Who should have a predischarge home assessment visit after a stroke?
A qualitative study of occupational therapists' views

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Introduction
Patients who have had a stroke may be discharged from hospital with new and significant levels of impairment affecting their ability to carry out everyday activities. The United Kingdom (UK) National Clinical Guideline for Stroke has recommended that a home assessment visit prior to discharge should ‘usually’ be completed by an occupational therapist for a patient who “remains dependent in some activities” (Intercollegiate Stroke Working Party, 2012: 27). These visits involve the occupational therapist accompanying the patient to his or her home for an assessment prior to discharge. Such visits constitute a key role for occupational therapists working in stroke rehabilitation (Chibnall, 2011). The aim of pre-discharge home assessment visits is to enhance patients’ safety and ability to cope at home following discharge (Lannin et al., 2007, Johnston et al., 2010). However, widespread variation has been reported in the number of visits conducted at different stroke unit sites across the UK (Drummond et al., 2012, Intercollegiate Stroke Working Party, 2006). No previous studies have explored occupational therapists’ views as to the types of patients with whom they would complete visits or examined the basis on which they would make this clinical decision. It is therefore not known which factors occupational therapists take into consideration when deciding which particular patients with a stroke should have an assessment visit.

There is a particular paucity of literature on home assessment visits relating to people who have had a stroke. Two studies have included information on the characteristics of patients with a stroke who had pre-discharge home assessment visits compared with those who did not (Clarke and Gladman, 1995, Luker and Grimmer-Somers, 2009). Clarke and Gladman (1995) examined the medical records of 297 patients with a stroke, from a large hospital in England. They reported no differences in terms of patients’ ages, or living arrangements, but did find that home assessment visits were significantly more likely to be carried out with patients on the stroke unit, those who spent longer in hospital, and those who were the most dependent patients. Luker and Grimmer-Somers (2009) carried out a study to investigate the relationship between staff compliance with discharge planning guidelines and the post-discharge experiences of patients with a stroke in Australia. Eighteen of the 50 patients in their study had a home assessment
visit before discharge. In contrast to Clarke and Gladman (1995) they found that those patients who had home assessment visits did not spend significantly longer in hospital or have lower scores on the Functional Independence Measure (FIM) or the Functional Assessment Measure (FAM) than those who did not have a visit. This suggests that they were not the most dependent patients. Thus, the findings from these two papers appear contradictory. This may be due to the extended time period between the two studies, and it further highlights the dearth of research in this area.

The wider literature on home assessment visits is also limited. Barras (2005) conducted a systematic review examining the effectiveness of these visits with older people which was not specific to a stroke patient population. A heterogeneous range of outcome measures were included comprising: costs, stakeholder perspectives, readmissions to hospital, use of standardised assessments and frequency of completion. This review included both pre and post-discharge home assessment visits. Despite this scope, Barras concluded that there was a lack of robust evidence to support the clinical or cost effectiveness for occupational therapy home assessment visits.

Thus, in view of the lack of evidence that such visits are effective at improving patient outcomes and the doubt over whether they are cost effective, the research question for this study was: what factors do occupational therapists consider when deciding which patients with a stroke need a pre-discharge home assessment visit?

**Method**
This study was part of The Home Visit after Stroke (HOVIS) study, in which qualitative methods were used concurrently to underpin a feasibility randomised controlled trial (RCT) which has been reported in detail elsewhere (Drummond et al., 2013). In combining qualitative approaches with the feasibility trial the objective was to identify factors which could affect the uptake of the RCT findings into clinical practice. One of the overall aims was to explore occupational therapists’ perceptions about home visiting practice and therefore a qualitative methodology was adopted. Interviews were used because they are a core method for gaining an understanding of participants'
perceptions and views (Astin and Long 2009). This study formed a sub-study of the qualitative component and placed specific emphasis on identifying the factors which led occupational therapists to complete pre-discharge home assessment visits with some patients, and not with others.

**Sampling**
Twenty interviewees were chosen as an appropriate and manageable number for such an exploratory study. An email was sent to all members of the College of Occupational Therapists Specialist Section for Neurological Practice (COTSS-NP) (approximately n=800) asking for senior occupational therapists working in in-patient stroke services, to volunteer if they were willing to be interviewed about pre-discharge home assessment visits. We purposely chose to interview senior occupational therapists in order to access the views of experienced therapists. We also anticipated that practices would vary geographically and that different issues may impact upon therapists working in urban or rural locations. We therefore purposively sampled to account for this. We located all the volunteers geographically on a map of the United Kingdom and aimed to select 20 therapists from different strategic health authorities in order to recruit a sample covering the UK.

**Ethics and Research Governance**
Ethical approval was obtained from Berkshire Research Ethics Committee (10/H0505/41). Research governance approvals were also obtained for each of the interview sites; the process of obtaining approvals was complex and time consuming and has been discussed elsewhere (Whitehead et al., 2011).

**Interview Schedule**
A semi structured interview schedule was prepared to encompass a range of issues in accordance with the main HOVIS research aims. The interview schedule included basic demographic information about the occupational therapists' experience and caseload. Questions on the schedule covered: the purpose of home assessment visits, visit reporting and documentation, improvements and issues with visits, and people present
on the visit. The schedule was developed based on the collective experience of the HOVIS research team and their knowledge of this field and the literature. Specific emphasis for this study was placed upon asking occupational therapists to provide examples of particular patients with whom they would and would not complete home assessment visits, and those for whom they would be uncertain about whether a visit was needed or not. A copy of the interview schedule can be obtained from the first author.

**Piloting and Completion of Interviews**

The interview schedule was piloted with a senior neurological occupational therapist in order to check that it was appropriate and useable. Minor amendments were made to the schedule following the pilot interview. The main interviews were then completed by four members of the research team. All interviews were completed via the telephone, at a time to suit the interviewee, and were digitally recorded. Consent was obtained verbally and recorded. The interviews were transcribed verbatim by a professional transcription service. The member of the research team who had carried out the interview then checked that particular transcript for accuracy against the audio recording. Any inaccuracies which were identified by the researchers were corrected.

**Analysis**

The interview transcripts were analysed using the six stages of thematic analysis outlined by Braun and Clarke (2006). In the first stage the transcripts were initially read several times in full to become familiar with the data, and then subsequently with particular focus and emphasis on the component which asked the occupational therapists to provide examples of those patients with whom they would and would not complete a pre-discharge home assessment visit, and those whom they would be uncertain about. The audio recordings were also listened to, in order to capture the specific emphasis and meaning of the texts. In the second stage, the entire dataset was coded and all items relevant to the research question were given a code. The third phase involved searching for patterns within the codes and grouping similar codes together to form initial themes. As part of the coding process, the initial codes were
checked and cross referenced with the other research team members. Where there was a disagreement, consensus was reached by discussion and by a majority decision amongst the team members.

In the fourth phase the themes were reviewed and checked in relation to the coded extracts. The fifth phase involved defining and naming the themes. The sixth and final phase involved writing-up the report and the final analysis and on-going refining of the themes. These final stages were conducted by the first author.

**Findings**

Seventy-five occupational therapists volunteered to participate. Twenty were selected on the basis of the mapping exercise. Table 1 shows the geographical spread of the occupational therapists by strategic health authority region in England, or by devolved nation. The sample provided a range of experience and caseload mix and the demographic details of the occupational therapists are shown in Table 2. The majority of the therapists were employed at Band 7 level. The interviews lasted between 17 to 67 minutes with a mean time of 39 minutes (SD 14.74).

*Insert Table 1*

*Insert Table 2*

Three themes were identified in relation to the research question: the patient’s level of impairment and its impact on performance in activities of daily living; factors relating to the patient’s home environment; and other influences on occupational therapists. Each theme was further divided into two sub-themes, as shown in Figure 1. Each theme will be presented separately.

*Insert Figure 1*

**Theme 1: Level of Impairment and Impact on Activities of Daily Living (ADL)**
The occupational therapists spoke extensively about a patient’s ability to manage tasks as being a determining factor in the decision to complete a home assessment visit. The patient’s ability to manage activities was linked to that patient’s pre-stroke level of ability, and how this had been affected by physical and/or cognitive and perceptual impairments resulting from the stroke. In general, the occupational therapists reported that visits would be completed for patients whose abilities were different to their pre-morbid abilities. Conversely, those who had regained their previous level of function would not require a visit.

“Okay, so somebody that I would do a home visit for, would be somebody who'd had quite a change in their level of function since their stroke” [OT, 2]

In general visits would be completed with the ‘more impaired’ patients:

“So we do tend to get a lot of the more impaired patients physically and cognitively. So by default we end up doing home assessments on most of those patients because they do tend to be the patients that fall into the most impaired brackets” [OT, 7]

Cognitive and Perceptual Impairments
Cognitive and perceptual impairments were a particularly important factor for most of the occupational therapists. The home assessment visit was viewed as a way to gain a more realistic view of how the patient’s impairment may affect their ability to function safely in their own home.

“[I would complete a home visit] for somebody who is cognitively impaired and they are struggling on the ward but I think they might be better in a familiar environment. Or they are doing quite well on the ward but I've got concerns about their cognitive impairment when they are not in that structured environment.”[OT, 20]
However, this was not unanimously the case. When asked to give an example of a patient with whom they would be unsure about completing a home assessment visit, those with a cognitive impairment were the most common examples. Several occupational therapists expressed concern that patients with a higher level of cognitive impairment may not be able to understand the nature and purpose of the visit:

“Someone who I probably wouldn’t do a visit with is someone who’s got a cognitive deficit in many ways because of the whole issue of the patient not really comprehending what the home visit is all about and maybe then not wanting to come back.” [OT, 8]

They also felt that the potential stressors of the home assessment visit may outweigh its benefits and that the patient may not gain anything:

“She’s not going to learn anything from being at home. Anything we need to teach her family we can teach them in the hospital environment…” [OT, 5]

**Mobility and Physical Impairments**

Patients with impairments that affected their mobility or physical abilities would also be likely candidates for home assessment visits in order to assess whether they would be able to function safely at home:

“Well obviously from the functional point of view…is he able to transfer safely at home?” [OT, 19]

However, although impairments in mobility and physical function were highlighted extensively, a concern was raised by some of the occupational therapists about whether the most physically impaired patients could cope with the demands of the home assessment visit:
“...things do come into play about whether or not they can tolerate sitting out long enough.” [OT, 2]

Thus, those who were very dependent may not be believed to need a visit because the impact of their impairment on ADL performance could be assessed adequately in the hospital:

“Because they’re... going to be dependent at home and everything that they’re going to be managing at home that you know say if they were able to feed themselves, that you could assess that in the hospital, the home environment’s not going to affect that” [OT, 17].

Overall, the occupational therapists believed that home assessment visits would be needed for patients whose ability to carry out ADLs had been affected by physical and/or cognitive and perceptual impairments following their stroke. The occupational therapists believed that those patients, who had more severe disabilities as a result of their stroke, were considered to require a pre-discharge home assessment visit. However, there appeared to be a split in the level of impairment which would warrant the completion of a visit. Those with very minimal or no impairment would not be viewed as requiring a visit. Those with a very severe degree of impairment would also not necessarily be offered a visit, either because the patient would be considered not to learn anything from the visit, or because the visit would be considered to be too demanding, distressing or risky for the patient. Therefore, it was those patients who had moderately severe levels of disability as opposed to those patients who have extremely severe levels of impairment and dependency whom the occupational therapists believed were most likely to need a home assessment visit. The impact of the patient’s home environment was also believed to be an important factor and this is now outlined in the second theme.

**Theme 2: Home Environment Factors**
The occupational therapists linked their examples about patients’ impairment with factors relating to the patient’s home environment, focusing particularly on whether the home environment would be suitable to support the needs associated with that impairment. They also might use the home assessment visits to obtain more information about the suitability of the home environment, especially if this information could not be obtained from other sources:

“There’s not actually anybody at home to give me any more information about the home environment so part of the home visit would be to collect that information as well” [OT, 11]

This theme included information about the physical fabric of the home and availability of family and formal care support and was divided into two sub-themes.

Physical features of the home
With regard to the fabric of the home environment, the home assessment visit was used to identify the actual characteristics of the property such as steps or stairs, or other potential hazards in relation to the patient’s ability:

“He would be very high risk of falls so really the removal of mats and ensuring the home environment is going to be a safe as possible to reduce falls risk” [OT, 16]

The visit was also used to assess whether the home environment would be suitable for the equipment they wanted to provide

“…and there was concern about how their frame or wheelchair or whatever would fit in the home environment” [OT, 20]

Availability of support at home
Availability of support from formal services and/or from family members was an important factor in determining whether a home assessment visit would be needed. Some of the occupational therapists explained that a visit may be required because of concerns they had about family members, or because family members were concerned:

“…his wife was very nervous about having him home because he was really doddery [i.e. frail and unsteady]… And, so, again, I wanted to demonstrate to her how the distances in the home are shorter than the distances in the hospital” [OT, 4]

Conversely, others suggested that a visit may be used to demonstrate to a family member the complexity of a patient’s needs and to emphasise the difficulties that the family member may encounter as a carer when the patient returned home:

“Sometimes the relative perhaps you realise on the first visit has no concept of the problems they’re facing so we might go back in another couple of weeks and then do another one” [OT, 9]

Obtaining information about the home environment from family members also appeared to help the occupational therapists assess how the patient would manage at home on discharge. In some cases, this information enabled them not to complete a home assessment visit because they could obtain the necessary information from or with the family:

“So because he had an architect son who knew what the environment needed to look like, the wife had certain sort of caring background working with stroke patients… the risks I felt were really low” [OT, 15]

Availability of formal community follow-up services was also a factor for some occupational therapists to take the decision to not complete a home assessment visit. They highlighted that issues related to the home environment could sometimes be
adequately addressed other services, or that they viewed the services as providing a form of ‘back-up’:

“…but she will also have a community rehab team follow her up and plus because a tiny little bit of slurred speech will also have SALT [Speech and Language Therapist] follow her up, so she has got that back up at home so that person we will not do a home visit [with]”[OT, 13]

Overall, the occupational therapists appeared to base their decisions on the relationship between the patient’s level of impairment and the suitability of the home environment to support and sustain their ability to function. Information about the home environment and about the availability of care support within the home environment was able to intensify or attenuate the occupational therapists’ feelings about whether a visit would be needed or not. They appeared to balance information about the person, with information about the home environment (the physical characteristics of the home and the availability of care support), in order to ascertain whether the two were compatible. However, there were additional factors that were extraneous to the patient or the environment which impacted upon their decisions and these are presented in the third theme.

**Theme 3: Influences on Occupational Therapists**

Other factors which impacted upon occupational therapists’ decisions were a much smaller component of the process. These were divided into external and internal influences.

*External Influences*

Some of the occupational therapists spoke about the influences of other people on the decision to complete a visit. In these cases, they were clear in their own mind that a visit was not required but a third party, either a relative or another staff member, was requesting a visit:
“… but also we get nursing staff and medical staff telling patients and families that there will be a home visit prior to us deciding if one’s actually needed or not, but then they have this idea in their head that this home visit will have to be done… when I don’t think they need one, but other people have told them that they do” [OT, 18]

Practical factors such as staff availability, time and resources also impacted on occupational therapists’ decisions. When commenting on the disadvantages of visits, occupational therapists were clearly mindful of the resource implications. A number of the therapists alluded to the time and costs involved in conducting a visit, and some reported that they would complete more visits if they had more time. It appeared that pressure to use time effectively may impact upon their decisions regarding home assessment visits; some occupational therapists may complete fewer visits than they would like to because of the pressures on their time.

*Internal Influences*

In some cases the occupational therapists had patients where they felt they were unable to articulate why a home assessment visit was needed and described it as a ‘gut feeling’ or instinct:

“…we do get those ones [patients] that you’re like ‘oh I just don’t know if I should do a home visit or not’. And it is, although it’s not very objective, sometimes it’s a gut feeling that you have about someone” [OT, 17]

“And very few that I struggle whether to do a visit or not, I feel if get to the stage that I’m not sure, that’s usually the one I should do a visit with.” [OT, 7]

Therefore in some circumstances the occupational therapists’ own reasoning about the patient and the home environment could be overridden by other factors. These factors may be driven by third parties or may come from the occupational therapist themself.
Discussion
This research sought to identify factors which influenced occupational therapists’ decisions about whether to complete pre-discharge home assessment visits for particular patients after a stroke. The reasoning process was found to be multifaceted with two key areas identified namely: the patient’s ability to manage activities of daily living, and aspects of the patient’s home environment. Other influences on occupational therapists represented a smaller component of the process. Making a decision about the need for a home assessment visit appeared to be a dynamic activity and was based upon an interactive process between each of these three areas.

When the occupational therapists identified a concern about a patient’s level of independence that resulted from impairment, they commonly balanced this with the information that they already had about the home environment. In some cases this information was able to attenuate their concerns and in other cases it intensified their concerns. A potential imbalance may occur when the occupational therapist was concerned about a patient’s ability to manage activities of daily living and their level of ability did not appear to be compatible with the information they had about the home environment being suitable to support or sustain that ability. For example, a lack of suitable carer support at home would represent a concern about the home environment. An imbalance between these two components (patient-environment) appeared to intensify concern about a potential risk factor. In these circumstances a home assessment visit may be indicated as a tool to gather further information and to seek a way to restore or promote the balance between the two areas. This finding is consistent with research conducted with experts on home visiting practice who also emphasised the importance of the fit between the patient and the environment (Fellows, submitted).

The findings linking patient with the environment are consistent with the tenets of The Person-Environment-Occupation Model (Law et al., 1996). This model postulates a transactive approach between the person, the environment they inhabit, and their occupational performance. In essence, the model proposes that the greater the degree of compatibility between the person and their environment, the greater the person’s
ability to function independently within the environment (i.e. better occupational performance). It is recommended that occupational therapy interventions should seek to promote the maximum amount of ‘fit’ between the person, the environment and their occupations.

This study focussed on examples of patients with whom occupational therapists would and would not complete home assessment visits, in order to explore how they made decisions. Resource limitations did not form a major theme within these, as the occupational therapists’ main focus was on the patient’s needs and the suitability of the home environment. However within the context of the wider interview, the occupational therapists demonstrated that time and resource limitations did have an impact on home assessment visiting decisions, with some suggesting that they would complete more visits if they had more time. It was not possible to determine how much weight this was given in the reasoning process, or how it was balanced with the other relevant factors, and this is a potential area for further research.

A limitation of qualitative research is the degree of subjectivity in researcher-participant relationship and the interpretation of the data (Carr, 1994), and this was a limitation of this study. However, we included some mechanisms to minimize this. The data collection and initial coding stages were conducted jointly by four researchers and the development of the themes was cross checked between researchers who were all familiar with the dataset. Furthermore, this research was an exploratory study which reported the views and perceptions of 20 occupational therapists that were all recruited from members of a specialist section of the United Kingdom College of Occupational Therapists. Therefore they may not necessarily be representative of occupational therapists nationally or internationally.

Notwithstanding these limitations, the findings from this study have highlighted some important factors which warrant further exploration. When asked to discuss those patients with whom they would be unsure about whether to complete a home assessment visit, those with a cognitive impairment were the most common examples.
The occupational therapists were particularly concerned about whether the benefits of a visit would outweigh the potential difficulties and whether these patients would actually ‘gain’ anything from the visit. With no research evidence to guide their practice, occupational therapists must base their decisions on their own judgement and clinical reasoning. Furthermore, previous randomised controlled trials of occupational therapy home assessment visits have explicitly excluded those with a cognitive impairment (greater than a mild impairment) (Pardessus et al., 2002, Lannin et al., 2007) which further exacerbates these difficulties. The findings from this study suggest that level of cognitive function is a particularly important factor for occupational therapists when deciding whether a home assessment visit is needed for patients with a stroke. Future research should therefore consider these patients, and explore the rationale of the home assessment visit for this patient group.

Furthermore, in recommending when a pre-discharge home assessment visit should be completed, the National Clinical Guideline for Stroke (Intercollegiate Stroke Working Party, 2012) does not highlight the home environment, or the presence or absence of other people or services within the home environment, as a consideration. However, the occupational therapists believed that these aspects could attenuate or mitigate the need for a visit. These findings are relevant to clinical practice as they highlight factors which might be incorporated into the clinical reasoning process in making a home assessment visit decision. They do not affect the need for individual cases to be clinically reasoned taking into account the specific and unique factors of that case. These findings could also form a basis for future research in order to examine the variations between occupational therapists in their reasoning to provide home assessment visits to individual patients following a stroke.

**Conclusion**

National stroke clinical guidelines (Intercollegiate Stroke Working Party, 2012) have based recommendations for the need for a pre-discharge home assessment visit on a patient remaining “dependent in activities” (pg 27). This was clearly evident as a key component in the occupational therapists’ decision making process. However, whilst
intuitively it might seem that those with the greatest degree of physical, cognitive and perceptual impairments would be the most likely to need a visit, this was not so. Although, the occupational therapists spoke in general terms about completing visits with ‘the more impaired patients’ they raised some concerns about the capabilities of the most severely physically and cognitively impaired patients being able to cope with the demands of the home assessment visit. Occupational therapists balanced information about the patient’s impairment with information about the home environment in order to decide whether a home assessment visit was indicated. This finding suggests a trend in practice and warrants further investigation.

Key Messages

Key findings

- Occupational therapists make their clinical decisions about whether to complete pre-discharge home assessment visits based on the patient’s level of functional ability and the home environment.

- Those patients who have moderately severe impairment post-stroke are most likely to be believed to need a pre-discharge home assessment visit.

- Views about home assessment visit decisions for patients who have cognitive impairment were mixed.

What the study has added

This study has provided insights into occupational therapists’ clinical decision making about pre-discharge home visits after stroke. This could be used to inform the on-going development of clinical guidelines for this practice. It will also contribute to the development of future clinical trials for pre-discharge home assessment visits in different patient groups.
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Declaration of Interests Statement

None declared.
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