

# One to one specialising and sitters in acute care hospitals: a scoping review

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Key words:

Specialising

Nurse Specials

Sitters

One to one care

Scoping review

**Funding statement:** This paper presents independent research and was funded by the University College London Hospitals (UCLH) NHS Foundation Trust, and supported by the National Institute for Health Research (NIHR) Collaboration for Leadership in Applied Health Research and Care North Thames at Bart's Health NHS Trust (NIHR CLAHRC North Thames). The views expressed in this article are those of the authors and not necessarily those of the NHS, the NIHR, or the Department of Health and Social Care.

## **ABSTRACT**

### **Background:**

One to one specialling is a type of care which is provided to ensure the safety of patients who may be suffering from cognitive impairment, exhibit challenging behavior, or may be at risk of falls or of causing harm to themselves or others. Care such as this, often referred to as ‘specialling’ or ‘sitting’ is common practice in most hospitals around the world, but there is a lack of evidence regarding its cost effectiveness and the quality of care provided.

### **Aim:**

The aim of this scoping review was to explore the breadth and scope of literature on one to one specialling, sitters and similar types of care in acute secondary care settings, in order to identify the challenges and concerns relating to the quality of care (process and outcomes) and cost effectiveness emerging from the literature, and determine the implications of this for policy, practice and future research.

### **Design:**

This review was based on scoping review methodology following a five stage scoping review process. A keyword search was conducted in the following databases: MEDLINE, Scopus, CINAHL Plus, Web of Science, ProQuest Social Science, and ProQuest Nursing and Allied Health. The time limit placed on the search was January 2000 to April 2016. Inclusion and exclusion criteria were applied. The Mixed Methods Appraisal Tool was used to assess the quality of primary research articles.

### **Findings:**

Forty-four articles were included in the review. We found a lack of clarity in the terms used to describe one to one specialling and variability in what this type of care entails, who provides the care and the needs of patients requiring this type of care. High costs of specialling are often seen as a concern, but there was a lack of economic evaluations considering the full cost of specialling and balancing these against the benefits. Some of the articles proposed alternatives to one to one specialling or the use of sitters, but only some of these were evaluated.

### **Conclusion:**

There is wide variation in what specialling and one to one care entails, which can in turn lead to the provision of poor quality care. A reduction in this variation and improved quality care might be achieved through the development of guidelines, training and standardized decision-making tools. Further research on the impact of one to one specialling on patient outcomes and cost would be beneficial, as well as robust evaluations of the alternatives to specialling.

### **What is already known about this topic?**

- The variable quality and cost of one to one specialling and similar types of care is a concern for acute secondary healthcare providers

### **What this paper adds**

- a need for clear standards and guidelines to regulate the quality and cost of one to one specialling and sitters
- an absence of information on the decision making processes to employ ‘nurse specials’ or those providing one to one specialling
- a comprehensive overview of some of the alternatives to specialling
- the implications for policy and practice
- a need for further mixed methods research on one to one specialling, sitters and similar types of care.

## **1. Introduction**

Specialling is a term which is used to refer to ‘1:1 care and close observation’ provided in acute hospital settings, for patients who are deemed to be at risk from ‘significant cognitive impairment, challenging behavior, risk of falls [or] a risk of self-harm and risk to others’ (Carter 2016: 21). Nurses providing this type of care are sometimes described as ‘specials’ (Carter, 2016; Dick et al., 2009), or ‘sitters’ (Dewing, 2013; Skowronsky et al., 2012). Issues surrounding the use and efficacy of this type of care are not new, but have been the cause of debate for some time. Questions have also been raised about potential harmful effects (Genese, 2005; Quin, 2005) and whether it improves quality of care (Capezuti and Brush et al., 2008; Rochefort et al., 2012; Spiva et al., 2012). The current cost and variability in the provision of this type of care are becoming increasingly important to secondary health care providers. For instance, a recent report on operational productivity and performance in English NHS acute hospitals highlights the great variation that exists in the management of specialling and the high cost associated with this type of care (Carter, 2016). These problems are not only limited to the United Kingdom (UK), but affect other countries such as the United States of America (USA), Canada and Australia (Carr, 2013; Nadler-Moodie et al., 2009; Schoenfisch et al., 2015; Wilkes et al., 2010). The aim of this review was to explore the breadth and scope of the literature on one to one specialling, sitters and similar types of care in acute secondary care settings, identify some of the challenges and concerns relating to the quality of care provided, the processes of delivering care (i.e. who does the specialling and what the care involves), the cost effectiveness of care, and the implications for policy, practice, and future research.

## **2. Method**

### ***2.1 Design***

The review involved a five-stage scoping review process (Arksey and O'Malley, 2005; Pham et al., 2014) aimed at identifying any gaps in existing literature and addressing our research questions. This five stage process consisted of: 1) Identifying the research questions; 2) Identifying the relevant studies; 3) Selecting studies; 4) Charting data; 5) Collating, summarizing and reporting the results. Relevant stakeholders (including: a Patient Public Involvement panel (PPI) made up of patients, former patients and carers, and a group of hospital staff with an interest in specialling) were also consulted on the aims of the research, the search terms, and the interpretation of findings.

## ***2.2 Research questions***

The questions that we used to guide the review were:

1. How is specialling/one to one care defined? 2) What activities does that care involve? 3) What are the decision-making processes used when deploying staff for one to one care? 4) Which types of patients are being cared for and what are their needs? 5) Who is providing the care? 6) What are the costs of one to one care? 7) How are the costs taken into account when deciding whether or not to use this type of care? 8) What are the alternatives to delivering one to one care?

## ***2.3 Search strategy***

The search covered the period January 2000 to April 2016 and was selected in collaboration with our stakeholder group to reflect their perceptions of the reforms in nursing practice and contemporary models of nursing care. The search strategy encompassed six online databases: MEDLINE, Scopus, CINAHL Plus, Web of Science, ProQuest Social Science, ProQuest Nursing and Allied Health.

### ***2.3.1 Search terms***

The search terms were obtained from an initial literature search (Green et al., 2001) generating a handful of articles on the topic of specialling and sitters (Dewing, 2013;

Graham, 2015; Quin, 2005; Tzeng et al., 2008; Wilkes et al., 2010). The search terms were then further refined in consultation with stakeholders. The search terms used were ‘1 to 1 nurse specials’ OR ‘one to one nurse specials’ OR ‘1 to 1 care OR one to one care’ OR ‘nurse specials’ OR ‘nurse special’ OR ‘special observation’ OR ‘direct nurse observation’ OR ‘direct nursing observation’ OR ‘close observation’ OR specialing OR specialling OR sitters.

## ***2.4 Article Selection***

Three authors (VJW, NS and CVP) screened the articles in three phases (title, abstract and full text). Articles published in peer-reviewed journals, as well as grey literature such as commentaries and opinion pieces were included in the search. Disagreements about the inclusion or exclusion of certain articles and the criteria used were discussed by three of the authors (VJW, NS and CVP) until consensus was reached.

### ***2.4.1 Inclusion and Exclusion criteria:***

The inclusion criteria for the papers were: papers written in English, focusing on the provision of one to one specialling and similar types of care by paid staff in acute secondary care hospitals. The exclusion criteria applied were: 1) any papers published in a language other than English (this was due to language limitations of the researchers involved in this review); 2) papers published outside of the timespan; 3) papers reporting on work in settings other than acute secondary care hospital settings; 4) papers reporting on work in psychiatric settings; 5) papers reporting on care solely provided by unpaid volunteers and carers.

## ***2.5 Data extraction/analysis***

Data were extracted and analyzed using a form developed in RedCap (Research Electronic Data Capture). A form was developed following the initial screening of the full text articles. Details regarding the characteristics of each of the articles were extracted. Analyses was performed using the questions that we address in this review. After the first round of analysis,

the form was modified to more appropriately capture some of the findings from the papers that were initially screened (see Appendix 1 for a summary copy of the form).

### ***2.6 Quality assessment***

The Mixed Methods Appraisal Tool (MMAT) was used to assess the quality of the primary research articles (Pluye et al 2012, 2014). In total, there were 16 studies screened independently by two raters using this tool. Only research articles with empirical findings were included in the assessment because the MMAT is specifically designed to assess these. The raters discussed their responses and inter-rater reliability was calculated using the kappa statistic (Landis et al 1977).

## **3. Results**

The initial search generated 4788 articles. The articles were imported into Endnote and duplicates were removed, leading to 3781 articles. Three authors then screened the articles by title, language, general topic, and type of publication, resulting in 150 articles. Screening based on abstracts resulted in 102 articles for full-text review. A review of bibliographies yielded one more article. After the full-text review, 58 articles were excluded. Forty-four articles were included in the final selection (see Figure 1).

***Figure 1. Study selection procedure [insert figure 1]***

### ***3.1 Quality assessment***

The MMAT is only suitable for assessing the quality of peer reviewed academic research articles presenting empirical findings. It is not suitable for assessing other article types such as service developments, reports or opinion pieces. For this reason only 16 of the articles that we reviewed were assessed using the tool.

The results from the quality assessment are in Table 1. Inter-rater agreement was 87% with a

Cohen's Kappa indicating substantial agreement ( $k=0.75$ ) (Landis et al 1977). In general, most studies included in the review addressed 3 out of the 4 areas assessed by the tool. The lowest quality could be found in studies with mixed-methods research designs.

Table 1. Results from the quality assessment tool obtained using the MMAT

Article	MMAT score
Boswell, D et al, 2001	***
Eeles, E, et al, 2013	***
Kerr, M, et al, 2013	***
Moore, V, et al, 2016	**
Moyle, W, et al, 2010	***
Portelli, M, et al 2016	***
Rochefort, C, et al 2011	****
Rochefort, C, et al. 2012	***
Schroeder, R, 2016	***
Schoenfisch, A, et al 2015	***
Shever, et al, 2011	***
Spiva, L, et al, 2012	***
Tzeng, H, M, et al, 2008	***
Waszynski, C, et al, 2013	*
Wilkes, L, et al, 2010	**
Worley, L, et al, 2000	***

<sup>†</sup>The total possible score for each article is \*\*\*\*.

This denotes an article which meets all of the criteria for a good quality article.

### ***3.2 Characteristics of the included articles***

Sixteen of the articles were peer reviewed articles reporting on empirical studies, ten articles reported on service development, five were commentary/opinion pieces, one was a newsletter, three were literature reviews, there were five conference abstracts, three reports and one PhD thesis.

Twenty-nine of the articles reviewed were published by authors from the USA, eight from Australia, three from the UK, three from Canada, and one from New Zealand. Table 2 provides a more detailed description of the types of articles included in the review, the main



characteristics of the research designs in empirical papers, and the main findings of the studies.

TABLE 2

### ***3.3 Definition of specialling and to one care being provided?***

The term ‘sitter’ was more frequently used in the USA and Canada whereas ‘specialling’ was more frequently used in the UK, Australia and New Zealand (see Table 2). Some of the other terms that were used to refer to the same type of 1 to 1 care included: constant, continuous or close observation; increased observation; special observation; direct observation; safety enhancement; enhanced care, continuous or patient surveillance. There were few articles that provided a clear definition, and although there were a few exceptions (Richman 2014; Rochefort 2011) in most cases the articles reviewed instead stated how the special was being used or the type of work i.e. close observation, without further elaboration (see table 2). Our findings confirm what other articles have labelled as ‘lack of conceptual clarity’ in the terminology used to describe this type of care (Dewing, 2013; Kerr et al 2013; Worley et al., 2000). To provide a sense of clarity and consistency throughout this review the term that we use to refer to this type of care is ‘specialling’ as it is defined within the Carter review of 2016 (see pg. 4). The justification for using this term is that it is the term most frequently found within the UK literature and it could also be deemed to be the one with the broadest reach with examples found in literature spanning almost most of the countries that were covered in this review.

### ***3.4 Who provides the specialling?***

Nursing assistants, nurse aides and healthcare assistants were most frequently responsible for this type of care. Registered nurses were sometimes responsible for undertaking the duties of

a special (Feil and Wallace, 2014; Kerr et al 2013; McNicoll et al., 2013; Richman, 2014; Riddell, 2011; Wilkes et al., 2010; Worley et al., 2000). Although we initially excluded articles that relied on the sole use of volunteers and family, some papers nonetheless mentioned their involvement in carrying out specialising work (Carr, 2013; Feil and Wallace, 2014; Nadler-Moodie et al., 2009; Riddell, 2011). In a number of other articles non-nursing staff such as customer support partners, untrained hospital workers, security staff and even chaplains and unit secretaries were used (see table 3). Some articles used the term sitter to denote who was providing the care without any further elaboration as to whether these were paid nursing staff or volunteers. Furthermore, there appeared to be no consistently identifiable relationship between the definitions used, who was providing the care, and the type of patients receiving care and their needs.

### ***3.5 What type of patients are 'being specialised'? What are their needs?***

Patients with dementia or delirium were referred to in twenty four of the articles. These were the most common category receiving specialising in acute secondary care settings. Head injury/neurological problems and confusion were mentioned in eleven articles (see Table 3). Other patients to receive specialising were often older adults, elderly or geriatric (Boswell et al., 2001; Dewing, 2013; Dick et al., 2009; Flaherty and Little, 2011; Kerr et al 2013; McNicoll et al., 2013, 2004; Moyle et al., 2011; Riddell, 2011; Schoenfisch et al., 2015; Skowronsky et al., 2015; Wilkes et al., 2010). Some were violent or suicidal, some were substance abuse patients, or those experiencing alcohol withdrawal, or had some form of mental distress. Six articles did not state the type of patients being cared for (Burtson and Vento, 2015; Evans, 2008; Jeffers et al., 2013; Schoenfisch et al., 2014; Shever et al., 2011; Tzeng et al., 2008).

Patient needs were often described in terms of risk, for instance risk of falls or of harm to self or others. Some patients were at risk of wandering, or elopement, or needed

assistance with tube or airway maintenance. Treatment disruption, psychotic behaviors, generalized weakness, thrombocytopenia, emotional distress, fear, respiratory failure, dehydration and infection were some of the other reasons less frequently mentioned (see Table 3). Four of the articles did not specify the needs of the patient (i.e. Kerr et al 2013; McNicoll et al., 2004; Moore et al., 2016; Skowronsky et al., 2015).

### ***3.6 How are decisions about the provision of this type of care made?***

Seventeen of the articles reviewed addressed how decisions about providing ‘specialling’ for a patient are made. The level of detail used to describe decision-making processes within these articles varied. Some articles reported a lack of clarity and formal policies or guidelines for implementing this type of care (Carr, 2013; Dick et al., 2009; Kerr et al 2013; Rochefort et al., 2012; Spiva et al., 2012). One article suggested that when sitter programs are designed more consideration should be given to incorporating guidelines on requesting and discontinuing sitters (Feil and Wallace, 2014). Other articles mentioned the use of forms to make requests for this type of care (Dick et al., 2009; Harding, 2010; Spiva et al., 2012). Request forms recorded details such as gender, patient need, reasons why the special was being requested and the number of hours/shifts required (Dick et al., 2009; Harding, 2010). In some cases request forms were also used as part of the process of verification used by managers to determine whether specialling was actually required (Harding 2010; Spiva et al 2012).

In some articles flow charts/algorithms were also used as part of the decision-making process (Dick et al., 2009; Spiva et al., 2012). For example Dick et al (2009) suggest that a flow chart was used during education sessions as part of the process of training nurses in assessing the need for a special. The education sessions were also said to include information about the nurse’s responsibilities when specialling, patient assessment and planning and alternative strategies that might be used. Dick et al (2009) go on to suggest that as a result of

these education sessions the number of specials used was effectively reduced. Similarly, the study by Spiva et al (2012) reports on the use of an algorithm, this was used to assess ‘the physiological, psychosocial, and pharmacological causes for the patient’s behavior’ and the potential alternatives that could be used before employing a sitter (Spiva et al 2012: 342). Along with sitter justification forms, the algorithm formed part of a sitter reduction program which also included some training on how to use these tools. The findings suggest that the program was successful in managing to reduce the number of ‘sitter hours’ used, in addition to a reduction in cost. Thus suggesting that when combined with training there may be positive benefits to the use of decision making tools.

Rochefford et al. (2011) took an innovative approach to investigating the decision making process. Recognising that Registered Nurses (RN) have a large role in the decision to use a sitter (especially in the absence of formal decision making criteria), they looked at the staffing characteristics of RNs involved in the decision making process. The results of their study suggested that sitter use was associated with RN overtime and that overworked nurses requested more sitters. In addition, they found that highly trained nurses requested fewer sitters because they had better patient management skills and needed to spend less time mentoring and supervising less experienced staff.

### ***3.7 What specialising entails***

Many of the articles did not state what the care entailed (see Table 3), whilst those that did tended to focus on two categories: 1) Providing care and/or 2) Custodial roles. The former involved interactions with the patient (Carr, 2013; Dewing, 2013; Kerr et al, 2013.) such as: companionship, therapeutic touch, engaging the patient in meaningful activities (such as games, conversations, distraction techniques) (Bailey et al., 2009; Waszynski et al., 2013), attending to personal hygiene or providing supervision when mobilizing (Schoenfisch et al.,

2015; Schroeder, 2016). The custodial role involved passive observation, such as watching, monitoring (Capezuti and Brush, 2008) and surveillance (Rochefort et al., 2011).

‘Babysitting’ (Moyle et al., 2011) and alerting other staff members to the imminent dangers that the patient posed were also mentioned. In some instances, the specialling involved immobilization or restraint (Capezuti and Brush, 2008). Tensions between the caring/therapeutic vs. custodial aspects of specialling were also highlighted (Dewing, 2013; Evans, 2008; Kerr et al 2013; Riddell, 2011; Wilkes et al., 2010). In some cases, there was overlap, for instance in an example from the USA, Tzeng et al (2008) highlight how physical restraints and sitters were sometimes used simultaneously to ensure patient safety .

### ***3.8 Quality of care***

In three of the articles, specialling was seen to have a positive impact on quality of care in relation to patient outcomes, for instance, by improving patient satisfaction (Boswell et al., 2001), enhancing the safety and comfort of patients, reducing their agitation (Waszynski et al., 2013) and reducing rates of re-admission (Riddell, 2011). Similarly in terms of care processes, in two articles the positive impact of specialling was emphasized. For instance, it was suggested specialling improved the quality of nursing (Burtson and Vento, 2015), and helped to improve the rate at which staff responded to patient falls (Jeffers et al., 2013).

Conversely, in other articles they highlighted a negative impact on care outcomes such as an increase in falls. The increase in falls was potentially due to other risk minimizing tools not being used as frequently ‘such as bed check monitors’, and whereas bed check monitors could be used to provide continuous care, sitters on the other hand might step away from a patient, leaving them unmonitored, which in turn could lead to a fall (Boswell et al., 2001: 15). Specialling was also said to increase the risk of patients’ sense of isolation due to staff

perception of patient hostility, danger and the need to be avoided (Quin, 2005). Some of the articles suggested that there was no impact on the quality of care provided (Capezuti and Brush, 2008; Spiva et al., 2012). Or they reported a more negative effect, whereby patient safety was often prioritized over their dignity and wellbeing, for example not letting the patient shut the door when going to the toilet due to concern that the patient may come to some harm (Moyle et al., 2011: 423).

Three articles reported physical, verbal or sexual assault experienced by staff providing this type of care (Evans, 2016; Riddell, 2011; Schoenfisch et al., 2014, 2015), which staff were not typically trained to deal with (Schoenfisch et al., 2014, 2015). Such abuse can have psychological impact on staff wellbeing, invoking a sense of fear and apprehension (Riddell, 2011). Quality of care should therefore not be restricted to the impact that this type of care has on the wellbeing of patients, on patient outcomes and on the way that care is provided, but should also include the wellbeing and safety of staff.

### ***3.9 Patient experience***

The majority of articles did not consider one to one specialising from the patients' perspective. Where it was considered, this was usually staff perceptions and accounts of what patients experienced (Adams and Kaplow, 2013; Boswell et al., 2001; Jeffers et al., 2013; Kerr et al 2013; Moore et al., 2016; Quin, 2005; Schoenfisch et al., 2015; Schroeder, 2016). In some articles such as Boswell et al. (2001), patient satisfaction was a primary outcome, and may be considered a proxy measure of patient experience. However, patient satisfaction was seen as a risk factor for patient complaints and accusations of poor care. Waszynski et al (2013) used a tool to measure levels of patient agitation before and after the introduction of 'individualized therapeutic activities'. None of the articles included direct patient-reported experiences of specialising, despite the fact that 'patient-centred care' was often cited as a

primary aim of a given intervention (albeit one that was secondary to the aim of patient safety). This is supported by Riddell (2011) who could only find two articles on patient experience, both of which were in a mental health care setting, which we therefore excluded.

### ***3.10 Cost of specialling***

Thirty-two articles considered the cost of specialling, however, only eighteen provide any cost estimates (Adams and Kaplow, 2013; Bailey et al., 2009; Boswell et al., 2001; P. L. Burtson and Vento, 2015; Carr, 2013; Dewing, 2013; Dick et al., 2009; Feil and Wallace, 2014; Flaherty and Little, 2011; Harding, 2010; Jeffers et al., 2013; Laws and Crawford, 2013; Nadler-Moodie et al., 2009; Riddell, 2011; Rochefort et al., 2012; Spiva et al., 2012; Tzeng et al., 2008; Worley et al., 2000) . The majority of these were from the USA, and reported problems faced by hospitals having to pay for sitters without being able to pass the costs onto third party insurers.

The examined cost analyses varied greatly among these eighteen studies. The main costs considered were the staffing costs of the specials being employed, usually in terms of cost per shift, but studies also considered revenue from patient visits, cost associated with falls, monitoring equipment costs. The costs of training programs or gatekeeping measures (like additional sign-off or additional request forms/procedures) were rarely included in financial calculations, even when they were the focal intervention of the article. Only twelve articles considered the cost of specialling in a comparative way, typically as a ‘before-after’ design, or a budget impact analysis (Adams and Kaplow, 2013; Bailey et al., 2009; Boswell et al., 2001; P. L. Burtson and Vento, 2015; Carr, 2013; Dick et al., 2009; Jeffers et al., 2013; Laws and Crawford, 2013; Nadler-Moodie et al., 2009; Riddell, 2011; Rochefort et al., 2012; Spiva et al., 2012). Of these, only one (Riddell 2011) conducted a full economic evaluation, comparing the staffing costs of two hospitals that adopted different methods of specialling

against the risk of falls. Their analysis found that providing specialising through a specialist nursing resource team was substantially cheaper than the comparison, which used exclusively temporary contract workers. Six studies reported descriptive costs only, such as hourly wage rates, or acknowledged the importance of the cost of specialising given resource constraints but did not provide cost estimates (Dewing 2010; Harding 2010; Flaherty et al 2011; Tzeng et al 2008; Worley et al 2000; Feil and Wallace 2014). The majority of these articles noted that healthcare providers were concerned with the rising costs of specialising. Many justified their efforts to reduce specialising and therefore cost by citing lack of evidence that specialising improves patient outcomes.

### ***3.11 Alternatives to specialising***

Twenty-five articles described at least one alternative to the use of specialising. These are listed in Table 4. Many of these alternative interventions detailed in the literature were intended to either replace or reduce the number of ‘nurse specials’. Different types of visual and audio monitoring were most frequently described. Close observation units where patients were continuously monitored via video cameras (Eeles et al., 2013; Skowronsky et al., 2015, 2012; Stead, 2014), and trial mobile video monitoring systems (P. L. Burtson and Vento, 2015; Jeffers et al., 2013; Richman, 2014; Worley et al., 2000) have also been used.

Table 4. Alternatives to specialising

Articles	Type	Examples
Adams and Kaplow, 2013; Burtson and Vento, 2015; Dick et al., 2009; Eeles et al., 2013; Harding, 2010; Jeffers et al., 2013; Lang, 2014; Laws and Crawford, 2013; Richman, 2014; Rochefort et al., 2011; Skowronsky et al., 2015, 2012; Spiva et al., 2012; Stead, 2014; Weeks, 2011; Wilkes et al., 2010; Worley et al., 2000	Visual and audio monitoring	<ul style="list-style-type: none"> <li>- Bed, chair, door, belt alarms</li> <li>- Bed check monitors</li> <li>- Tracking bracelets</li> <li>- Identifying wrist bands</li> <li>- Panic/distress buttons</li> <li>- Video monitoring of patient</li> </ul>
Adams and Kaplow, 2013;	Mobility aids	<ul style="list-style-type: none"> <li>- Non-slip slippers/socks</li> </ul>



Harding, 2010; Laws and Crawford, 2013; Lang, 2014; Weeks, 2011		<ul style="list-style-type: none"> <li>- Walker at bed-side</li> <li>- Bed in lowest position</li> <li>- Bed rails</li> </ul>
Lang, 2014; Laws and Crawford, 2013; Schoenfisch et al., 2015; Shever et al., 2011; Weeks, 2011; Worley et al., 2000	Environmental changes	<ul style="list-style-type: none"> <li>- Removal of unnecessary equipment/clutter</li> <li>- Fall precaution magnets on doors</li> <li>- Non-slip mats</li> <li>- Nightlights</li> <li>- Soothing music</li> <li>- Avoidance of loud noises</li> </ul>
Harding, 2010; Lang, 2014; Laws and Crawford, 2013; Wilkes et al., 2010	Patient interventions	<ul style="list-style-type: none"> <li>- Medication reviews</li> <li>- Sleep protocols</li> <li>- Targeted patient management protocols</li> <li>- Wrapping or hiding of intravenous lines</li> <li>- Distraction/relaxation techniques</li> <li>- Assessment of consciousness and strength at short time intervals</li> <li>- Supportive communication</li> </ul>
Flaherty and Little, 2011; Harding, 2010; Lang, 2014; Laws and Crawford, 2013; Spiva et al., 2012; Worley et al., 2000	Patient relocation	<ul style="list-style-type: none"> <li>- Hallway placement</li> <li>- Placement close to nurses' station</li> <li>- Cohorting (grouping patients requiring similar care in the same ward area)</li> <li>- Avoidance of room changes</li> </ul>

These alternatives reflect the various potential functions of specialising. Audio-based monitoring is mainly achieved through alarms, placed on the patient's bed (reacting to changes in pressure), chairs, doors, and belts. The aim is to alert staff when patients at risk of falls are on the move. One article proposed panic or distress buttons for patients to alert staff when they needed assistance (Richman, 2014).

For patients at risk of falls, five articles explore alternatives to facilitate their mobility, for instance walkers (Laws and Crawford, 2013) or accessories to secure their walking such as non-slip slippers or socks (Harding, 2010; Lang, 2014; Weeks, 2011). The bed area can be made more accessible to patients by lowering the bed or adding hand rails (Adams and

Kaplow, 2013; Harding, 2010; Lang, 2014; Laws and Crawford, 2013). Changes can also be made to the environment, such as moving clutter from rooms, corridors, moving equipment or signposting areas that could lead to tripping or slipping (Laws and Crawford, 2013; Schoenfisch et al., 2015; Shever et al., 2011; Weeks, 2011; Worley et al., 2000). Non-slip mats can be provided (Lang, 2014) and lightning can be managed during the day and night to allow adequate visibility (Lang, 2014; Laws and Crawford, 2013; Shever et al., 2011). Soothing music can be played to facilitate relaxation for patients who might startle or who suffer from confusion (Lang, 2014; Laws and Crawford, 2013).

At the patient-level, some articles propose different ways of managing medication, pain, and sleep (Harding, 2010; Lang, 2014; Wilkes et al., 2010). The wrapping or hiding of intravenous lines can prevent patients from pulling at them during episodes of confusion (Lang, 2014; Laws and Crawford, 2013). Patients can be assessed at shorter intervals to make sure they are not putting themselves or others at risk of harm (Harding, 2010). Supportive communication strategies can also be used to put patients at ease (Laws and Crawford, 2013). Patients can be moved to the front of the nurses station where they are visible to staff (Flaherty and Little, 2011; Harding, 2010; Lang, 2014; Laws and Crawford, 2013; Spiva et al., 2012; Worley et al., 2000) or they can also be bay cohorted (placing patients with similar conditions together in the same area) (Worley et al., 2000).

While a wide range of alternatives to specialising were explored, few articles evaluated them. We present these evaluations, the main outcome measures and results in Table 5. Of these evaluations one study suggested that mobile video monitoring systems produced a reduction in costs (Burtson and Vento, 2015b). Flaherty et al. (2011) found that by relocating patients closer to nurses' station, they were able to decrease the use of restraints without increasing the risk of falls. Targeted patient protocols and assessments over shorter periods of time also led to a decrease in falls and staff injuries (Laws and Crawford, 2013). Weeks et al.

(2011) found that bed alarms, fall precaution magnets, slip-resistant socks and support provided by family members produced a decrease in falls. However, this study, which was designed to test a ‘bundle’ of interventions may have reduced falls in the short term, but it could be suggested that further, more robust research would be needed before any conclusions about the effectiveness of alternatives such as bed alarms can be established. This is especially the case in light of other articles focusing more exclusively on the intervention of bed alarms, which have found that there is no evidence that they reduce the rate of falls (see Shorr et al 2012).

Table 5. Evaluations of alternatives to specialling

Article	Type	Sub-type	Outcome measures	Results
Eeles et al 2013	Visual and audio monitoring	COU	Falls Discharge rates LOS	No difference in measures when compared to control group
Skowronsky et al 2015	Visual and monitoring	COU	Falls	No difference in measure when compared to control group
Burtson and Vento 2015b	Visual and monitoring	Mobile video monitoring	Sitter costs National benchmarks for falls, falls with injury and restraints	23.9% reduction in costs in the first year and 53.6% reduction in the second year  Maintained or outperformed benchmarks
Weeks 2011	Visual and monitoring  Environmental	Bed alarms, fall precaution magnets, slip-resistant socks, and encouraging family members to stay with	Falls  Falls with fractures	Decrease in falls and falls with fractures since the implementation of these alternatives

		patients		
Jeffers et al 2013	Visual and monitoring	Remote video monitoring	Falls Sitter costs	Decrease in falls  Decrease in costs associated with reduced number of sitter shifts
Laws and Crawford 2013	Patient interventions	Targeted patient management protocols, assessments in shorter time intervals	Falls  Staff injuries	Impact on falls is unclear  80% decrease in injuries to staff from 'combative patients'
Flaherty and Little 2011	Patient relocation	Delirium room (DR) close to the nurses' station	Use of restraints  Risk of falls	Decrease in the use of restraints for patients in the DR  Did not increase for patients in the DR

COU: close observation unit  
LOS: length of stay

#### 4. Discussion

The literature highlights how there is a lack of clarity in the terms used to describe specialising. Care is sometimes provided by people without a nursing background such as security personnel, and chaplains who would not ordinarily, in their everyday working capacity, undertake this type of caring role (Richman, 2014; Riddell, 2011; Schoenfisch et al., 2015). There are also differences in what specialising involves. In dealing with differences and variations in practice and in aiming to reconceptualise this type of care, in the UK, the Carter review (Carter, 2016) suggested replacing the term specialising with 'enhanced care'. Whether the introduction of another term is helpful has yet to be determined. However, it could be suggested that the range of terminology does not seem to reflect differences in the work that this type of care involves, such as the provision of care which is therapeutic (aimed

at enhancing patients experience) or custodial (consisting of observation and restraint). It may therefore be more effective to clearly differentiate between the two by using ‘specialling’ to denote a therapeutic approach and ‘sitters’ to denote one that is passive and/or custodial. However, given the importance of treating patients with dignity and respect and the emphasis healthcare providers place on quality of care, and providing a safe, positive experience for patients (Swinglehurst et al., 2014), it would be somewhat remiss not to adopt an actively therapeutic approach whenever possible and appropriate.

This situation is further complicated by the absence of clear guidelines governing the decision-making process, which would be important in helping to regulate quality of care provided and ensure patient and staff safety as well as contributing to better patient and staff experience.

In addition to this it is also clear from the literature that it is extremely difficult to measure the relationship between specialling and patient falls, and harm events and satisfaction/experience. It is additionally difficult to quantify these in monetary terms, despite attempts by those such as Boswell et al (2001) to arrive at a ‘cost-per-fall’ or incremental costs associated with a decrease in score of a patient satisfaction questionnaire. Furthermore, the heterogeneity of the populations being specialised, the staff doing the specialling, and the alternatives being tried make comparative analysis all but impossible. That said, clear themes do emerge throughout the literature: that specialling is perceived to be costly and there is a need to reduce this because it places a heavy financial burden on healthcare providers (Burtson and Vento 2015b; Lang 2014; Skowronsky et al 2012; Stead et al 2014; Worley et al 2000) that the cost of specialling is rising (Jeffers et al 2013; Rochefort 2011; Weeks 2011). However, as there is yet, very little evidence to suggest any effect on patient outcomes (Dick et al 2009; Laws and Crawford 2013; Shever 2011; Weeks 2011; Wilkes 2010), which raises the question of whether the costs are justified. Although by no means conclusive, the only

full economic evaluation we found was a comparison of an internal pool of dedicated specials run by the hospital compared with external providers of temporary staff, and that the former was significantly more cost effective (Riddell 2011). In contrast, the attempts by other studies to reduce or replace a proportion of their nurse specials ran into difficulties in their attempts to clearly distinguish the impact of the improvements to the management of specials (e.g. oversight, training, decision criteria) from the impact of reducing or replacing the specials themselves. Furthermore, where apparently clear cost reduction is achieved this is often at the expense of measuring benefits or outcomes of any kind. Similarly, it is recommended that the cost of training for gatekeeping measures be fully considered in costing analyses, along with staff costs, relevant patient costs and incomes, and costs resulting from any incidents of harm such as falls. It would therefore be preferable for health policy makers concerned with the cost of specialising to first address problems of management and quality of specials before trying to reduce the amount of specialising.

## **5. Limitations**

There were a number of limitations to this study. Articles were limited by date of publication so articles published April 2016 onwards have not been included in this review. Although we used multiple broad search terms, it is possible we missed articles that refer to a similar type of care that did not use these terms. We also excluded articles by language, so to this extent our review may have missed potentially important contributions to the topic of specialising. The tool we used to assess the quality of the studies also has limitations (Crowe and Sheppard, 2011; O’Cathain, 2010; O’Cathain et al., 2008).

## **6. Conclusion**

The implications for policy and practice include the need to reduce variation in care practices

through the introduction of training and tools that better support the decision-making process. To do this effectively, however, would also require the introduction of a robust set of guidelines and standards. To develop guidelines and standards which ensure the quality of care provided is '*effective, safe and provides as positive experience as possible*' (Swinglehurst et al., 2014) we would argue that further research on the use of specialising is needed.

Our call for the need for further research is consistent with the findings of other studies which call for more research into the effectiveness and cost effectiveness of specialising in reducing patient harm (Harding 2010; Lang 2014) and on the efficacy of using some of the different alternatives to specialising and what the benefits of this might be (Riddell, 2011; Rochefort 2011; Skowronsky 2015). We believe this would be helpful for those working in clinical practice who are looking to employ alternatives as a method to either support specialising or indeed reduce it. For institutions looking to reduce this type of care there should also be further research on what the quality outcomes of programs aimed at reducing this type of care might be (Spiva 2012).

In addition to this we would also argue that there should be further mixed methods research, aimed at understanding the different decision-making models and processes employed at different institutions, and gaining a clearer understanding of the type of work involved and different approaches to specialising (Dick et al 2009). The research would also be capable of highlighting the impact of specialising on patient experience and outcomes, and include a component on cost, and a robust evaluation of alternatives to specialising which takes into account the point of view of patients and their needs.

## **Contributions:**

Contributions: VJW, NS, CV-P, MM, SC, SM, NJF conceived of the idea for the review and participated in the design. VJW, CV-P and NS carried out the literature search and analysis of the selected papers. VJW, CV-P, NS and MM led on drafting the manuscript. All authors contributed substantially to the writing of the paper. All authors contributed to the revisions on the paper and feedback to reviewers and all have reviewed and approved the final draft.

**Funding Statement:** This paper presents independent research and was funded by the University College London Hospitals (UCLH) NHS Foundation Trust, and supported by the National Institute for Health Research (NIHR) Collaboration for Leadership in Applied Health Research and Care North Thames at Bart's Health NHS Trust (NIHR CLAHRC North Thames). The views expressed in this article are those of the authors and not necessarily those of the NHS, the NIHR, or the Department of Health and Social Care.

**Acknowledgments:** We would like to thank and acknowledge the UCLH Nurse Specials group, including Martin Bruce, Sarah Buxton-Parvin, Eamonn Sullivan for their role in bringing the topic of Specialising and Nurse Specials to our attention and for their continued support throughout the period of time spent that we spent conducting the review. We would also like to thank our PPI panel for their continued advice and support throughout the various stages of this review.

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