

**A mixed method investigation of
community pharmacists' delivery of
palliative care services**

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Introduction

Community pharmacists are healthcare professionals at the heart of the community who provide access to medicines and healthcare advice without an appointment. Greater involvement by community pharmacists could support the increasing number of people with palliative care needs due to changes in life expectancy and an increasing number of deaths at home or in care homes. However, little is known about the community pharmacist's role in palliative care and those factors that facilitate or inhibit their involvement. This study investigates the community pharmacist's involvement in palliative care to make recommendations to those commissioning palliative and end-of-life services.

This study was conducted in Sheffield, England where the researcher works as a palliative care pharmacist at a hospice. Sheffield has a higher than England average deaths in hospital rather than at home or in a care home and a good coverage of community pharmacies across the city, some of which provide enhanced access to palliative care medicines towards the end-of-life.

A mixed methods study was undertaken to collect quantitative data (prescription data and a customer survey) as well as qualitative data (healthcare professionals' views and experiences) to investigate the community pharmacist's role in palliative care. Patient's views and experiences were not sought in this study due to ethical permission constraints and difficulties in obtaining patient views through contact at a community pharmacy. Patient carers often manage medications for patients as they progress towards the end-of-life⁽¹⁾ and patients may be too unwell to visit a pharmacy or undertake surveys.

Background

Increased life expectancy will expand the requirement for palliative care with predictions suggesting End of Life Care (EOLC) provision in the community and care homes needs to double by 2040⁽²⁾. The NHS England Five Year Forward View states that EOLC will be increasingly provided in community settings⁽³⁾. However two in five Sustainability and Transformation Plans (STPs) submitted to NHS England and NHS Improvement in 2016 on modernizing local health services make no mention of EOLC or how local organisations plan to improve it⁽⁴⁾.

Community pharmacies are often open long hours and at weekends, are convenient for those that cannot easily access other health services and are well known for their wide range of services for patients and carers. Despite being easily accessible^(5,6), and having a relationship with patients, families and carers⁽⁷⁾ there is limited evidence supporting the community pharmacists' role in palliative care and they are

often not considered part of the primary care interdisciplinary team⁽⁸⁾. Although it has been suggested that community pharmacists should have specialist expertise in palliative care and provide prompt access to palliative medicines^(9,10) it is unclear whether this is being achieved.

Patients with progressive chronic illnesses may have an uncertain disease trajectory⁽¹¹⁾ which means it may be difficult to predict when they will need end-of-life medicines for symptom management. The unpredictable nature of this demand will mean that obtaining urgent timely medicines in the community will be paramount to avoid a hospital admission near the end-of-life. However not all community pharmacies keep palliative medicines for EOLC in their pharmacy and information on which pharmacies keep these medicines is not available via NHS choices or NHS 111. This can mean that patients and carers cannot access these medicines when they need them. Local commissioning variations mean that healthcare professionals are also uncertain of how to access these medications.

Sheffield community pharmacies can participate in a Locally Commissioned Service (LCS) to provide access to palliative medicines with 19 community pharmacies signed up to take part in the service. The service is not advertised in the local press, on the NHS choices website or promoted within the local palliative directory so it is not clear whether patients and carers are aware the service exists or can access medications when they need them.

Research suggests that incorrectly written or illegible prescriptions impinge on the pharmacists' delivery of palliative care services⁽¹²⁾ and prescriptions that do not meet the legal requirements cause ethical dilemmas⁽¹³⁾ particularly out of hours when GP surgeries are closed. In an unpublished audit of 850 Controlled Drug (CD) prescriptions in Scotland, one in eight palliative prescriptions contained a prescribing error and half of these were for injectable products⁽¹⁴⁾. Lucey and colleagues found that nearly a third of palliative care prescriptions were written incorrectly in their systems analysis of community prescribing in a palliative setting in Dublin, Ireland⁽¹²⁾.

Lack of access to patient clinical records has previously been identified as a barrier to the community pharmacist's input in palliative care^(13,15,16). Community pharmacies now have access to the patient's Summary Care Record (SCR) which provides an electronic summary of important patient information from the GP record including medicines, allergies and adverse reactions. Sheffield pharmacies were some of the first pharmacies in England to have access to the SCR⁽¹⁷⁾. It is unclear whether access to SCR can support community pharmacists with queries on palliative care prescriptions.

In summary, there is a lack of research and understanding of how community pharmacists contribute to and collaborate in the care of palliative care patients and

their carers within the primary healthcare team in addition to their role in providing timely access to palliative medicines.

Aims and Objectives

The aim of this study was to investigate the delivery of palliative care services by community pharmacists in Sheffield to make recommendations to commissioners to improve local services.

This was a mixed methods study conducted in two phases; phase 1 collected quantitative data from community pharmacies and in phase 2 interviews were conducted with community pharmacists and other healthcare professionals. The specific objectives within each phase were.

Phase 1:

- Investigate the prevalence of prescribing errors on palliative care prescriptions presented to a sample of community pharmacies.
- Explore whether the error rate varies according to the practice, prescriber status, or the nature of the prescription.
- Establish whether errors on palliative care prescriptions are associated with time delays in obtaining urgent palliative medicines.
- Establish the maximum waiting time for palliative medicines from the community pharmacy setting.
- Establish what processes exist for patient referral when palliative medicines are not available.
- Conduct a survey of patients and their carer's collecting palliative care prescriptions to identify areas for improvement.

Phase 2:

- Identify factors from phase 1 of the study causing delays in obtaining palliative medicines.
- Clarify factors from phase 1 of the study that facilitate or limit community pharmacists' involvement in providing palliative care services.
- Determine whether community pharmacies within an LCS fulfil more than a supply function.
- Explore the pharmacists' perceptions and experiences in the delivery of palliative care services.
- Explore the community pharmacists' current and future role in palliative care according to the views of pharmacists and other healthcare professionals.
- Make recommendations to improve the pharmaceutical care of palliative care patients and processes for obtaining urgent palliative care medication.

Method

This study took place in a large city (Sheffield, UK) using a sequential two-phase mixed methods approach. After seeking clarification that NHS Research Ethics Committee approval was not required, ethical approval was sought and granted from the University of Bradford.

A two-phase, explanatory research design was chosen to support answering the objectives; specific quantitative data explored variables having an impact on timely access to palliative medicines in community pharmacies, and qualitative data explored healthcare professionals' views and experiences to provide explanation of delays and other contextual information from the Phase 1 results. Strategies were chosen to minimise bias as well as being reflexive on opportunities and assumptions in the research process to ensure rigour.

All Sheffield community pharmacies were invited to take part using a range of methods including e-bulletin, fax, and promotional launch working in liaison with the Local Pharmaceutical Committee (LPC). Pharmacies could participate if they were in the LCS supplying palliative medicines or they had a typical throughput of 30 palliative care prescriptions over a 4-week period. The exclusion criteria were if the company or pharmacy manager did not give permission and pharmacists who had not worked in the UK for at least 12 months (to ensure they were familiar with UK services); however, no pharmacies were excluded.

Random selection of pharmacies was not possible due to the low level of palliative prescriptions in the community. Following initial slow recruitment of pharmacies, a fax invite was sent to 17 pharmacies involved in the LCS not already participating in the study, however, no further expressions of interest were received. Additionally, the researcher provided a briefing at a local community pharmacy development event resulting in two expressions of interest. In total five pharmacies consented to participate in the study, lower than the target of fifteen. Sampled pharmacies included independent, small and large multiples. The study coincided with the government announcement of cuts to the pharmacy budget⁽¹⁸⁾ the timing of which could have affected recruitment to the study. Although two pharmacies that did not consent specified low numbers of palliative care prescriptions as the reason.

Due to poor pharmacy recruitment, which could have skewed the sampling frame, an ethics amendment was made to include healthcare professional interviews within Phase 2 of the study which was originally designed for community pharmacists only. This enabled a broader range of views to be captured within the second qualitative phase of the study to enhance the findings.

Phase 1 quantitative study

There were two parts:

- pharmacy prescription data collection

- survey of customers waiting for or collecting prescriptions

The pharmacy prescription data collection form was developed by the researcher with experienced pharmacy practice research supervisors and piloted within one community pharmacy before being refined and rolled out across all sites.

Consenting pharmacies collected a range of data on 30 sequential palliative care prescriptions presented to the pharmacy during the audit period from May – October 2016. This included the following information:

- Date/time prescription presented to the pharmacy and the date/time it was ready for collection. Out of hours prescriptions were those issued by an out of hours provider.
- Whether the prescription was urgent (if it contained parenteral medication, was from an out of hours provider, handwritten by community palliative care team or the customer indicated it was urgent).
- Practice and prescriber name.
- Demographic information including whether the patient used the pharmacy regularly.
- Details on the nature of the prescription for instance if it was handwritten, computer-generated or electronically delivered.
- Names and details of all medicines prescribed, whether the prescription fulfilled legal requirements, details of legal errors, interventions made and whether this lead to a delay for the patient.
- Records of other errors and interventions not relating to controlled drug prescription writing requirements were logged on a separate form.

A short customer survey was developed utilising modified questions from the Pharmaceutical Services Negotiating Committee (PSNC) national Community Pharmacy Patient Questionnaire (CPPQ) with feedback from supervisors, the LPC, a risk manager and hospice Patient User Co-ordinator. The survey was piloted with three patients in one pharmacy before being further refined and piloted again with two patients in a day hospice setting.

Pharmacy staff within the participating pharmacies invited customers presenting with a palliative care prescription if they wanted to take part in the survey whilst waiting for or collecting the prescription. The survey was optional though pharmacy staff were provided with a suggested script and briefing so they could support customers in completion of the survey. Patients receiving prescription home deliveries and those in care homes were excluded from the customer survey as pharmacy staff were not available to go through the survey with them. Furthermore, questions in the survey were not relevant to those in care homes.

The customer survey consisted of seven questions and intended to elicit non-confidential details about the prescription collection including:

- The customer's use of the pharmacy.
- Whether prescription items were urgent and needed that day.
- Whether all items on the prescription were available and if not, how they might go about getting them.
- Whether the customer had to go to more than one pharmacy to get items on the prescription.
- Free-text section for the customer to write comments on improving their experience.

To minimise bias and improve reliability and validity all data collection forms and surveys were piloted and set criteria were used for identifying palliative prescriptions and prescribing errors.

Data in phase 1 was coded into SPSS[®] v23 and analysed using mainly descriptive methods. Pharmacies with the highest or lowest number of prescription errors, longer or shorter waiting times or higher referrals were considered for purposive sampling for phase 2 to maximise richness and diversity of data. All the participating pharmacies fulfilled the criteria to take part in phase 2.

Phase 2 qualitative study

A range of healthcare professionals working in the community including GPs, community nurses, intermediate care team and palliative care team members as well as the community pharmacists from phase 1 consented to take part in individual semi-structured interviews. Healthcare professionals were recruited through an e-bulletin to all GP practices, through practice managers, and through community nurse team leaders. Emails and posters were utilised to recruit an out of hours doctor however no staff expressed an interest in participating. Participants were given information on the study and time to consent. Participants were self-selected and contacted the researcher about the study or were selected by their team leader.

A topic guide for the community pharmacist semi-structured interview was initially developed with input from a hospice Patient User Co-ordinator and three research supervisors. The topic guide was piloted with a pharmacy researcher with experience in qualitative interviews and questions were added for any unexpected results from the phase 1 analysis. The community pharmacist interview guide was then used as a template for the other healthcare professional interviews removing questions relating specifically to community pharmacies e.g. disposal of controlled drugs and tailoring questions dependent on the participant's independent prescriber status.

Interviews were audio-recorded and transcribed verbatim with names, practices and geographical references removed to ensure anonymity. Interviews covered a range

of issues such as prescribing and accessing palliative medications, specialist use of medicines and the community pharmacist's role in palliative care.

Sixteen interviews were conducted and analysed using the Framework method⁽¹⁹⁾ with support from the researcher's supervisors. Coding of themes was developed into a framework using broad themes based on the research questions and others which emerged iteratively from the data.

Results/Findings

Phase 1:

Five pharmacies took part, two in the LCS with three comparators not in the scheme. A total of 75 pharmacy data collection forms were completed between May and October 2016 totalling 271 individual prescription items. Most prescriptions were written by GPs during normal surgery hours with 12% from Out of Hours (OOH) providers and 2% from the specialist palliative care team. Controlled drugs (CDs) in schedule 2 or 3 made up 42% of the sample and 50% of CDs were for medications to be administered subcutaneously near the end-of-life. 90% of subcutaneous items were on the local palliative care formulary stock list. Legal prescription errors occurred in 1.1% of prescription items, all of which were for controlled drugs to be administered subcutaneously via an ambulatory syringe pump where the dose was not specified on the prescription. Non-legal errors arose in 3% of prescription items due to variety of reasons classified as administrative or clinical errors such as medicine out of stock with supplier, the need to change to an alternative strength, information incomplete, allergy to the prescribed product, wrong strength or wrong dose prescribed.

When supplying subcutaneous palliative medicines, the time taken between pharmacies in the LCS (median time 10min) and pharmacies not in the LCS (median time 21hr 18min) was not significantly different at a confidence level of 95%; an independent samples median test was calculated ($p = 0.8$). Though not statistically significant due to the small sample size this difference could be significant for someone who is requiring medicines urgently for symptom control towards the end-of-life. There was also large variation between pharmacies as indicated by the interquartile range. Table 1 provides further information on the number of subcutaneous prescription items and missing data in the analysis across pharmacies participating compared to those not participating in the LCS.

Table 1: Promptness of supply of subcutaneous medicines (anticipatory or via syringe driver)

	LCS pharmacies (%)	Non-LCS pharmacies (%)
Total no. s/c prescriptions	100 (74.1)	35 (25.9)
No. prescriptions where time data missing	65 (65.0)	6 (17.1)
No. valid for analysis	30* (30.0)	29 (82.9)
Minimum time taken (hr.min)	0.03*	0.27
Median time taken (hr.min)	0.10*	21.18
Maximum time taken (hr.min)	0.30	146.00
Lower quartile time taken (hr.min)	0.08*	1.00
Upper quartile time taken (hr.min)	0.10*	26.30

*Five urgent prescriptions excluded from analysis where minimum time was 0 minutes (where medicines not available and user sent to another pharmacy) to prevent skewing results

Furthermore, legal prescription errors had negligible effect on promptness of supply with all prescriptions with a legal error available within 30 minutes. Pharmacies used a range of methods to resolve errors including legally permitted technical change, telephone call to care home, use of the pharmacy patient medication record and call to GP to request new prescription.

Customer surveys were completed by 73% (55/75) of pharmacy users collecting palliative medications. In most cases users were picking up a prescription for someone else and in just over 20% of cases were referred to a pharmacy by a healthcare professional. 73% of users indicated that the medication was needed urgently with 50% containing subcutaneous medications. In 20% of cases at least one medicine was not available, half of which were needed urgently. One in every five pharmacy users reported they had to go to more than one pharmacy to access palliative medicines.

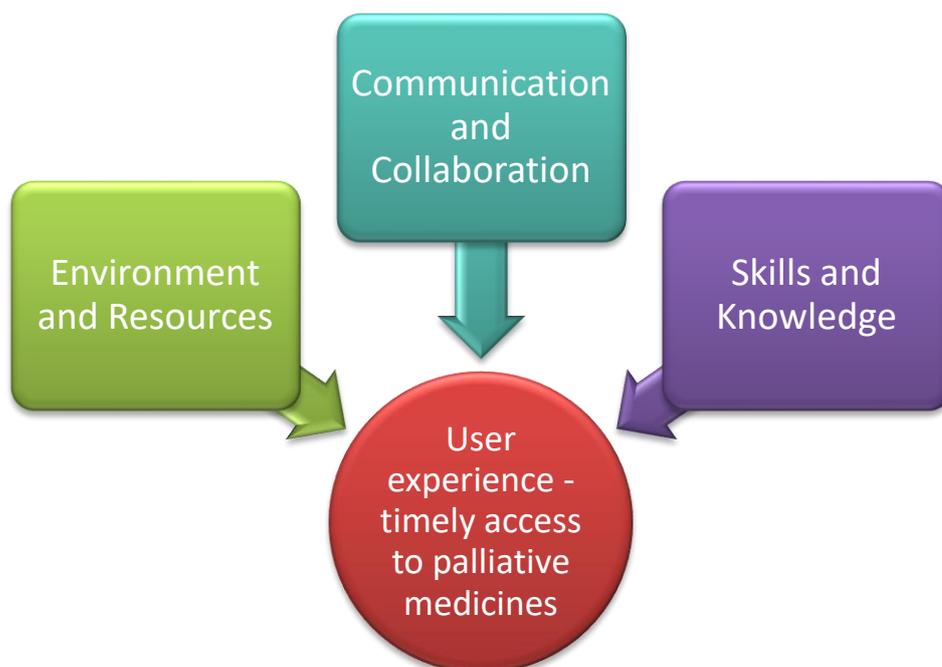
SCR was not used for any prescriptions in the sample and no prescriptions were sent via the Electronic Prescription Service (EPS). At the time of the data collection EPS had not been rolled out for CDs in England.

Phase 2:

Sixteen interviews were conducted with community pharmacists (5), GPs (3), community nurses (5), palliative care team (2), and intermediate care team (1) members. Interviews lasted for 51 minutes (median time for community pharmacist interviews) and 18.5 minutes (median time for other healthcare professionals (HCPs)). The emergent themes on timely access to medication and the community pharmacist's role in palliative care resulted in the framework in Appendix 1.

Themes relating to timely access to palliative medicines revolved around three subthemes (i) environment and resources, (ii) communication and collaboration, (iii) skills and knowledge as presented in figure 1.

Figure 1: Timely access to palliative care drugs – information from healthcare professional interview



Findings relating to each sub-theme are presented as a narrative and accompanied by verbatim quotes from healthcare professionals within boxes to illustrate the points made.

Environment and Resources

Community pharmacists reported providing a primarily reactive role when faced with a prescription for palliative medication with little advanced planning. They described practical issues such as: storage of controlled drugs; stock shortages; ordering

processes; prescriptions for items not on the local formulary and controlled drug prescription errors, examples of which are provided in box 1. Pharmacists and other healthcare professionals referred to the accompanying stress associated with sorting out access to palliative care medicines which were needed urgently. Having stock of palliative medicines in the pharmacy was the main facilitator supporting timely access. Factors contributing to stock availability in the pharmacy can be found within Appendix 2.

Box 1: Illustrations of environment and resource issues

...I could go in now and say, 'I need these drugs' 'Oh I can get them in for 11 o'clock tomorrow morning' [exasperated laugh] it's like that's not really very helpful, I need them now (Nurse, HCP7)

...when the prescriptions arrived in the pharmacy there wasn't enough time to order any [medications] if you didn't have them (Pharmacist 5)

...we've only got very small CD cabinets...the more controlled drugs you keep the more issues you are going to have (Pharmacist 1)

...by the time you get a prescription sorted out they might not need it anymore in which case you face a storage problem...I can't just put it on a shelf (Pharmacist 5)

...we have a particular issue with incorrectly written prescriptions, and it's always midazolam. They always pick the one [on the computer] that's not on formulary...legally there's no problem with it but it's not formulary, it's not a regular stocked item (Pharmacist 4)

...one bloke got into a bit of a fight with the pharmacist because he was so anxious about getting the medication back in time for the syringe driver and the pharmacist wouldn't give him the medication because he [the pharmacist] didn't know what dose (Palliative Care Team, HCP 11)

Communication and Collaboration

Community healthcare professionals indicated they may contact the pharmacy to check availability, but palliative care needs were not discussed in advance with pharmacists due to concerns about sharing confidential information.

There was poor understanding of which pharmacies participated in the LCS, the community pharmacist's professional role, and pharmacy services of potential benefit to palliative care patients.

Examples where community pharmacists were working with GPs or nurses to support access to palliative medicines were characterised by effective communication and often involved face to face relationships. Examples of quotes related to the sub-theme of communication and collaboration are presented in box 2. Both pharmacist quotes in box 2 relate to previous jobs.

Box 2: Illustrations of communication and collaboration issues

...but you're limited by what you can tell them [pharmacists] obviously from a confidentiality point of view... (Palliative Care Team, HCP11)

...relatives are running right left and centre trying to get hold of these meds...there is a commissioned service...but we don't know who they are... (Intermediate Care Team, HCP1)

I don't know who's commissioned we just basically know which ones we go to that are more likely to have it.. (Nurse, HCP4)

...the doctors would be there writing the scripts; the nurses would be there...we would work very closely and collaboratively (Pharmacist 4)

... [the District Nurses] ...they would come in and ask for advice...and say what have you got in, what can I prescribe (Pharmacist 3)

...there was one particular patient who was on oxycodone huge doses, massive doses and I didn't ever have to say...I need enough to get me over the weekend he'd already spot the trend and he'd get enough in to cover me over so that was a really positive experience and showed how it can work well (Nurse, HCP4)

Skills and Knowledge

Community healthcare professionals expressed concern that community pharmacists were not familiar with pre-emptive prescribing and they perceived that community pharmacists did not understand the urgency with which palliative medicines were sometimes needed as illustrated by quotes within box 3.

Box 3: Illustrations of skills and knowledge issues

I got the impression [the pharmacist had] probably never done pre-emptives before because she rang me, she wasn't happy for the family to take them because she wanted to be clear that they weren't going to be giving them and if she needed to give the family any counselling about how to use them and I was...that's not the point of pre-emptives

the family don't use them at all so you're fine to give it to them and they haven't got anything in the house that they could use them for so they couldn't draw them up (Palliative Care Team, HCP11)

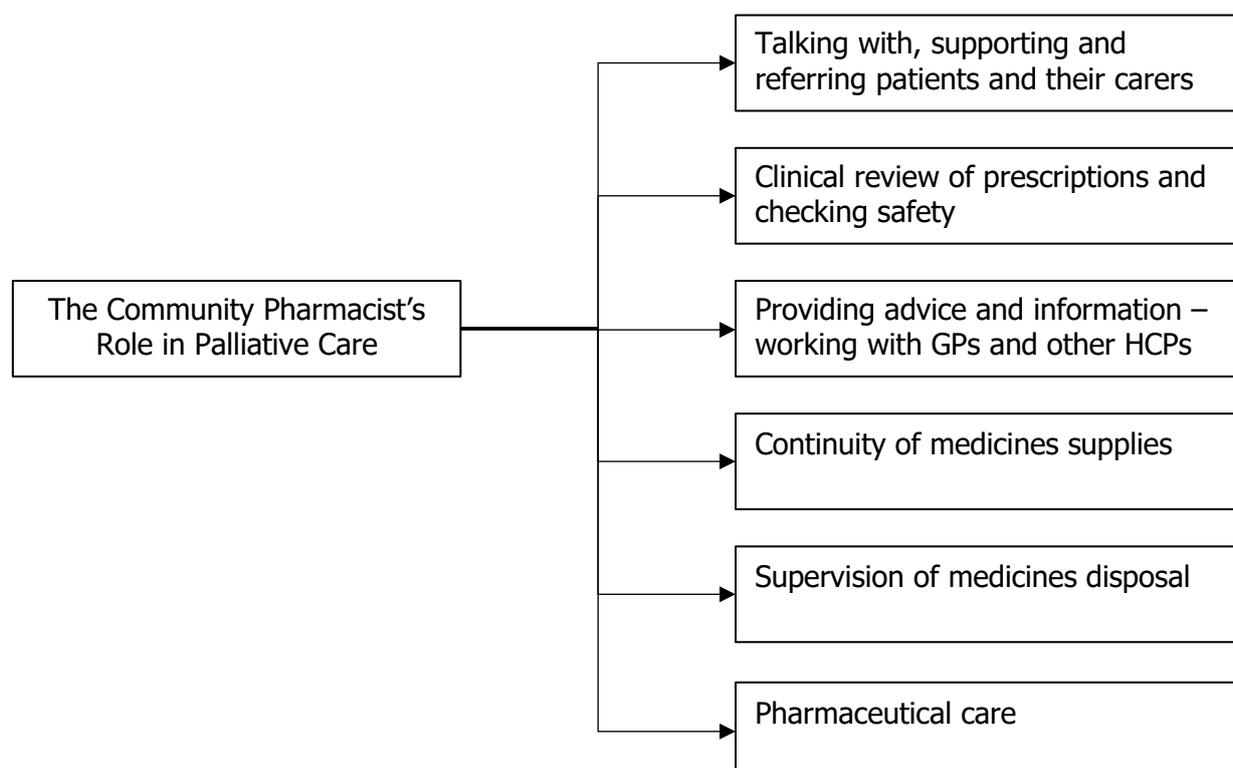
...community pharmacy don't [sic] really understand how urgent these kinds of things are... (Intermediate Care Team, HCP1)

Syringe drivers...I don't know a great deal about them practically...I know the doses...but I've never actually seen a syringe driver in use or come across one (Pharmacist 2)

'not that long ago, a patient took one of my prescriptions in [to the pharmacy] and because it had a controlled drug on [the prescription] the pharmacist refused to do it and sent them [the patient] away [be]cause it was a purple form' (Anon. Nurse Prescriber)

Sub-themes relating to the community pharmacist's role in palliative care can be found in figure 2. Open codes arising from the research were discussed with a community pharmacist working in palliative care to further refine these into codes within the community pharmacist's sphere of practice, removing those situated within the pharmacy corporate body or the pharmacy business.

Figure 2: Tree diagram of thematic framework for pharmacist's role



Other healthcare professionals often had a limited view of the community pharmacist's role in palliative care, often holding a traditional view of pharmacists in the dispensing and safe supply of medication. They did, however, highlight variation in pharmacists' involvement as illustrated in the quotes in box 4.

Some pharmacists also felt role limitation since decisions had often been made by the time they received a prescription and it was rare for their input to be sought in advance. Receiving unused medicines after a patient died was identified as a sensitive situation which community pharmacists had to get used to handling.

Other healthcare professionals' reluctance to share information, the pharmacy's poor access to patient records and a lack of integration into the primary healthcare team also limited the pharmacist's role. Even so, healthcare professionals felt further involvement by community pharmacists would be helpful for patients.

Box 4: Illustrations relating to the community pharmacist's role in palliative care

...nurses just see pharmacists as people who dispense drugs they don't see pharmacists as the person who can actually make suggestions of drugs... (Nurse, HCP4)

...I think the safety net of double checking regarding interactions and dosages is very important (General Practitioner, HCP3)

...a good pharmacist becomes that safety net...I think GPs do a fantastic job but they don't understand drugs the same way that pharmacists do...pharmacists are much better at picking up the subtle differences between different drugs and the subtle interactions...that sometimes GPs don't see... (Nurse, HCP7)

...most of the decisions have already been taken, for example dosing (Pharmacist 3)

I don't think there is a consistency of involvement of community pharmacy with patients [in palliative care], it definitely feels like something that could make a difference if it could be formalised more and proved... (Palliative Care Team, HCP9)

I don't think we utilise community pharmacy as much as we could do (Intermediate Care Team, HCP1)

...you can either see they're upset...they don't want to drag it out, they just want to give you these medicines and go...we get quite a lot of

medicines back, we're used to dealing with that (Pharmacist 2)

...depending upon your training and experience, there is definitely psychological support you can give...being able to signpost and just putting people in touch with people so they get the proper support they need (Pharmacist 3)

Sometimes carers find themselves out of their depth with medication and possibly the GP doesn't recognise that whereas the pharmacist might (General Practitioner, HCP3)

You get a lot of people who need some simple advice, if...they've got a dry mouth...we can make that easier for them... (Pharmacist 2)

...they might have dry eye syndrome off chemo[therapy] or...they might be overdoing it with the hypromellose and getting sore eyes because there's too much preservative ...they quite often appreciate the conversation, the fact that you're interested... (Pharmacist 5)

Discussion

The principal findings from the study are that commissioned services for access to palliative care medicines in Sheffield are not working as well as they could since people are unaware of the commissioned pharmacies and this may affect timely access to urgent palliative medicines. Furthermore, collaboration and sharing information with community pharmacists could improve access and increase efficiency. Overall this study suggests that community pharmacists in Sheffield currently have limited input into the care of palliative patients with the focus mostly on the supply of medicines from the pharmacy.

Previous studies have focused on prescribing errors, particularly on handwritten prescriptions, and formulary choices^(12,13,20,21) with no previous studies quantifying the time taken to access palliative medicines. The lower prevalence of palliative prescriptions in this study compared to a previous local evaluation⁽²²⁾ meant that there were insufficient data to draw definitive conclusions. Incorrectly written prescriptions and legal errors were lower compared to previously reported and unpublished studies^(12,14,21) which could be attributable to customisation of clinical computer systems for the prescription of palliative medicines, GP training, and individual prescriber strategies which have been previously described in defence of error^(23,24). Nevertheless, the combined data from both phases corroborates the fact that GPs and other healthcare professionals had a limited understanding of the community pharmacists' professional role, the services they could provide that may be of benefit to palliative patients and were reluctant to share information with them

which limited the pharmacist's involvement and meant that pharmacists' specialist skills and knowledge in medicines was underutilised⁽²⁵⁾. These factors contributed to poor integration of pharmacists into the primary healthcare palliative team, similarly to evidence on pharmacist integration more generally^(26,27), resulting in a less than satisfactory experience for some patients and carers who had to go to more than one pharmacy to obtain urgent items.

A lack of knowledge of community pharmacists' roles and services among other healthcare professionals and associated poor integration was also noted by Jiwa et al.⁽²⁸⁾. In Australia and in Scotland, development of specific services for chronic disease management and home medication reviews have allowed community pharmacists to have greater input into the care of palliative care patients^(8,29,30) suggesting that external factors such as contracts and reimbursement policies can support pharmacists to have an extended role in this area.

Near the end-of-life, family caregivers and friends were involved in collecting medication for the patient with many of them going to a pharmacy that is not the patient's usual pharmacy. Changes in continuity of community pharmacist care near the end-of-life could be explained by the urgent nature of the prescription, the chosen pharmacy being easier for the relative to reach or the fact they have been directed or referred to the pharmacy from an out of hours provider, another pharmacy or their healthcare professional. There was some evidence that nurses may select pharmacies for dispensing urgent prescriptions where they have previous experience of successful supply. This finding on changes to continuity of care appears to be novel with no other reported research found in this area. Changes in continuity of care highlight the need for advanced care planning to be effective, for all healthcare professionals to be aware of locally commissioned or enhanced schemes so they can direct family caregivers appropriately and the need for community pharmacists to have read and write access to patient healthcare records. Use of the Summary Care Record (SCR) was limited during the research despite having been in use for more than two years within Sheffield pharmacies which were part of the SCR pilot. It would be helpful to further explore the value and relevance of access to SCR in supporting community pharmacists in EOLC in future research.

The strengths of this study include the range of healthcare professionals within the qualitative interviews which provides a unique insight into their views on the community pharmacist's role in palliative care. Furthermore, the combination of methods used to triangulate data helps strengthen the validity of the study. The development of a customer survey appeared to be a useful tool with a high response rate in this population. Study findings are limited due to the research taking place within a single city; commissioning and service variations will mean the results are limited and cannot necessarily be generalised to other areas. Furthermore, as the

researcher works as a specialist pharmacist in palliative care it is possible that this could have influenced those participating and their responses. Confounding factors such as number of pharmacy staff and hours of opening were not accounted for within the analysis. Data within the quantitative phase were limited due to poor recruitment of community pharmacies and the low level of palliative care prescribing in the community.

Conclusion

This study has demonstrated several barriers limiting the community pharmacist's role in palliative care and their ability to provide timely access to palliative medicines. Other healthcare professionals recognised some of the difficulties limiting the pharmacist's role and had experienced variations in practice and involvement of community pharmacists. Many healthcare professionals were of the view that community pharmacists' knowledge and expertise were underutilised in palliative care. In particular, other healthcare professionals thought that pharmacists' detailed knowledge and understanding of different forms, strengths and formulations of palliative care medicines could be used to optimise prescribing. Community pharmacists wanted to do more but felt constrained by regulations, time and contractual payments. Despite the national direction to extend the role of the community pharmacist in palliative care the study identified problems enacting this due to infrastructure, regulatory and funding issues and a lack of integration into the primary healthcare team.

Next steps and outputs

Commissioners of palliative and end-of-life services need to ensure services are promoted to healthcare professionals, patients and carers on how to access medicines near the end-of-life. Healthcare organisations need to monitor access to palliative care medicines and identify local issues. Further studies should investigate the impact of electronic prescribing using EPS on prescribing error resolution and access to palliative medicines and how to further integrate community pharmacists into palliative and end-of-life care service provision in the primary healthcare team.

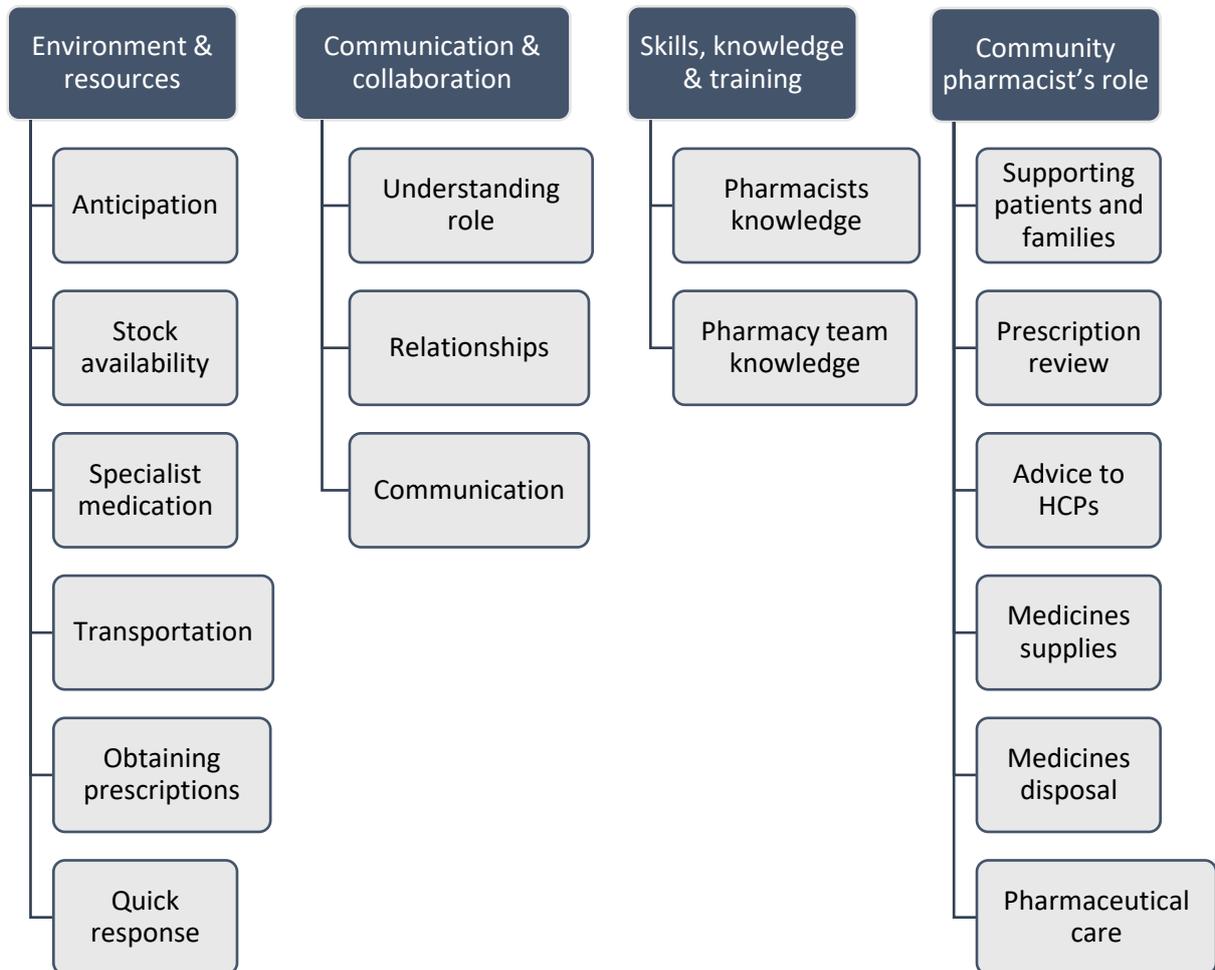
Some of this research has been presented at conferences and workshops. Details of the abstracts and publications are provided in Appendix 3. Further plans for publication and dissemination are in progress to include healthcare professionals involved in end-of-life care, commissioners, and local patient organisations.

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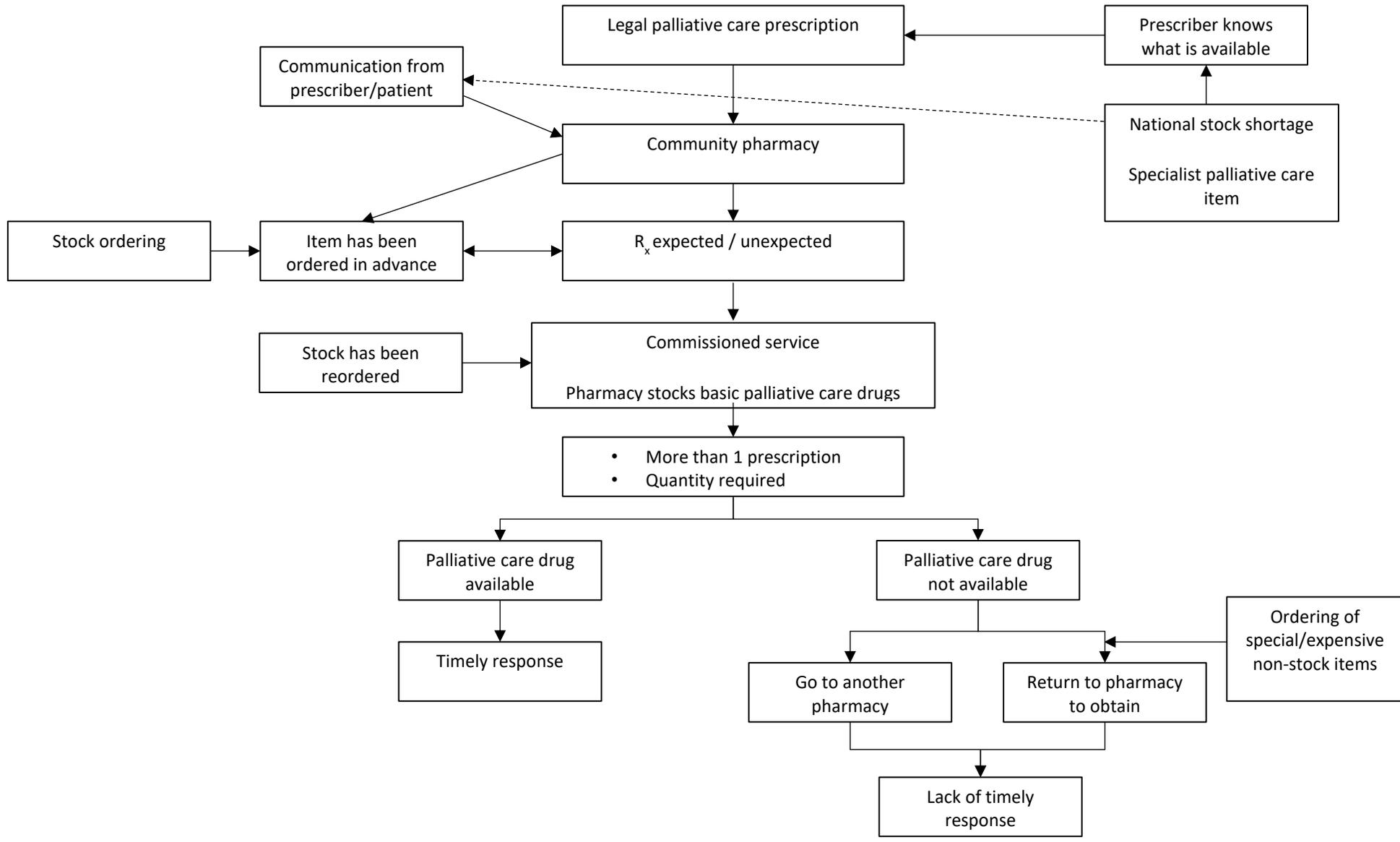
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Appendix 1 Diagram of Framework themes



Appendix 2 Factors contributing to stock availability in the pharmacy



Appendix 3 Outputs

- Elizabeth Miller, Julie D Morgan, Alison Blenkinsopp, Christina Wong (2016) Are subcutaneous palliative medicines available and accessible: an out of hours (OOH) audit in Sheffield. *BMJ Supportive & Palliative Care* 2016, 6 (3) 407; DOI: 10.1136/bmjspcare-2016-001204.60 (Poster presentation at the Royal Society of Medicine/ Marie Curie Research Conference 19th October 2016, London)
- E Miller, A Blenkinsopp, J Morgan, C Wong (2016). Developing a research protocol for investigating community pharmacy palliative care services: focusing on the patient, not just the prescription. (Poster presentation at the University of Bradford Faculty of Life Sciences research and development open day 31st May 2016 and oral presentation at the University of Bradford Life Sciences postgraduate conference 1st June 2016, Bradford)
- E Miller, A Blenkinsopp, J Morgan, C Wong (2017) Supporting timely access to medicines at the end of life: What is the community pharmacist's role? (Oral presentation at post-graduate conference at the University of Bradford Faculty of Life Sciences research and development open day 7th June 2017, Bradford)
- E Miller, J D Morgan, A Blenkinsopp (2017). Do prescribing errors impact on access to urgent palliative medicines? A quantitative study in Sheffield. *International Journal of Pharmacy Practice* 25(Suppl 2) (Poster 73 at RPS Winter Summit) available from <http://onlinelibrary.wiley.com/doi/10.1111/ijpp.12417/full>
- Miller, E (2017) "A mixed methods study investigating the community pharmacist's role in palliative care" (doctoral thesis), DPharm, University of Bradford, Bradford
- E Miller, J D Morgan, C Wong, A Blenkinsopp (2018) A mixed methods evaluation of factors impacting on the community pharmacist's role in providing access to palliative medicines in Sheffield, UK: incorporating pharmacist, GP and other healthcare professional views. HSRPP Oral Abstracts *International Journal of Pharmacy Practice* 26(S1):4-36 available from <https://doi.org/10.1111/ijpp.12442>
- E Miller, J D Morgan, C Wong, A Blenkinsopp (2018) What is the community pharmacist's role in palliative care: views of healthcare professionals within a UK city. *BMJ Supportive and Palliative Care* 8(Suppl 1): A12-A13; A4; DOI: 10.1136/bmjspcare-2018-ASPabstracts.9 Available from http://spcare.bmj.com/content/8/Suppl_1/A4.1.abstract
- E Miller, J D Morgan, A Blenkinsopp (2018) 'Have you got the drugs?' a survey of customers accessing palliative medicines from community pharmacies in Sheffield. *BMJ Supportive and Palliative Care* 8(Suppl 1): A12-A13; DOI: 10.1136/bmjspcare-2018-ASPabstracts.32 Available from http://spcare.bmj.com/content/8/Suppl_1/A12.3.abstract