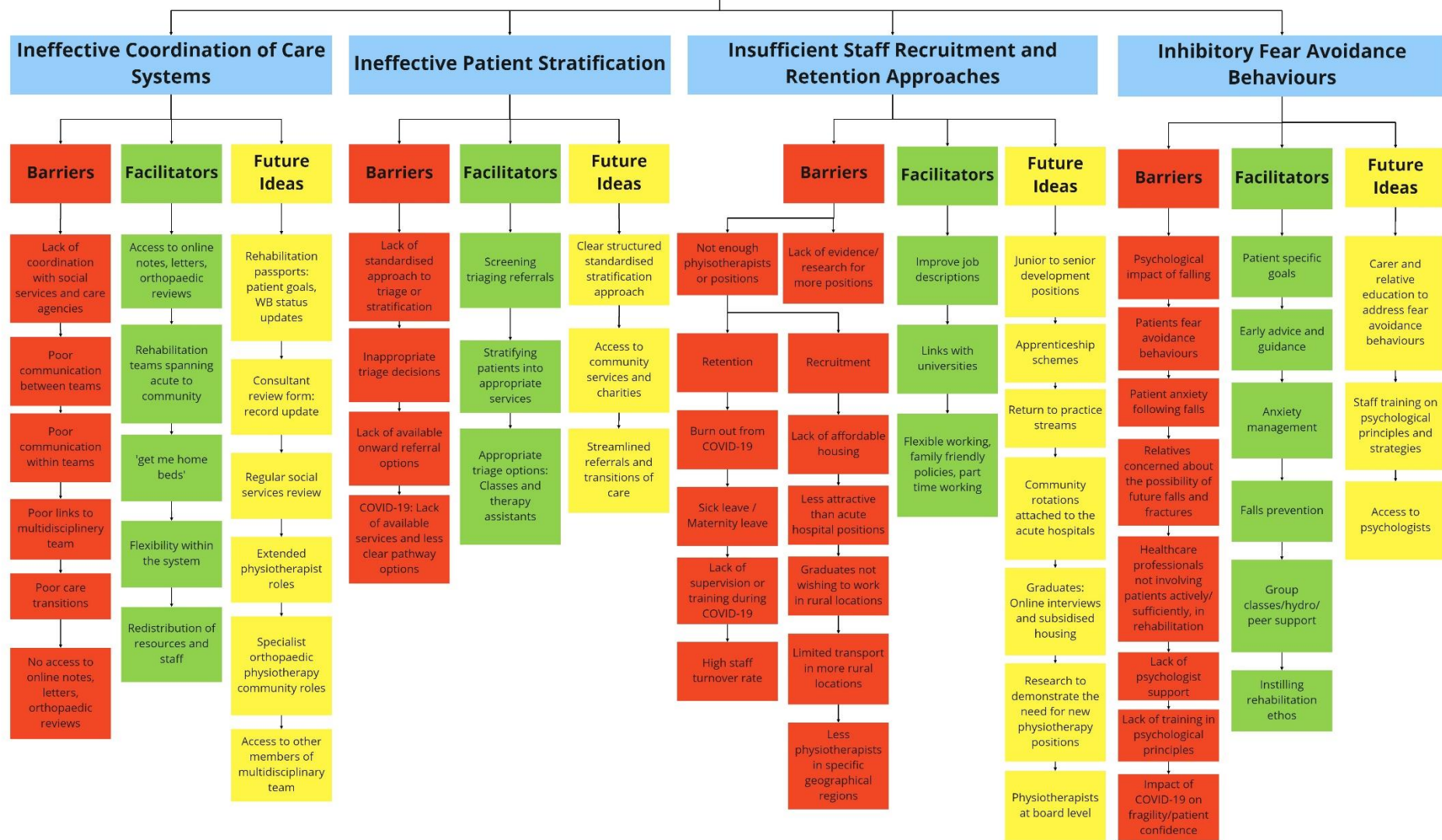
† represents geographical regions of England– South West, West Midlands, North West, Yorkshire, East Midlands, East of England, South East; ‡ represents outpatients job role including falls prevention classes; § represents transition from acute to home-based reablement; || represents home-based job role including nursing-care facilities; ¶ represents home-based reablement: †† represents bed- and home-based reablement

Interviews ranged between 28-54minutes. Four participants completed member checking; three reported no corrections and one provided additional service detail for inclusion in the analysis. Following data analysis, four other participants completed further member checking with no corrections. Following process mapping, participants’ feedback was included in the final workflow diagrams.

**Themes**

We identified 65 initial themes. These were grouped into four themes and related sub-themes prior to mapping against the TDF to explicitly draw out implementation barriers and facilitators (Figure-1). These four themes were: i) Ineffective coordination of care systems, ii) Ineffective physiotherapy stratification, iii) Insufficient staff recruitment and retention approaches, and iv) Inhibited physiotherapy progress due to post-fall fear avoidance behaviours. How these themes relate to the domains of the TDF are indicated in parentheses and italics.

# Physiotherapists' Perspectives of Barriers and Facilitators to Effective Community Provision after Hip Fracture



**Figure 1: Coding Tree (Revised Version)**

Interview data revealed 65 initial themes which were organised into four main themes summarising physiotherapists' perspectives on the

provision of community physiotherapy after hip fracture: i) Ineffective coordination of care systems, ii) Ineffective physiotherapy stratification, iii) Insufficient staff recruitment and retention approaches, and iv) Inhibited physiotherapy progress due to post-fall fear avoidance behaviours. Red indicates barriers, green indicates facilitators and yellow indicates future ideas for potential interventions.

### **Theme 1: Ineffective coordination of care systems**

Most physiotherapists described the lack of coordinated services as a perceived barrier to effective community physiotherapy following hip fracture (n=9). This was conceptualised as poor communication between (n=7), and within teams (n=3), poor links to other members of the multidisciplinary team (n=7), and missed referrals (n=2), all ultimately leading to challenges with delivering seamless care transitions (n=7). Absence of coordinated services leaves patients having little clarity on when and by whom they would be seen, as well as uncertainty about who might answer their questions whilst waiting (n=2) (*environmental context and resources*).

*'The lack of joined-up nature of things...for the patients even more so, it must be hard to navigate how they can get the help they need' (Participant 7: 15 years of physiotherapy experience, home-based rehabilitation).*

Physiotherapists commonly cited poor communication between acute hospital and community colleagues (n=7). They referenced insufficient knowledge exchange at handovers (n=3) and limited access to specific weight-bearing and/or hip precautions in acute notes (n=4) which compounded delays to community physiotherapy delivery (n=2). This led to excess time sourcing written documentation (n=3), replication of assessments (n=1), and perceived safety concerns (n=1), which had a negative cumulative impact on physiotherapy resources (*knowledge, skills, and professional identity*).

*'We don't get great communication from the acute ward, the only communication we have is... the referral form... we don't know their exercise programs, ... their outcome measures, ... this would all aid a seamless transition' (Participant 10: 20 years of physiotherapy experience, home-based rehabilitation).*

Professional online notation systems across physiotherapy (n=4) and the multidisciplinary team (n=3), including orthopaedic consultant reviews, were proposed as countermeasures to communication barriers. However, three physiotherapists considered this aspiration dependent on addressing incoherent information technology systems across services (*environmental context and resources*). Alternative suggestions included; deploying patient passports detailing clinical history, status, goals, and appointments (n=1); or populating review forms at consultant appointments (n=1) although neither suggestion included practical implementation detail.

*'A form we can send patients when they go for their orthopaedic review... it might have, continue precautions, or progress weight-bearing status... we haven't then got to spend a long time finding out...the improvement is accessing medical information... test results and discharge letters ... quickly' (Participant 13: 26 years of physiotherapy experience, home-based Intermediate care).*

Several physiotherapists perceived a lack of coordination with social services (n=4), care agencies (n=3), and access to the multidisciplinary team (occupational therapists n=4, pharmacists n=1, nurses n=1, podiatry n=1, psychology n=2), as key barriers to effective provision (*environmental context and resources*). Indeed, coordinated provision across the multidisciplinary team was viewed as a facilitating factor among a majority (n=11). Improved collaboration proposals included clinical handovers from nursing, physicians, and therapists, timely identification of medical risks, and increased engagement with social services to

review housing, adaptive equipment, and care packages (*knowledge and skills, social influences, environment context and resources*).

*'Psychologist goes in first, then we go in and we work together...then the OT might then go in,... a bit more of a joined-up service and not... a team of just physios' (Participant 1: 20 years of physiotherapy experience, home-based and outpatients).*

To overcome challenges with access and communication within the multidisciplinary team, several physiotherapists suggested extended physiotherapy roles, including wound management (n=1), equipment provision (n=1) or clinical prescribing (n=1) (*social professional role and identity*). One home-based physiotherapist acknowledged this could inadvertently affect physiotherapy capacity.

Four physiotherapists championed the benefits of staff working across the acute-community care continuum. They contended it would lead to timely patient care transitions, beget improved patient confidence (*motivation and goals*) and capacity to redistribute staff resources when required (*environmental context and resources*), as well as reduce patient handover challenges. Three physiotherapists perceived a seven-day working pattern would augment this approach, enabling patients to be seen and/or discharged over weekends.

*'Staff work seamlessly between ward [acute hospital] and community, so they probably know this patient, they've seen them on the ward.'*  
(Participant 5: 21 years of physiotherapy experience, acute hospital and home-based rehabilitation).

In summary, a lack of coordinated care was perceived by physiotherapists as a barrier to effective provision following hip fracture. Participants suggested improving transitions of care, communication between (and within) the multidisciplinary team, and ensuring efficient and effective access to the most appropriate clinicians would facilitate improvements in community services.

### ***Theme 2: Ineffective patient stratification***

Eleven physiotherapists described a lack of stratification (sub-grouping patients into timely and appropriately matched physiotherapy interventions) as a barrier to effective community physiotherapy following hip fracture. They alluded to stratification facilitating patient flow, by triaging to community services upon referral to prevent delays in treatment, reduce waiting lists, and optimise the likelihood of the right care for the right patient at the right time (*Environmental context and resources*). 'Right care' included consideration of level of urgency, acuity of physiotherapy required, and patients' cognition, motivation, goals, mobility, and level of independence, as well as the skill level of the intervention provider.

*'Screening the referrals ... then prioritising ... to see whether it's fairly straightforward ... in which case it would be one of our [physiotherapy] assistants that go out' (Participant 15: 30 years of physiotherapy experience, home-based rehabilitation).*

These physiotherapists explained they also utilise stratification within their practice (n=11). For example, patients who are deemed less complex (improving and progressing as expected, with few social factors or comorbidities) are seen by physiotherapy assistants for initial assessments (n=16), exercise prescription (n=5), and exercise progression (n=3).

Three physiotherapists thought formal stratification would maximise efficiency, equity, and transparency of care for patients and clinicians. For example, identification of patients who may transition to physical activity self-management earlier with voluntary care/local independent-sector resources support, which could free capacity for more complex patients (n=11) (*environmental context and resources*). This might also yield social benefits for patients with improved motivation through peer support (n=6) (*Motivation and goals, social influences*).

*'It's all driven by clinicians' clinical reasoning, and we're all aware that clinicians think very differently... a patient will get a different service depending on which clinician they see' (Participant 14: 6 years of physiotherapy experience, home-based rehabilitation).*

However, several physiotherapists predicted barriers to implementing a stratified approach including securing appropriate community spaces (n=8), specialist clinicians to lead exercise interventions (n=3), and transport to community venues (n=5), particularly for those in rural locations (*environmental context and resources*). Proposed solutions included community transport (n=1) and contribution to transport costs (n=1) (*social influences*). Two physiotherapists championed online exercise classes, although others predicated technology literacy as a barrier (n=6) (*beliefs about capabilities, skills and environmental context and resources*).

*'We struggle at the moment... when somebody has achieved their goals .... to have that other service to point people in the direction of.'* (Participant 14: 6 years of physiotherapy experience, home-based rehabilitation).

In summary, physiotherapists supported a stratified approach to enable more efficient and appropriate care. Although many physiotherapists already clinically reason stratification of patients, most suggested a more formal approach would provide a fair, more efficient, and appropriate service, tailored to the individual needs of patients following hip fracture.

### ***Theme 3: Insufficient staff recruitment and retention approaches***

All physiotherapists recognised the effect of reduced staffing on community physiotherapy following hip fracture (*environmental context and resources*). Although many attributed this to a shortfall of substantively funded capacity necessary for demand, several considered that attracting physiotherapy applicants (n=8) and staff retention (n=4) with limited resources to develop staff were also salient factors. Additionally, two physiotherapists discussed the impact of depleted staffing levels on patients' motivation, their progression, and delays in discharge as patients were seen less frequently (*motivation and goals, beliefs about consequences*).

*'I think they would achieve their goals quicker if we saw them within the right timeframes... if we saw them immediately... we would improve their self-motivation' (Participant 10: 20 years of physiotherapy experience, home-based rehabilitation)*

Three physiotherapists highlighted challenges recruiting physiotherapists to rural locations (*environmental*). Perceived reasons included a lack of affordable housing, car dependence and being excluded from social opportunities offered by more urban locations (*environment*).

*'There're not enough physios applying .... we interviewed yesterday and out of the five only two turned up... we put the adverts out, we have the jobs*

*available... they're just not showing up... obviously then we're not recruiting into those posts' (Participant 8: 5 years of physiotherapy experience, home-based rehabilitation)*

Three physiotherapists suggested community positions may be less attractive than acute hospital roles to graduate physiotherapists, regardless of geographical location. They suggested that graduates may perceive community physiotherapy to be less specialised (n=1) and less clinically challenging, compared to acute hospital physiotherapy (n=2) (*social influences, professional role, and identity*).

*'The community... has an unfair representation...of what it is, people think they're kind of in for a bit of an easy time' (Participant 6: 17 years of physiotherapy experience, home-based rehabilitation).*

Even though demand was perceived to have increased, physiotherapists described either equivalent (n=1) or reductions (n=2) in their team capacity. Several physiotherapists reported being dissuaded from submitting business cases to address demand-capacity shortfalls due to a lack of clinical evidence to support them (n=2) or adverse budgets (n=4) (*environmental context, and resources*).

Strategies proposed to overcome recruitment and retention barriers included; use of data-informed evidence to support staff business cases (n=2); highlighting the advantages of community physiotherapy work in job descriptions (n=4); endorsing return-to-practice schemes (n=1) and apprenticeships for established physiotherapy assistants (n=1); influencing undergraduates at university careers forums, lectures, and community clinical placements (n=4); and better representation at board level to influence the appointment of staff (n=1) (*social influences, social professional role, and identity*).

*'We're trying to improve the student experience in the community.... I did a university lecture last week to give an idea of what community work is.'*  
(Participant 6: 17 years of physiotherapy experience, home-based rehabilitation).

*'Trying to work at board level ... and get those teams extended...with the evidence that we've got' (Participant 2: 30 years of physiotherapy experience, bed-based intermediate care).*

Furthermore, three physiotherapists suggested interviews for- and appointments to- community positions should offer flexibility to promote uptake. These included online interviews, subsidised accommodation, day-working patterns, part-time roles, and family-friendly policies (*social influences, environmental context, and resources*). Three physiotherapists proposed integrating community and acute hospital positions to increase exposure to community physiotherapy and prepare graduate physiotherapists for senior community positions (*social professional role and identity*).

*'Staff will move between acute and community during their training ... which I think will help ...to see what's happening in both areas'*  
(Participant 2: 30 years of physiotherapy experience, bed-based intermediate care). [see report with respect to at least rural locations]

To summarise, staff recruitment and retention was perceived as a key barrier to providing effective community physiotherapy after hip fracture. The introduction of return-to-practice streams, apprenticeship schemes, influencing universities in recruiting graduates, combining



acute and community rotations, as well as improving job descriptions and advertising, were proposed countermeasures.

#### ***Theme 4: Inhibited progress due to fear avoidance behaviour***

Physiotherapists perceived patient fear avoidance behaviour (n=7) and anxiety (n=6) as key barriers to effective provision after hip fracture (*beliefs about capabilities, nature of behaviours, emotion*). They thought fears might be reinforced by family members or carers who are concerned about the possibility of future falls and fractures (n=3) (*emotion, social influences*), and healthcare professionals not involving patients actively or sufficiently, in their rehabilitation. (n=2) (*emotion, social professional role, and identity, environmental*).

*'They're quite frightened about what's happened to them...the thing we don't have is psychology input... understanding the impact that it has on this person.'* (Participant 5: 21 years of physiotherapy experience, acute hospital and home-based rehabilitation).

Thirteen physiotherapists said setting patient specific goals would offset these behaviours by affecting motivation and encouraging progression (*motivation and goals*). Others thought recovery would benefit from providing timely education (n=3), falls prevention information (n=3), early anxiety management (n=3), and group classes (n=4) or hydrotherapy (n=1) to enhance confidence and socialisation (*social influences, motivation and goals, behaviour regulation*). One physiotherapist reported it was easier to adopt adaptive (e.g., using supportive equipment) rather than restorative approaches, that could maximise patient independence and target fear avoidance behaviours effectively (*environmental context and resources, social professional role, and identity*). Further, physiotherapists proposed involving family and carers may reduce patient fear avoidance behaviours, (n=7) (*social influences*) for example, by educating carers (n=3) who are concerned about the possibility of future falls and fractures (*knowledge, social influences, behaviour regulation*).

*'I'll make a point of saying to the sons or daughters that the patient has got to start doing things for themselves... so they're not absolutely exhausted or incapable when they go home...involving the family with the rehab... the patient isn't a standalone contact.'* (Participant 11: 30 years of physiotherapy experience, home-based rehabilitation).

Some physiotherapists acknowledged the risk of reinforcing fear avoidance behaviours in patients after hip fracture. This was attributed to a lack of training in psychological support (n=4), time pressures (n=10), and/or a lack of clinical or health psychology professionals within the multidisciplinary team (n=4) (*emotion, environmental context and resources, social professional role, and identity*). Physiotherapists perceived a need for a rehabilitation ethos (n=10) and staff education on psychological strategies (n=4), or access to psychologists (n=2), to inspire confidence in patients to maximise independence (*motivation and goals, beliefs about capabilities, skills*).

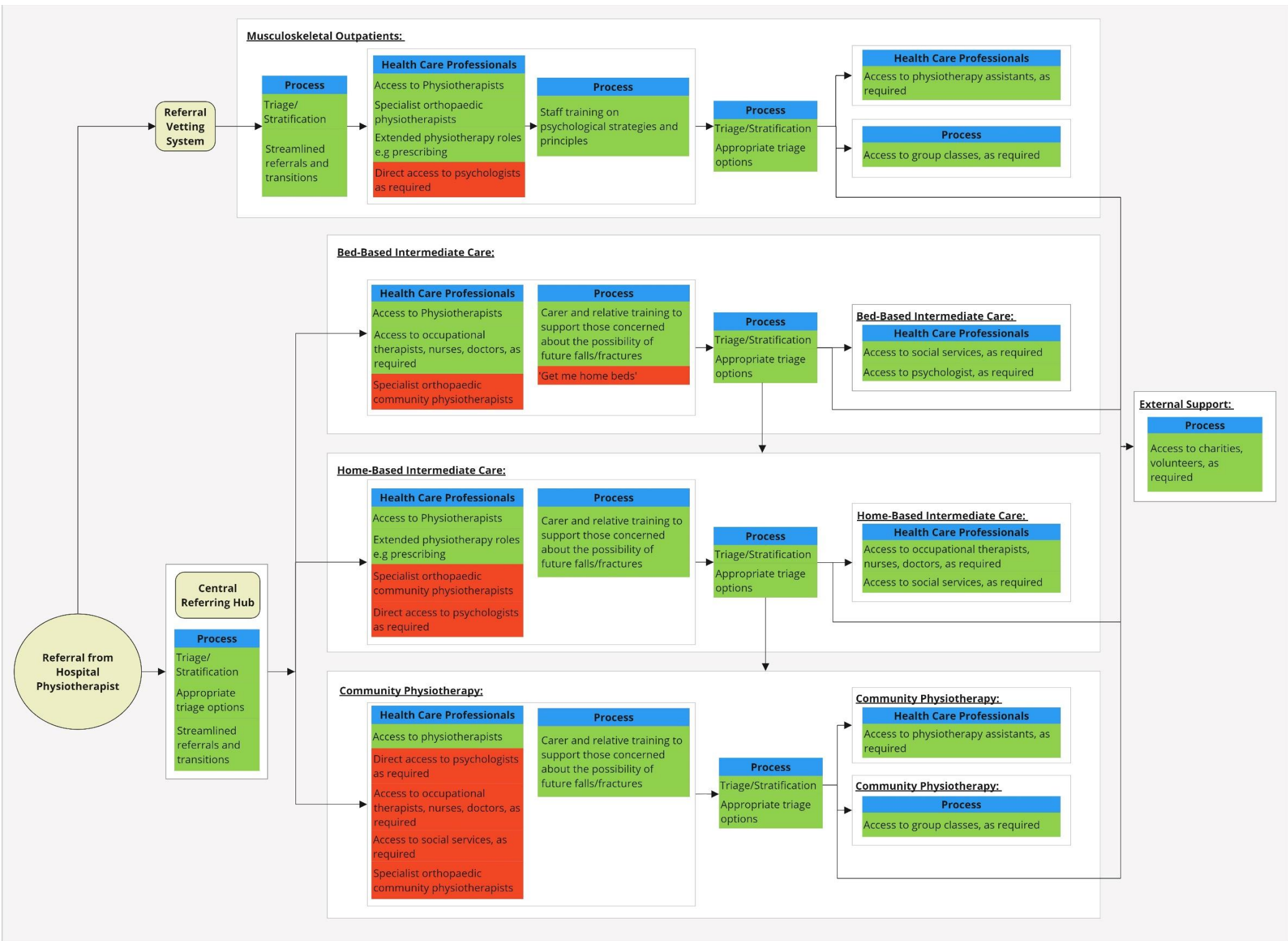
*'Psychologists... would be really useful...because there's often a lot of anxiety related to mobility, goals and going out, especially after hip fracture'* (Participant 1: 20 years of physiotherapy experience, home-based and outpatients).

In summary, physiotherapists identified patients' fear of falling and resultant lack of confidence, as well as carers and clinicians' fear of patients experiencing further falls, as barriers to effective provision following hip fracture. Physiotherapists suggested patients'

behaviours were not targeted appropriately in current practice, and psychological support was needed either through greater physiotherapy training or direct support from psychologists.

### ***Process Mapping***

Current provision of community physiotherapy within one local system was mapped to identify points of care where suggested interventions from interview data were in place, and/or could be implemented to overcome barriers or enable facilitators. (Figure-2, Appendices figures A1-A4). Interventions proposed were either part of current care (e.g. coordinated services (central referral hub, online documentation, multidisciplinary team engagement), stratification based on patient presentation (exercise programmes, intervention provider, engagement with voluntary/independent-sector resources), or proposed service developments (e.g. greater access to social work professionals, occupational therapists, and psychologists).



## **Figure 2: Level One Process Map of London Borough**

Process map depicting four community physiotherapy services (Musculoskeletal Physiotherapy, Bed-Based Intermediate Care, Home-Based Intermediate Care and Community Physiotherapy) available within one London Borough. The map depicts where interventions proposed by England-wide interviewees are already in place in a well-resourced system, setting precedent for incorporating them into systems elsewhere (green). The map also depicts where interventions proposed by England-wide interviewees, that are not already in place in a well-resourced system, may be incorporated (red). The labels (blue) relate to process mapping components which depict 'Health Care Professionals,' 'Processes' and 'Targets' (text highlighted in red). These identify key points along the patient's journey. Sections in red indicate possible 'Targets' for intervention/implementation that are not already in place in a well-resourced system [23].

Additional system-wide processes that are part of current, or proposed procedures in the London borough based on interview data, are detailed below:

Clinical practice processes: Current procedures - Online notation; linked acute and community rotations for junior physiotherapists; redistribution of resources, staffing and flexibility in the system; rehabilitation ethos, early advice, guidance and support. Proposed procedures - Rehabilitation teams spanning acute to community care.

Recruitment/retention processes: Current procedures - Apprenticeship schemes, return to practice schemes, junior to senior development positions; flexible working, family friendly policies, part-time working; links with universities. Proposed procedures - Physiotherapists at board level; research to demonstrate the need for new physiotherapy positions.

## **Discussion**

### **Main Findings**

This qualitative study used a theory-informed approach (TDF) to identify physiotherapists' perspectives of barriers and facilitators to effective implementation of community provision following hip fracture in England. Interviews revealed four themes which emerged from the data; two related to clinical decision making (ineffective coordination, and stratification of care), one workforce experience (insufficient staff recruitment/retention), and one clinical treatment target (inhibitory fear avoidance behaviours). The TDF enabled us to examine how these themes influence behaviours on an individual, social and environmental level, shaping the implementation process. We mapped service provision for an urban community service to identify points of care where suggested interventions to address barriers are currently in place in a well-resourced system and/or could be implemented in the future.

### **Clinical decision barriers**

Effective coordination of care was highlighted as a prerequisite for maximising care transitions and patient flow following hip fracture [24, 25]. However, 'optimal coordination' in terms of components of provision and/or criteria for care transitions was not clear across physiotherapists. Most physiotherapists did express the importance of direct access to members of the multidisciplinary team for effective coordination of care, and specifically access to social care (*environmental context and resources*). This aligns with clinical guidelines [26-31] and previous studies where improving access to social care following hip fracture improved care transitions (e.g. housing issues), continuity of care, and conflict resolution [32, 33]. While many physiotherapists interviewed also expressed a lack of access to multidisciplinary team members (*knowledge, skills and professional identity*), process mapping reflected access to social services, occupational therapists and nurses within bed-based intermediate care and home-based intermediate care was feasible. Further research is required to determine the different components of provision, criteria for transitions of care, and the interactions and roles of different multidisciplinary team members. This would enable the design of practicable pathways ensuring patients are seen at the right time, by the right clinician, within the most appropriate service [34, 35].

Some physiotherapists perceived seven-day services would coordinate community care following hip fracture in keeping with evidence that they improve patient outcomes and flow throughout the care-continuum (*environmental context and resources*) [36]. The mapped services included established seven-day bed-based intermediate care services. Yet our interview data suggests this is rare, which helps explain why the mapped services included some (but not all) of the facilitatory solutions interview participants expressed at interview. Scarcity of seven-day services might be due to challenges in recruiting a multi-disciplinary team and/or lack of financial prioritising to fund them. There is a need to evaluate cost-benefits of seven-day services to substantiate future business cases to enable implementation.

Traditional clinical development often prioritises improvements in distinct services rather than entire pathways [37], with an emphasis on silo budgetary control at the expense of incentives for efficiency across local care pathways [38, 39]. Perceptions among physiotherapists of deficiencies in coordinating services across the care-continuum is therefore not surprising (*environmental context and resources*). This also offers insight into why some clinicians interviewed, who comprised a high level of seniority and experience, did not express how they have, or are, tackling important implementation barriers. They may have felt disincentivized to affect other aspects of the care continuum, because funders who

might support piloting a change do not want to risk there being no impact on their silo (*motivation and goals, beliefs about consequences*).

Physiotherapists recognised a lack of consistent stratification in their services but were able to articulate the benefits stratified care for patients following hip fracture can bestow. This is in keeping with the evidence that stratification enhances functional outcomes and reduces mortality [40-43]. Physiotherapists also reported under-utilisation of options to stratify patients to care provided by physiotherapy assistants. Process mapping highlighted feasibility of these approaches in one system, leading to faster access for patients to physiotherapy. Our data therefore suggests a mismatch between evidence for best practice and its implementation.

### **Workforce experience barrier**

It is evident from the current study, and others, that resources and funding is a key barrier to effective provision following hip fracture, particularly matching demand with physiotherapy staff capacity (*environmental context and resources*) [8-10, 44]. Furthermore, challenges regarding recruitment and retention in community physiotherapy services is recognised as a further barrier to effective provision. Physiotherapists working rurally described particular recruitment challenges compared to urban geographical regions. They felt graduate physiotherapists would be less attracted to rural roles, a sentiment echoed in a 2018 report [45]. This report surmised physiotherapists were more attracted to major urban centres with agglomeration economies, greater progression opportunities, specialisms, and technology funding, compared to rural localities. The report's solutions included opportunities for rural staff to rotate into specialist hospitals, and for specialist staff to have joint positions in urban/rural locations, in agreement with our interviews. Process mapping highlighted the feasibility of pooled acute hospital-community rotations which is likely to be privileged in urban community locations due to geographic proximity. In contrast, interview data showed pooling is rare within rural services, and even though rural physiotherapists identified pooled rotations and many creative recruitment strategies [46] the opportunities afforded to trial and evaluate them are rare (*beliefs about consequences*).

### **Clinical treatment target barrier**

A lack of interventions targeting fear avoidance behaviours after hip fracture was highlighted as an implementation barrier to effective provision by physiotherapists. Addressing the psychological burden of injurious falls is well documented [47-51] and approaches designed to reduce fear of falling following hip fracture include psychoeducation and cognitive behavioural therapy for patients and carers (*emotion, beliefs about capabilities*) [52]. Once embedded in provision these approaches lead to reduced costs [50], and improvements in social integration, psychological wellbeing, self-efficacy, and functional recovery [47, 48, 51]. Our data showed these approaches are not implemented routinely in the community. Process-mapping concurred that providing specific behavioural strategies to overcome fear avoidance was not implemented locally. Physiotherapists perceived including professional psychologists in multidisciplinary teams would be an advantage which has been reported in other studies [47-49] although there is no guarantee current workforce planning could cope with the demand for psychologists (*environmental context and resources*). Parallel strategies include providing training for physiotherapists and/or engagement of occupational therapists to target impaired cognitions and to use behavioural change strategies within their core practice (*social/professional role and identity*) [53, 54]. There is a need to determine the minimal psychological knowledge and skills required to support such a strategy and to

provide physiotherapists and/or occupational therapists with templates to implement interventions within their local context.

Physiotherapists referenced the impact of poor care coordination, stratification, and staffing on patients and carers, as well as the impact the threat of falls has on recovery progress after hip fracture. We did not explicitly focus on the role of patients and their carers in improving community rehabilitation after hip fracture, nor did this emerge from our inductive thematic analysis. However, previous research suggests that patients' and carers' perspectives can contribute to improved community care pathways after hip fracture[55]. Therefore, future service improvements should embody patient and carer voices.'

### ***Limitations***

Our recruitment strategy may have led to selection bias as participants who were motivated to engage may have retained more homogenous perspectives of 'effective care' and strategies to instigate change in current provision. Data were collected between January-June 2022 which included fluctuations in provision due to the COVID-19 pandemic. Data might therefore reflect a heightened period of resource constraint and an overestimation of barriers to effective provision. The findings of the interviews may not be transferable to the North-East of England due to differences in the organisation and delivery of community physiotherapy. Furthermore, participants involved in the process mapping were keen to demonstrate their successes from pathway reorganisation and utilisation of stratification strategies. This may have led to bias in the mapping, where ideal processes expressed might not reflect the daily reality of services.

Finally, the London borough was selected by convenience, but as the interviews progressed it became apparent that it was a well-resourced system relative to others across England. Future research should map other systems to quantify variation and explore underlying mechanisms for any observed differences (e.g., funding, geography, staffing).

### ***Conclusion***

According to a geographically diverse sample of English physiotherapists, effective post-hip-fracture provision could be improved by refining coordination of care, utilising patient stratification, employing creative recruitment/retainment strategies, and addressing fear avoidance behaviours using specified psychological approaches. Mapping revealed feasible strategies for implementing perceived facilitators for community rehabilitation following hip fracture.

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