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EMPIRICAL RESEARCH - QUALITATIVE

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Delegation of insulin administration to non-registered healthcare workers in community nursing teams: A qualitative study

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Abstract

Aims: To explore stakeholder perspectives on the benefits and/or disadvantages of the delegation of insulin injections to healthcare support workers in community nursing services.

Design: Qualitative case study.

Methods: Interviews with stakeholders purposively sampled from three case sites in England. Data collection took place between October 2020 and July 2021. A reflexive thematic approach to analysis was adopted.

Results: A total of 34 interviews were completed: patients and relatives ($n=7$), healthcare support workers ($n=8$), registered nurses ($n=10$) and senior managers/clinicians ($n=9$). Analysis resulted in three themes: (i) Acceptance and confidence, (ii) benefits and (iii) concerns and coping strategies. Delegation was accepted by stakeholders on condition that appropriate training, supervision and governance was in place. Continuing contact between patients and registered nurses, and regular contact between registered nurses and healthcare support workers was deemed essential for clinical safety. Services were reliant on the contribution of healthcare support workers providing insulin injections, particularly during the COVID-19 pandemic. Benefits for service and registered nurses included: flexible team working, increased service capacity and care continuity. Job satisfaction and career development was reported for healthcare support workers. Patients benefit from timely administration, and enhanced relationships with the nursing team. Concerns raised by all stakeholders included potential missed care, remuneration and task shifting.

Conclusion: Delegation of insulin injections is acceptable to stakeholders and has many benefits when managed effectively.

Impact: Demand for community nursing is increasing. Findings of this study suggest that delegation of insulin administration contributes to improving service capacity. Findings highlight the essential role played by key factors such as appropriate training,

competency assessment and teamwork, in developing confidence in delegation among stakeholders. Understanding and supporting these factors can help ensure that practice develops in an acceptable, safe and beneficial way, and informs future development of delegation practice in community settings.

Patient or Public Contribution: A service user group was consulted during the design phase prior to grant application and provided comments on draft findings. Two people with diabetes were members of the project advisory group and contributed to the study design, development of interview questions, monitoring study progress and provided feedback on study findings.

KEYWORDS

case study, community nursing, delegation, health workforce, healthcare assistant, healthcare support workers, insulin injection, qualitative, registered nurse

1 | INTRODUCTION

Managing safe caseloads for nursing services in the community is a complex task that must accommodate rising multimorbidity in the ageing population, fluctuating demand and high staff turnover (McGilton et al., 2018; Spilsbury et al., 2013; The Queen's Nursing Institute, 2016). Worryingly, research has identified a gap between demand and capacity in community nursing services in the United Kingdom (UK) (Maybin et al., 2016). Meanwhile, the forecast is that type 2 diabetes will increase in prevalence worldwide (Khan et al., 2020), disproportionally affecting older people with complex care needs (DECODE Study Group, 2003; Public Health England, 2016). In the UK, 20%–24% of people with type 2 diabetes are prescribed insulin (Sharma et al., 2016), and an estimated 18.8% in the United States (Pantalone et al., 2015). Modelling has suggested that UK community nurses administered insulin to an estimated 10,800 people with diabetes who could not do this themselves, due to a variety of issues, such as arthritis, or cognitive capacity (memory loss) (Livingstone et al., 2013). Furthermore, over 50% required multiple injections per day, comprising a significant proportion of the community nursing workload (Livingstone et al., 2013).

The employment of healthcare support workers (such as healthcare assistants and nursing assistants) is increasing in many countries to expand the capacity of nursing teams (Blay & Roche, 2020). Often driven by staff shortages and high service demand, delegation of care can help alleviate pressure on nursing teams (Liu et al., 2017). Delegation of medicines administration from registered nurses to healthcare support workers is practiced in a range of countries (Shore et al., 2021) and can include administering insulin injections (Owen, 2009; Spilsbury et al., 2013). A recent review of delegation of medicines administration in community settings found delegation can be a complex process influenced by multiple factors that impact on staff confidence and patient safety (Shore et al., 2021). However, there is a lack of research specific to the delegation of insulin injections that can inform the development of safe practice in this area.

1.1 | Background

Globally, healthcare support workers, such as healthcare assistants and nursing assistants, do not hold a qualification accredited by a professional body and may not be formally regulated by a statutory body (Kessler et al., 2010). Registered nurses remain accountable for their decision to delegate and must only delegate work that is within the other person's competence, as stipulated in multiple international standards (American Nurse Association (ANA) & National Council of State Boards of Nursing (NCSBN), 2019; Chartered Society for Physiotherapy et al., 2006). In the UK, as elsewhere (Shore et al., 2021), delegation of insulin administration occurs within a framework of local governance overseen by individual healthcare organizations and includes training of healthcare support workers, assessment of competencies, monitoring and adherence to protocol, such as patient inclusion criteria (Diabetes UK, 2016a).

Previous research has shown delegation to be influenced by inter-professional and team relationships (Campbell et al., 2020; Hopkins et al., 2012), the clarity of roles and responsibilities (Blay & Roche, 2020; Munn et al., 2013) and the quality of supervision (Bifarin & Stonehouse, 2017). While benefits of delegation have been identified for services, patients and staff, concerns have also been raised by registered healthcare workers about staff acceptance, role blurring and patient safety (Shore et al., 2021). It has been reported that some registered nurses view the employment of healthcare support workers as a cheap replacement for Nurses (Alcorn & Topping, 2009; Thornley, 2000). Additionally, registered nurses raise concerns about missed opportunities to provide equivalent standards of care (Bittner & Gravlin, 2009; Kalisch, 2006).

The nature of delegated work undertaken by healthcare support workers includes, but not limited to, electrocardiograms, complex wound care, cannulation, suture and administration of medication (Blay & Roche, 2020; Shore et al., 2021; Spilsbury et al., 2013) demonstrating an evolving and increasing level of skill (Blay & Roche, 2020; Fee et al., 2020; Hand, 2007). Literature specific to the delegation of insulin injections reports potential benefits,

such as improved capacity and flexibility to meet service demand (Cook, 2015; Dutton et al., 2018; Owen, 2009), improved diabetes knowledge of staff (Cook, 2015; Owen, 2009) and greater continuity of care and timeliness of medication administration for patients (Cook, 2015; Gregory, 2019). However, these studies, all UK based, are small scale and lack independent evaluation.

As the number of people with diabetes unable to administer their own insulin is predicted to increase (Khan et al., 2020) and global healthcare workforce shortages are predicted to worsen (World Health Organization, 2020), research on this topic is both important and timely. Insulin is consistently recognized as a high-alert medication, meaning that any error in administration has the potential to cause detrimental patient harm (Institute for Safe Medication Practices, 2017). Therefore, research to understand the delegation process is needed to ensure that it develops in a way that is acceptable and safe for those concerned.

2 | THE STUDY

2.1 | Aims

The study aimed to explore any benefits and/or disadvantages of the delegation of insulin injections to healthcare support workers in community nursing services. The focus was on stakeholder perspectives, including the views of patients and relatives, healthcare support workers, registered nurses, managers and diabetes specialists.

2.2 | Design

A qualitative case study design (Bergen & While, 2000; Yin, 1994) explored insulin administration delegation in adult community nursing teams within three NHS trusts in England. Case study facilitates real-life evaluation and is useful when there is no single outcome measure and where multiple perspectives need to be considered (Yin, 1994). A multiple-case study approach (Yin, 1994) was selected as it enabled a detailed study of insulin delegation within the organizational context. A case was defined as a community health service provider that had training in place for healthcare support workers to provide insulin administration under delegation from a registered nurse.

2.3 | Sampling

Consultation with the Queens Nursing Institute identified organizational variation in the banding of healthcare support workers involved in insulin delegation in NHS trusts. This informed a purposive sample of organizations that delegate to (i) band 3 healthcare assistants, (ii) band 4 associate practitioners or (iii) both band 3 and 4. Pay and conditions in the National Health Service are set out in bands, of which bands 1 to 4 tend to represent ancillary and support roles and band 5 the entry point for a newly qualified registered nurse. To maximize diversity, sites were also selected according to length of established insulin delegation, type of NHS trust and geographical area. The National District Nurse Network facilitated recruitment via an email to members to identify sites willing to participate. Within each case site, a purposive sample of stakeholders was selected according to inclusion criteria set out in Table 1.

2.4 | Data collection

Semi-structured interviews to explore views on delegation of insulin injections were conducted by a research fellow (CS) experienced in undertaking qualitative healthcare research. The interview schedule was developed collaboratively by the research team and the patient

TABLE 1 Participant inclusion criteria.

Participant	Inclusion criteria
Patient (or family member)	≥65 years of age
	Unable to administer own insulin
	Receives care in the community
	Patient living with type 2 diabetes
	Capable of undertaking an interview via telephone
	Family member or carer who is aware that the patient receives insulin injection administered by the community nursing services
Healthcare support worker	Band 3 Healthcare Assistant OR
	Band 4 Associate Practitioner
	Trained to administer insulin under delegation
Registered nurse	Band 5 registered nurse or above
	Plays a role in either delegating to, and/or supervising a non-registered healthcare support worker in their insulin administration
Senior stakeholder	Any manager or senior figure (e.g. Nurse consultant, Diabetes Specialist Nurse, General Practitioner, trust manager) that is closely linked to the service and are aware of the insulin delegation within the team or trust.

interview schedule was piloted with two patient representatives. Topics for patient interviews included: understanding of delegation; advantages and disadvantages; arrangements for insulin injections; recommendations or suggestions. Topics for staff interviews covered: preparation; support; advantages and/or concerns; governance; impact on roles; recommendations or suggestions. Interviews were conducted via telephone or audio-conferencing software and audio recorded via an encrypted digital voice recorder. Encrypted sound files and transcripts were stored within a secure research folder within the University servers. Data collection took place between October 2020 and July 2021. Mean length of interviews was 33 min (range: 9–53 min). Prior to interview, the interviewer ensured interviewees were in a quiet/private space and developed rapport with participants. Staff interviews were usually conducted during working hours. A reflexive journal was kept by the interviewer.

2.5 | Ethical considerations

A key contact within the case sites approached eligible staff and gave out participant information sheets and consent forms. Potential participants contacted the study team to discuss involvement and arrange a mutually convenient interview time. For patients, the key contact approached community nursing staff (registered nurse, healthcare support worker) to identify eligible patients or carers. Community nursing staff approached patients about the project, providing a patient information sheet and consent form. Patients were given a minimum of 48 h to decide if they wanted to participate before contact details were passed, by consent, to the study team. For all participants, informed consent was taken by the researcher prior to interview and a signed consent form returned by post or email. Ethical approval to conduct the study was granted by NHS (London bridge 19/lo/1634) and University ethical committees.

2.6 | Data analysis

Interviews were transcribed verbatim. A reflexive thematic approach (RTA) was adopted (Braun et al., 2019; Braun & Clarke, 2006), which requires a flexible and organic process of analysis, acknowledging the active role of the researcher in knowledge production. Following data familiarization, coding was applied across the data set and initial themes generated inductively for each stakeholder group. By mapping initial themes across all stakeholder groups, central concepts evolved that underpinned patterns in the data; these were named as themes and subthemes. This reflexive process is unlike other forms of thematic analysis where themes are predefined before coding (Byrne, 2022). This approach enabled comparison of the different stakeholder groups and case sites. Participant identifiers (e.g. c2pt2) are as follows: 'c2' represents case site 2 (see Table 1 for further details); 'pt2' represents patient 2. 'RN' represents registered nurse, 'ST' represents senior stakeholder and 'NR' represents non-registered healthcare support work (see Table 1 for further details).

2.7 | Rigour

Two researchers (CS and KS) completed the main analysis using discussion and reflection to achieve a rich interpretation of meaning (as per RTA, Braun et al., 2019) prior to incorporating feedback from the project team and patient and public representatives. Credibility was enhanced by use of direct quotations to illustrate findings and analysis was aided by qualitative software Atlas.TI 8.0. Dependability was achieved through an iterative process of checking author analysis against the transcribed data at different stages. Appendix S1 provides a detailed breakdown of codes, subthemes and themes.

2.7.1 | Reporting method

We have adhered to the Standards for Reporting Qualitative Research (SRQR) guidelines.

3 | FINDINGS

3.1 | Case site characteristics

All sites had similar criteria to select patients suitable for insulin delegation: patients living with type 2 diabetes; those personally unable to self-care and with no family/carer able to administer insulin; blood glucose levels stabilized within a predefined individual target for a period of 2 weeks. Where a patient's blood glucose level subsequently fluctuated, protocol determined that delegation ceased until stable again for 2 weeks. Two different models of assessment of healthcare support workers were used to support this process: (i) the healthcare support worker was assessed as competent to provide injections for a particular patient (site 3) and (ii) healthcare support workers were assessed against insulin regime criteria and not required to be assessed for a particular patient (site 1, site 2). In all three case sites, the number of assessment observations by a registered nurse ranged between 5 and 10 insulin injections per case site criteria. A summary of the three case site characteristics is provided in Table 2.

3.2 | Participant characteristics

Thirty-four interviews were conducted across four stakeholder groups. Eleven interviews were conducted in case site 1, eight in case site 2 and 15 in case site 3. Tables 3 and 4 describe the characteristics of participants within the study.

3.2.1 | Patients and relatives

Seven interviews were conducted, which included five patients and two relatives who spoke about their experiences in relation to their

TABLE 2 Case site characteristics.

Case site	Location and coverage[a]	Insulin delegation inception	Type of service	Banding and job title of healthcare support worker	Training undertaken
1	Southeast of England. Urban city and town, rural town and fringe and rural village	Circa 2008	Tendered service on behalf an acute NHS foundation trust, in partnership with a GP federation	Band 4 Associate practitioner	• Inhouse online training package covering medicine management, diabetes knowledge and insulin injection theory. • Injection training completed face to face. Healthcare support workers are assessed in practice by an allocated registered nurse supervisor, completing a minimum of five injections. • Healthcare support workers are signed off as competent to perform insulin administration regimes (using insulin pens), enables them to give insulin to any eligible patient.
2	Southeast of England. Urban city and town, rural town and fringe, rural village and rural hamlets and isolated dwellings	2013	Community NHS foundation trust	Band 3 Healthcare assistant Band 4 Associate practitioner	• Inhouse training package covering diabetes overview, health promotion, healthy eating, medicines management and insulins. • Training moved online during COVID-19 pandemic, previously, healthcare support worker undertook a 3-day face-to-face course. • Competency and confidence are assessed by a registered nurse or Nurse training practitioner via period of supervision in practice. • Healthcare support workers are assessed on task competencies and assessed for understanding individual patients care plans. Approximately 5–10 insulins are administered under observation and competence is only signed off when both the healthcare support worker and registered nurse are happy.
3	North-central England. Urban major conurbation	2017	Integrated service within NHS foundation trust	Band 3 Healthcare assistant	• Inhouse 2-day training packaged covering diabetes overview, health promotion, healthy eating, medicines management and insulins. • Registered nurses accompany healthcare support worker on course and then become their mentor. • Healthcare support workers are assessed as competent to treat individual patients after completing three to five injections per patient.

[a]Office for National Statistics, rural–urban classification for output areas (2011).

TABLE 3 Patient/Relative demographics.

Group	Case site	Gender	Age	Years diagnosed with diabetes (years)	Injections provided by community nursing service (years)
Patient	2	F	90	10	5
Relative	2	F	92	12	4
Patient	3	F	76	15	10
Patient	3	F	89	2.5	2.5
Relative	3	M	–	–	–
Patient	3	F	82	2	2
Patient	3	F	–	20	20

family member (patient). All patients were female. Mean age of patients was 86 (76–92) years old. All patients had been diagnosed with type 2 diabetes for a mean of 10 (2–20) years. Patients had been receiving insulin injections provided by the community nursing team for a mean of 7 (2–20 years) years.

3.2.2 | Healthcare support workers

Eight interviews were conducted with healthcare support workers, all of whom were female. Two were band 4 associate practitioners. The remaining six were band 3 healthcare assistants. Healthcare support workers had been qualified for a mean of 10 (1–20) years and working within their current role for a mean of 6 (1–20). Healthcare support workers had been providing insulin injections within the community for a mean of 2 (0.5–3) years.

3.2.3 | Registered nurses

Ten interviews were conducted with registered nurses (Band 6 or 7), one of whom was male. Registered nurses had been qualified for a mean of 13 (4–20) years and had been in their current post for a mean of 6 (1–18) years.

3.2.4 | Senior stakeholders

Nine interviews were conducted with senior stakeholders, one of whom was male. Senior stakeholders had been in post for a mean of 8 (1–22) with a mean of 29 (17–35) years' experience in healthcare setting. The range of roles of senior stakeholders is described in Table 4.

3.3 | Themes

Findings are presented under three main themes: (i) Acceptance and confidence, (ii) benefits of insulin delegation and (iii) concerns and coping strategies. Quotations to illustrate themes and subthemes are provided in Table 5. A breakdown of the number of participants reporting each theme is available as a supplementary file (see Appendix S2).

1. *Acceptance and confidence*

a) Acceptance of delegation.

Participants from all stakeholder groups accepted the delegation of insulin injections to healthcare support workers for patients with type 2 diabetes with stable blood glucose levels. Acceptance among patients and relatives was complicated by a lack of awareness of the difference between healthcare support workers and registered nurses. Staff confirmed that while all patients consented to be given injections by a healthcare support worker, awareness of the distinction between registered and non-registered healthcare workers was low among patients, despite different uniforms.

Acceptance by staff was motivated by the view that delegation was essential for maintaining services. Insulin administration was reported to make up a large proportion of the community nursing case load within case sites and current staffing levels were insufficient to meet demand, especially during peak periods, without delegating work to healthcare support workers.

Acceptance of, and confidence in the delegation of insulin injections, was dependent on adequate training, processes for assessing competencies and governance procedures, as detailed below.

b) Content and delivery of training.

Acceptance for all stakeholders was conditional on healthcare support workers receiving appropriate training to give insulin injections. While the majority of staff were happy with the content and structure of training, some thought it could be improved by broadening the content, changing its delivery or providing more take-home materials. All staff groups agreed that healthcare support workers require understanding about diabetes and its management if they were to pick up on a deterioration in a patient's condition or notice wider healthcare needs. Training that was highly rated was comprehensive in nature, included information about diabetes, the importance of diet, practicing injection technique, face-to-face tuition, and had multi-professional input (e.g. from diabetes specialists and consultants).

TABLE 4 Job titles, gender and years in current post of staff participants.

Job title	Case site	Gender	Years in post
Healthcare support workers			
Associate Practitioners	1	F	1.5
Associate Practitioners	1	F	1
Healthcare Assistant	2	F	1
Healthcare Assistant	2	F	2
Healthcare Assistant	3	F	2
Healthcare Assistant	3	F	12
Healthcare Assistant	3	F	6
Healthcare Assistant	3	F	20
Registered nurse			
Community night nurse	1	F	10
Community matron	1	M	18
Community matron	1	F	2
District Nurse team lead	1	F	2
District Nurse clinical lead	1	F	0.5
Clinical nurse Lead	2	F	4
Clinical nurse lead	2	F	3
District Nurse team lead	3	F	18
District Nurse deputy team lead	3	F	0.5
District Nurse deputy team lead	3	F	3
Senior stakeholders			
Diabetes Specialist Nurse	1	F	11
General Practitioner	1	M	22
Chief Nurse	1	F	2
Nurse Director-community services	1	F	1.5
Nurse consultant for diabetes-community services	2	F	3
Diabetes team lead and community specialist Nurse	2	F	4
Head of integrated community care	3	F	6
Community service learning and development lead	3	F	7
Diabetes Specialist Nurse	3	F	18

The process of developing training was reported as time consuming in the initial stage and there were logistical hurdles in releasing healthcare support workers to attend. Due to COVID-19, online training had replaced face-to-face training in two sites, with the advantage of improving access across geographical areas and allowing staff to learn at their own pace. However, online training was less well received (by some healthcare support workers, senior stakeholders and registered nurses) as it reduced opportunities to ask questions and check understanding. One stakeholder was concerned that online delivery had reduced training on different insulin-injection pen devices and prevented face-to-face introductions to diabetes specialist nurses.

c) Developing confidence and assessment of competence.

i) Registered nurses' confidence in delegation.

Confidence in delegation was influenced in some cases by the extent to which registered nurses knew and trusted the healthcare support worker and whether the registered nurse had personally assessed their competence. This was important as registered nurses held responsibility for the delegated task. Not knowing the healthcare support worker, their level of understanding of diabetes or ability to identify and report problems, was a concern when healthcare support worker joined from outside of the team. A lack of training for registered nurses on how to delegate or mentor was reported. Where healthcare support workers and registered nurse mentors undertook training together this was said to boost confidence by creating greater team bonding and mutual understanding of roles and skills.

ii) Healthcare support worker confidence and mentorship.

Many healthcare support workers recalled being apprehensive about giving insulin. Some were surprised at the scope of their clinical role, particularly when compared to experiences in the acute care setting where healthcare support workers held less responsibility. Regular contact with registered nurses and time for supervised practice during assessment was important to healthcare support worker confidence and helped overcome initial nerves. Mentorship during the initial stage of delegation was considered crucial for developing confidence and embedding knowledge into practice.

iii) Teamwork and senior level confidence.

Having a cohesive approach within teams, and close relationships between registered nurses and healthcare support workers, seemed to improve confidence and mutual support. Positive relationships within teams fostered a sense of mutual respect, encouraging healthcare support workers to raise queries, make suggestions for change and ask questions. To enable this, it was important that registered nurses were seen as approachable and accessible. In contrast, where opportunities to form relationships between nurse mentors and healthcare support workers were lacking, due to high staff turnover or allocation of an assessor outside of the day-to-day team, there appeared to be less bonding and less confidence, leading to reluctance to delegate work.

Stakeholders involved in setting up insulin delegation noted that considerable time (over 3 years in one case) was needed to gain support from staff and senior clinicians within the trust. Within the integrated trust, a lack of understanding of community services among senior management in secondary care was initially reported. This resulted in a risk averse approach at first, however, mutual understanding improved as services became further integrated. Addressing the fears and concerns of all stakeholder groups and providing evidence that delegation was safe and that care was not being compromised were important steps in gaining acceptance.

d) Governance.

Acceptance of insulin delegation by stakeholders was dependent upon an agreed robust system of governance being in place within the organization. In addition to systems for training and assessing the competencies of healthcare support workers, defined

TABLE 5 Representative participant quotes.

Theme	Subtheme		Quote
Acceptance and confidence	Acceptance		*"I know probably more than one that's a staff Nurse and then there's one that she is not a proper Nurse, but she can give injections and i have had to sign a sheet to say that it's alright for her to come in and do it."* (*C3P3*)
	Content and delivery of training		*"I do not think I would mind, if they have been trained to do it."* (*C2P1*) *"I'm quite happy as a registered nurse to delegate these tasks as long as I'm happy that the training is rigorous, and that the competency assessment is rigorous."* (*C2rn1*) *"They scrutinized everything. We went through dieticians so we could also give advice on what the patient should and should not eat. The technique on how to give the insulin, where to give the insulin, how to give the insulin, how to draw it up and administer it, to check the blood sugars prior, who to contact if you are concerned or if you just need further advice. They went through everything and then we had like a dummy piece of skin [] making sure you have got the technique right, that you went in far enough, that you did not go into a muscle, and that you had to count to ten afterwards, you did not just retract the needle. So, yes, it was really, really in depth."* (*c3nr4*) *"It's online training; you can look up the answers, how much do you actually take in?"* (*c1rn1*) *"I think maybe for the people that are less confident, a face-to-face approach is better [than online] because they can ask those questions straightaway [], but I would not say that it's been of any detriment to my support workers."* (*c3rn2*)
	Developing confidence and assessment of competencies	Registered nurses' confidence in delegation	*"I'm happy with it, as long as I know that I've done their induction, their training and signed their competencies off, and I know them personally their abilities. So I need to know all that before I feel happy about it. For instance, we have an AP that I took through our AP training, so I know her inside out, I've signed all her competencies or most of them myself as I've taken her through the course, whereas we have just taken a new AP [] and all that's been required for her is to do the insulin online training and go out to somebody to do five competencies to make sure she's able to do them. But I do not know her well enough; does she understand diabetes well enough to know should there be a problem?"* (*c1rn1*) *"The training is for the support workers, but you have to have a mentor with you and the mentor does the exact training [] we sat in a classroom, went through everything, workbooks together so that we both had a good understanding of what was expected and then once they completed that training we went out and saw patients together."* (*c3rn1*)
		Healthcare support worker confidence	*"What did surprise me, in the hospital when you give insulin, you always have two registered nurses to check it. So, I found it really strange going into the community and obviously it's just you, it's you on your own, going out doing it."* (*c1nr2*) *"I felt nervous because it was something new that I'd got to learn and things, but I did feel more comfortable about it because the Nurse has to come out with me three times to get signed off before I go in on my own."* (*c3nr3*) *"So, you do get taught this stuff, but it's a lot of information overload really during the courses. I feel I've learned most of it from going out with the Nurses, hands-on, practical sides, where I learnt most of my skill."* (*c2nr2*)
		Teamwork and senior level confidence	*"I've got a very good rapport with all of my colleagues on the team. I think it's a really nice team to be a part of, actually. They were all really helpful, useful, any questions I had, which I always have, it was no trouble to answer them. It wasn't 'for goodness' sake now, just hurry up and get it.' they were really patient with me, and because they knew I was apprehensive about administering high doses of medication, they knew that she just needs a bit of reassurance and that support."* (*c2nr2*) *"I did not really form a bond with the people that signed me off, particularly, because they were not the ones I was with all the time."* (*c1nr1*) *"What we came into was an acute nursing hierarchy, so developing their understanding of community and about how we do things differently. So the insulin one was a really good example of that. There was a lot of twitchiness internally about that because they could not imagine that that's what you'd expect a healthcare assistant to do on a ward."* (*c3st1*) *"There was a lot of resistance to it, not just from the support workers or nursing groups but from middle leadership. I do not think resistance is the right word, actually. I think it was more a scepticism, how would it work in practice? So it was very much push, push, push. And then once it started, they did the evaluation, after three months I think it was, and that is when other people came on board [] and then everybody came on board and thought actually 'Oh yeah, this is good'. So it very much needed a driving, pushing force behind it."* (*c3st2*)
	Governance		*"The development of non-registered roles fully relies on good governance. So, a commitment from an organization that this is the right strategic way forward for a service, that there is adequate training and supervision and then the governance."* (*c1st2*) *"There's a range that she follows. If she takes the blood sugars of that patient that morning, if they are outside of that range, it's best practice that she rings us first before she gives the insulin, just because obviously that range has been set for a reason for that patient. So if something is out of that range, we want to know and then decide whether or not we think it's safe for her to give it."* (*c3rn3*) *"We have ranges, [] then I know I have to ring somebody which could be my manager, my team leader or just another registered nurse [] so I'm very well supported and safety-netted."* (*c3nr2*) *"Our non-registrants are really good at communicating with us. If they have got any concerns at all they'll be straight on the phone to us. So all of the registrants have very much the confidence in giving that work to the non-registrants because we know that if there are any concerns they will contact us. So certainly, from a safety aspect, we are confident."* (*c2rn1*)
Benefits of insulin delegation	Benefits to patients	Convenience of service	*"I do not have to worry about it. The thing is I cannot walk, I cannot get around and it makes it easier for me."* (*c2pt1*)
		Timely access to medicines	*"From the perspective of the elderly person who is getting it or the housebound person that is getting those injections done, there is the potential that they are going to get it done in a more timely way. That is, it is not going to be wrapped around whatever other things are on the caseload for the District Nurse that day."* (*c1st4*)
		Continuity of care	*"It's like continuous care. The patients are getting to know the similar faces, so they feel comfortable who is doing it. It just makes it like a good relationship really with your patient because they feel comfortable with the Nurses and support workers knowing that they are coming in and out to do their insulin. Just making the patient feel comfortable really."* (*c3nr3*)
		Increased relationship building with the nursing team	*"For patients, I've got a bit more time for them, and I'm not rushing around like the staff Nurses, so I've got that bit more time so the patient then opens up about other problems that I can pick up on [] they might say to you, "oh, by the way, [] I've got a sore ear," so then that goes onto the next where you are doing then checking the sacrum or the skin integrity, and then you are looking at the healthcare, the social side of it, or are they eating enough, are they not drinking properly, have they got their correct pressure equipment in. So then there's a full list that I can pick up on. A staff Nurse might just go in and just give the insulin and not have that time to ask those questions like I would."* (*c3nr4*)
		Improved health outcomes	*"I could not get it [blood glucose level] down myself and I wanted cataracts taking out of my eyes and I could not have it because my blood was too high, but I have had one done now."* (*c3pt4*)

TABLE 5 (Continued)

Theme	Subtheme		Quote
	Benefits to healthcare support worker	Development of new skills	*"I'm very into learning new things and anything that I can add to my job role. "(c3nr2)*
		Increasing job variety	*"For the non-registrants it gives them another skill to add to them and it makes their work a little bit more varied, so it gives them a little bit more quality of work really." (c2rn1)*
		Increased confidence	*"You're not just putting a bandage on, you are administering medication, it's the only medication that I'm allowed to administer, so it feels more serious. It makes me feel like more of a Nurse in some ways and that definitely makes me feel like, 'oh, i could be a Nurse,' yes." (c2nr1)*
		Career progression	*"We were really keen that we put a good career structure in place and a very transparent career structure for staff that they can see how they can stay and progress within the service." (c3st1)*
		Job satisfaction	*"If you work within a team, you help each other. It helps the staff Nurses, it helps the team, and it builds your confidence up knowing you are doing something to help the team, you are not just doing a simple task, you are actually doing something more and helping the team out." (c3nr4)* *"Feedback from the support workers is they love it. They want to do more. So I think it's motivational, gives people job satisfaction." (c3st2)*
		Valued team member	*"They obviously feel more valuable in the team because they are able to do more advanced skills than just being a healthcare assistant going to slap a dressing on, so they themselves gain confidence." (c1st3)*
	Benefits for registered nurses and the nursing service	Improved service capacity	*"I think our caseload of our insulin-dependent diabetics is growing, [insulin delegation] means that there are more of us that can go out and administer the insulin. [] so I think it would help to have more of us trained because there are going to be coming more diabetics, [] we have got more on our caseload probably than when I started a year ago." (c1nr2)* *"Just to share out the workload really because we have got quite a busy caseload [] so the Nurses are not overloaded with loads of insulins in the morning." (c3nr3)*
		Enhanced team flexibility	*"It frees up so much time for your qualified staff to go and do other issues, deal with emergencies, more complex things, so yes, there are major advantages to it." (c1st1)* *"So, we already have this workforce, and, for some of them, they might have an appetite to do more within their role. It might encourage people to come into the caring profession. And I think by developing roles it makes it more interesting, it might help with retention, and when you do this sort of thing it is also a steppingstone, if you like, into the nursing profession." (c1st2)*
		Team cohesion	*"There's a lot better team dynamics, very supportive with each other." (c1rn1)*
Concerns and coping strategies	Patient safety and missed holistic care		*"It's not the insulin administration per se, if you have got something that says, "this is what you do," that's not the complex bit. The complex bit is "how are you? Are you feeling okay? What are your blood sugar levels? If they are high or low, what do i do, what's the plan?" (c1st1)* *"I've had an incident before where the patient's been not very well when I've gone in, and I've done all their observations, all their blood sugars, and everything seems normal, but to me something wasn't right [] and so before I gave that insulin I phoned for backup and just asked my manager [] to come and double-check everything, that I wasn't missing anything, and in the end it was just a urine infection." (c3nr4)* *"I know it is written into our guidance that a healthcare assistant should not do a full 7-day stretch of the same patient [] There is always that risk when you have got someone who you go to every day, you become blinded to a slight change that someone who's never met that patient before going in might spot. There's a risk of becoming habitualised in your approach, is not there, and then missing the obvious change." (c3st1)* *"My only concern is that sometimes the delegation is not always done to the patients that are the right patients for the non-registered, so there is always that risk that whoever is doing the delegation work may consider somebody to be stable that is not stable [] particularly over weekends [] up in rural areas where during the week you may have two community teams in two geographical areas, at weekends it becomes one team, so that becomes more challenging." (c2st1)* *"I think the registered nurses are struggling because they are reluctant to delegate these tasks when they find these patients really, really complex themselves because the complexity of patients is increasing. You cannot delegate somebody who's not stable to an unregistered member of staff and because those numbers are increasing, that puts pressure on the registered nurses" (c2st2).*
	Registered nurse diabetes knowledge and involvement of diabetes specialist service		*"I did an audit a couple of years ago on the qualified staff in the trust and when was the last time they had any diabetes education? [] The higher up the chain you went, some people had not had it for four, five plus years. And these are the people who are being delegated as mentors to teach the unregistered healthcare assistants to deliver insulin. It was a little bit scary I've got to admit." (c2st2)* *"In the diabetic team within the [trust], there used to be far more Nurses there so if you did have a query – not at night time – there was capacity to ring up and consult, whereas their numbers appear to have dropped hugely so the capacity wasn't there for that support." (c1rn4)* *"We need to start embedding diabetes specialist nursing into our community workforce." (c2st1)*
	Remuneration and banding		*"I'm very happy to take on extra training as and when needed, but I do think they need to remember well I've not been to university, I've not done three years of training [] I think for anyone to do any jobs these days it has to be reflected in pay and appreciation and if they want us to do more and more things like that then it would be nice to have it built in to go along with it." (c3nr1)* *"You're then asking them to do a task that is for a qualified Nurse, and for me, it's more about pay for them really. You're asking them to do the work of a registered nurses, but you are only paying them a band 3 or band 4." (c1rn2)* *"I think very soon we are not going to need Nurses [laughs] if we keep passing everything down, and we have got Nurse training for a reason." (c1st3)*

parameters for delegation were important (often set out within policy), such as requiring contact with a registered nurse if a patients glucose level was out of range. Working to protocol gave healthcare support workers confidence because they felt supported in deferring decisions to a registered nurse if it was beyond their level of competence. It was equally important to registered nurses and senior stakeholders that they could trust healthcare support workers to comply with this important patient safety procedure.

2. *Benefits of the delegation of insulin administration*

Benefits of insulin delegation were identified under the following categories: benefits to patients, benefits to healthcare support workers, benefits to registered nurses and service benefits.

a) Benefits to patients.

Reported patient benefits included: convenience of service, timely access to medicines, continuity of care, enhanced relationships with the nursing team and improved health outcomes.

All patients and carers were happy with the care received. The few patients who were aware that care was delegated thought that it saved time for registered nurses. Other benefits were attributed to receiving insulin injections from the community team rather than specifically from healthcare support workers. Patients reported peace of mind that insulin injections would be given on time and liked the convenience of not needing to leave the house. Patients also enjoyed getting to know the community nursing team. Benefits for care and health outcomes were reported, for example patients were reminded to take their regular medication and additional health concerns were identified as they arose, providing holistic care and preventing deterioration of health conditions. One patient reported that since the community nursing team had provided her injections, her blood glucose levels were better controlled, which allowed her to have cataract surgery.

All staff groups reported that patients benefited from continuity of care and seeing regular faces, building trusting relationships with the nursing team. Delegation helped improve the timeliness of insulin injections. The process of providing care was reported by patients to be the same whether provided by a registered nurse or healthcare support worker, although some healthcare support workers spent more time with patients and were considered less rushed than registered nurses. Knowing the patient and gaining wider knowledge about different health conditions enabled some healthcare support workers to include a fuller patient assessment in the visit, to identify changes in the patients' condition, prevent further deterioration and provide holistic care.

b) Benefits to healthcare support worker.

All staff groups were able to identify benefits for healthcare support workers, including enjoying developing new skills, increasing job variety, increasing confidence, career progression, job satisfaction and feeling valued as a team member.

Accepting the responsibility for insulin injections boosted healthcare support worker confidence in undertaking what were traditionally considered registered nursing tasks. Developing additional skills and knowledge expanded future job opportunities and motivation for career development as nurse associates or registered nurses. Cases were reported where healthcare support workers had gone on to train as registered nurses. From the perspective of senior managers, delegation aligned with career pathway development and facilitated a supportive culture for service innovation. registered nurses and senior managers reported that healthcare support workers enjoyed helping with insulin injections and felt more valued as team members, which was viewed as good for team cohesion and retention. This was echoed by healthcare support workers who felt a sense of pride and willingness to support the team.

c) Benefits for registered nurses and the nursing service.

There were clear benefits reported for the service in terms of improving service capacity and efficiency to meet demand, enhanced team flexibility and team cohesion. Improving service capacity and efficiency was considered a key driving force by all stakeholders. Although it was difficult to isolate benefits for registered nurses from service benefits, there was agreement by all staff groups that delegating insulins for stable patients helped alleviate workload pressure on registered nurses, especially during busy periods, such as time-sensitive morning insulin injections. With the prevalence of diabetes and its associated conditions predicted to increase, delegation was expected to continue in the future.

Delegation enabled greater team flexibility and responsiveness, as registered nurses had more time for emergency cases or more complex patient care, such as blocked catheters, patient assessment and palliative care. Team dynamics and team cohesion were reported to be enhanced due to the closer team working, support and communication required for insulin delegation.

The COVID-19 pandemic placed additional demands on services due to: time required for personal protective equipment, staff absence and a surge in critical cases as COVID patients were discharged from hospital into the community. Insulin delegation enabled services to be flexible, resilient and adapt to changing circumstances. There was reported to be a more accepting attitude towards delegation during the pandemic and there were plans to extend insulin delegations to care homes and rest homes. For senior stakeholders, upskilling and developing healthcare support worker careers helped streamline service development and sustainability, as well as supporting healthcare support worker retention within trusts.

3. *Concerns and coping strategies*

Concerns are reported under subthemes: (i) patient safety and missed holistic care of patients, (ii) registered nurse knowledge of diabetes and (iii) remuneration and task shifting. In some cases, there were strategies in place to mitigate these concerns and in others, the concerns were hypothesized and had yet to become a problem.

a) Patient safety and missed holistic care.

The ability of healthcare support workers to identify a deterioration in a patient's condition, or to notice wider healthcare needs, was questioned by some staff and family members. However, examples were given where healthcare support workers had identified wider

healthcare needs and it was suggested they may have more time with patients than registered nurses to notice change. Measures considered key to maintaining patient safety included holding daily handovers, having regular registered nurse contact with patients, agreeing patient inclusion criteria and monitoring care provision. It was policy, for example, for there to be rotation of personnel visiting each patient, regardless of job title and skill level, to increase the chance of staff in the team noticing a change in the patient's condition. However, adherence to these practices was reported by some to be challenging during times of high workload pressure (such as weekends), staff shortages or where large geographical areas needed to be covered. In addition, there were concerns that the increasing complexity of the registered nurse caseload could impact on safe and effective delegation. Regular review of caseload was recommended to prevent these concerns.

b) Registered nurse's diabetes knowledge and involvement of diabetes specialist service.

Several registered nurses and senior stakeholders, in particular specialists in diabetes, highlighted the need to update and upskill registered nurses in their knowledge of diabetes and insulins. Where patient safety incidents had been reported in relation to insulins, these were reported to be due to registered nurse error. The basic training that registered nurses receive about diabetes was considered minimal and out of line with the current demands in the community setting.

Involvement of diabetes specialist services was viewed as important support for teams and for developing robust policy, training, undertaking patient reviews and maintaining patient safety within trusts. However, access to specialist diabetes services was variable and there were areas where these services had not been commissioned. A shortage of diabetes specialists within one trust resulted in a backlog of patients waiting for assessment from general practitioners who were reported to be reluctant to do this, despite it being their responsibility. This had delayed delegation. The diabetes specialist stakeholders argued that more upskilling of registered nurses and general practitioners in diabetes knowledge was required.

c) Remuneration and task shifting.

Concerns were raised by all staff groups about the balance of pay for healthcare support workers in recognition of additional responsibilities such as insulin administration. While healthcare support workers were happy to take on some additional roles without additional pay, it was stressed that they remain unregistered healthcare workers and their roles should match the level of training they have completed. Insulin delegation is part of an increasing package of skills that healthcare support workers have, for example, some were providing anticoagulant injections (Dalteparin), leg ulcer and wound care and phlebotomy. The pay banding of healthcare support workers involved in insulin delegation depended on individual trust decisions about levels of competence and alignment with other roles and responsibilities (Table 1). New positions, such as nursing associates and physicians associates, were expected to present additional complexity in the future.

With increasing 'task shifting' from registered nurses to healthcare support workers, there were some concerns about the erosion and potential loss of registered nurse roles. Some registered nurses were concerned about litigation should an error be made by a healthcare support worker. However, delegation was understood within the wider context of role boundary shifting across the NHS leading to all professions taking on additional responsibilities, such as nurses adopting independent prescribing. This was largely seen as a necessary shift, upskilling all staff to create a more adaptive and responsive workforce that is better able to work across traditional boundaries. The necessity for change was driven by patient demand and a shortage of community Nurses.

4 | DISCUSSION

The study aimed to explore stakeholder views about the benefits and/or disadvantages of insulin injection delegated to healthcare support workers in community nursing services. The delegation of insulin injections was found to be working well and was an embedded aspect of the community nursing services studied in this project. Staff in all three sites embraced delegation and reported that the efficient running of the service was reliant on healthcare support workers providing insulin injections. While patients were happy with the service provided, more could be done to revisit patient and family awareness of the delegation agreement.

Acceptance was conditional on appropriate training and governance being in place and reflects an understanding by all stakeholders of the high-risk nature of giving insulin. It has been argued that the level of training and governance for delegation of medicines administration should reflect the level of complexity and decision-making required (De Vliegher et al., 2016; Dupler et al., 2015). Previous research indicates that delegation of medicines administration is hampered where there is poor clarity about what can be delegated, inconsistent governance and variations in educational preparation (Shore et al., 2021). Our findings reiterate Royal College of Nursing (2017) guidance that, for safe and effective delegation, registered nurses need reassurance that healthcare support workers are appropriately trained and are confident and competent in delivering delegated care.

Feedback about the level of training received by healthcare support workers was mixed as content and delivery varied, influencing confidence in delegation. Broad knowledge about diabetes and the role of diet was considered necessary to enable healthcare support workers to identify patient healthcare issues. There were concerns that patient safety may be at risk if healthcare support workers miss changes to a patients' condition that a registered nurse would identify. These potential missed care opportunities have also been raised in relation to delegation in acute care (Bittner & Gravlin, 2009). However, evidence was identified that, given broad training and experience, healthcare support workers do identify and raise concerns about patients. Negative feedback about recently introduced online training suggests refinement is required, and reliance on online

training alone was not considered appropriate. Noted benefits to online training in community services include its flexibility, reach and accessibility, while known drawbacks include reduced hands-on learning opportunities (Uprichard, 2020). Further research to explore approaches to training would be of merit (Richmond et al., 2017). A mixed approach including reflective practice and multi-professional input is recommended (The Health Foundation, 2012), as supported by our findings. Overall, there was resistance to a 'task-based' attitude in favour of a more rounded approach to training that recognizes and respects the complex roles of healthcare support workers in community nursing services.

Clear lines of accountability prevent blurred boundaries between registered nurse and healthcare support worker roles and are important to establish as more responsibilities are delegated (Kendall, 2018; Wilberforce et al., 2017). Our research reiterates the role of assessment, monitoring and governance processes in building stakeholder confidence in delegation, reducing healthcare support worker anxiety around giving insulin injections and registered nurses concerns about litigation. Clear governance helped strengthen working relationships and alleviate concerns relating to patient safety and holistic patient care. It has been suggested that confidence in delegation is particularly important in community settings where staff are expected to work alone and therefore more autonomously than in acute sector (Kendall, 2018), as was noted by participants in this study. Registered nurses were more confident when they knew and trusted the healthcare support worker, which was facilitated by having been involved in their training or acting as a mentor. Strong relationships, good communication and a positive attitude are also key to building confidence in delegation in the acute sector (Bittner & Gravlin, 2009; Campbell et al., 2020). Our findings align with a review of medicine delegation in community settings that found the relationship between the delegator and delegatee to be central to developing confidence (Shore et al., 2021). There are also similarities with the development of non-medical prescribing, where doctors' confidence grew where they knew and were familiar with the competencies of a non-medical prescriber (Stenner et al., 2009). This indicates that the process of developing mutual trust and understanding is one of many factors that need to be considered in relation to task shifting (van Schalkwyk et al., 2020).

Procedures and protocols for insulin delegation, such as maintaining regular contact between registered nurses and patients, were identified as crucial to safety and confidence in delegation. This is echoed by two small-scale insulin delegation pilots in the UK (Cook, 2015; Owen, 2009). While insulin delegation was reported to function safely in sites, there were concerns over adherence under times of stress and staff shortage. Incidents have been reported in the United States where medications were administered by healthcare support workers in ways that contravened regulations (Budden, 2012). However, these issues are not specific to the delegation to healthcare support workers and reflect wider patient safety issues inherent in systems under stress where Nurse rationing of care occurs (Mandal et al., 2019). Medication error in community services is under-researched (Elliott et al., 2016), however, according to managers in case sites, more insulin-related patient safety incidents are reported by registered nurses than by healthcare support workers. This is another area in need of further research.

4.1 | Benefits of the delegation of insulin administration

In line with delegation of medicines administration internationally (Shore et al., 2021), insulin delegation was primarily driven by increased service demand, and the principal benefits related to increased service capacity. However, a surprising range of additional benefits were reported for patients, healthcare support workers, the community nursing teams and service provision.

In this and previous work (Cook, 2015; Gregory, 2019) insulin delegation was reported to improve timeliness of insulin administration and prevent missed or delayed care, particularly during busy periods. Inappropriate insulin dose timing is associated with increases in hypoglycaemic events, and patient worry about the recurrence of these events (Schaper et al., 2017). It was reassuring to people with diabetes in this study that they received their medication on time. Other benefits, such as continuity and enhanced relationships with staff, are known to be important to patients in community settings (Strandås & Bondas, 2018) and relate to the three characteristics of good community care: caring for the whole person, continuity of care and personal manner of staff (Maybin et al., 2016). The low level of patient awareness of delegation and which grade of staff is giving their insulin is a concern that requires further investigation.

Importantly in these times of crisis, upskilling the pool of staff that can administer insulin and provide diabetes care was reported to increase team responsiveness and flexibility during times of high demand. Role expansion in multi-disciplinary teams has been supported in the UK by NHS policy such as the NHS Five Year Forward View (Care Quality Commission et al., 2015) and internationally, the Global Strategy on Human Resources for Health: Workforce 2030 (World Health Organization, 2015). Given trends towards increasing complexity of care in community services (Maybin et al., 2016), increasing time for registered nurses to provide care to patients with complex needs is vital. Equally important is the need to upskill and support community-based nurses in their knowledge and practice of insulin therapy (Robb et al., 2017). The involvement of diabetes specialist nurses within integrated services can improve diabetes management and quality of care for patients in the community (Riordan et al., 2017). The finding that specialist diabetes support was patchy reflects a general decline in commissioning of diabetes specialist services in the UK (Diabetes UK, 2016b) and is a concern given that this support was considered key to maintaining safe standards in insulin administration (Elliott et al., 2016).

Finally, initiatives that promote career development and job satisfaction for healthcare support workers were welcome (Spilsbury et al., 2013), especially given workforce shortages in the UK and elsewhere (Diabetes UK, 2016b; Kessler et al., 2010). Findings are in line with previous reported benefits of insulin delegation for healthcare

support worker confidence, job satisfaction, career progression and team working (Cook, 2015; Dutton et al., 2018; Gregory, 2019; Owen, 2009). These findings are encouraging as reviews highlight the importance of regulation and career progression for support workers (Department of Health, 2013; Willis, 2015). It is heartening that undertaking insulin injections inspired individuals to progress in their career, however, our findings also highlight the need to balance increased responsibility against pay to increase acceptability. Patient safety is also known to be sensitive to nurse–patient ratios in primary care (Pérez-Francisco et al., 2020) and mortality to healthcare support workers in secondary care (Griffiths et al., 2016). In addition, inconsistencies in banding, training or role definition can cause difficult when staff wish to transfer between organizations or sectors (Spilsbury et al., 2013).

4.2 | Limitations

The findings are limited to the views of a particular population at a set moment of time and focus on one of many aspects of care provided by healthcare support workers. The range of participants interviewed across three case sites strengthens the applicability of findings to other settings. While the sample size was sufficient to produce data saturation, a notable weakness of the study was in recruiting patients. The original intention to conduct interviews in patient's homes was amended due to COVID-19 restrictions, as a result, fewer patients were able to participate. In person interviews may have resulted in better rapport with patients, however, telephone interviews were considered the best alternative to mitigate the COVID-19 risks to older patients and researchers at the time. Selection bias may have occurred as community nursing staff excluded patients deemed incapable of taking part in a telephone interview. This approach to recruitment via a gatekeeper internal to the community nursing service could be reassessed in future research. Additionally, staff may have been reluctant to critique the service they are employed by.

5 | CONCLUSION

This is the first independent research on delegation of insulin injections that the authors are aware of. Stakeholders accepted the delegation of insulin injections and the way it was currently governed. Findings highlighted areas of tension where a careful balance is required to maintain acceptance and standards of patient care. It is advisable that workload balance and skills mix within community nursing teams is regularly monitored to maintain patient safety, especially with the predicted increase in patient demand and complexity. When managed effectively, findings suggest that delegation of insulin injections has many benefits for patient care, job satisfaction for healthcare support workers, flexible team working and increased service capacity within teams.

AUTHOR CONTRIBUTIONS

Karen Stenner was involved in conceptualization, methodology, formal analysis, writing original draft preparation, supervision, project management and funding acquisition. **Colin Shore** was involved in investigation, formal analysis and writing—review and editing. **Jill Maben** was involved in conceptualization, methodology, supervision, writing—review and editing and funding acquisition. **Freda Mould**, **Kirsty Winkley and Angela Cook** were involved in conceptualization, methodology, writing—review and editing and funding acquisition.

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CONFLICT OF INTEREST STATEMENT

No conflict of interest to declare.

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DATA AVAILABILITY STATEMENT

Data available on request due to privacy/ethical restrictions.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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