Managing medicines for patients with serious illness being cared for at home

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SYNOPSIS

Title	Managing medicines for patients with serious illness being cared for at home
Acronym	MM@H
Short title	Managing Medicines
Chief Investigator	Kristian Pollock
Objectives	Aim: To explore how seriously ill patients, their family care givers, friends (FCGs) and the health care professionals who support them, engage collaboratively in managing medicines prescribed for relief of symptoms at the end of life and provide evidence from a detailed study of barriers, facilitators, information and training needs for the improved support at home of terminally ill people and their families. Objectives: 1. to explore how patients, family care givers and friends (FCGs), particularly from minority, under-served and hard to reach groups (MHRG) (e.g. Black, Asian and Minority Ethnic groups, the economically disadvantaged, and those affected by severe mental health problems), manage medicines prescribed for patients with serious and terminal illness being cared for and dying at home. 2. to compare and contrast the experience of symptom control and FCG involvement in medicines management for patients who have been referred to specialist palliative care services and those who have not. 3. to establish what further support, information and training FCGs and health care professionals need to feel confident in managing medicines, including those for end of life care, for patients being cared for and dying at home.

	4. to explore lay and professional stakeholder perspectives (including those of GPs, community pharmacists and nurses) about how community pharmacists (CPs) could be better integrated into the network of care and support for families and professionals in medicines management and end of life care. 5. to use the knowledge gained, from the perspective of all stakeholders, to make empirically founded recommendations for service development and effective commissioning in relation to medicines management to improve the care and experience of patients being cared for and dying at home and their family and friend care givers.
Study Configuration	Qualitative study with 3 work packages: 1. Stakeholder interviews with bereaved family and friend caregivers and healthcare professionals (objectives 1, 2, 3, 4) 2. Longitudinal family and friend case studies (objectives 1, 2,3,4) 3. Stakeholder workshops (objective 5)
Setting	Primary and community care
Sample size estimate	N/A - this is a qualitative study
Number of participants	Up to 190 in total Stakeholder interviews (up to 65) with up to 25 bereaved FCGs and up to 40 HCPs Family and friend cases (up to 25) involving up to 75 participants Workshop participants ~50 stakeholders attending one of two workshops: national and regional representation from education, practice, commissioning, study participants, public, third sector organisations etc.
Eligibility criteria	Participants for Workpackages (WP) 1 and 2 will be recruited through general practices, hospices, specialist palliative care services and community pharmacies in Nottinghamshire and Leicestershire. WP1: Bereaved Family and Friend Caregiver interview eligibility criteria:

	• Bereaved family caregivers and friends (FCG) of patients who have been cared for at home during a substantial part of the last 6 months of life. • Aged 18, no upper age limit • Patient's death occurred at least 8 weeks prior to invitation to take part in the study • Ability to give informed consent • Prioritisation of participants who are FCGs for deceased patients from minority, hard to reach and under-served groups (MHRG) e.g. a. Black, Asian and Minority Ethnic b. economically disadvantaged c. affected by severe mental health problems d. with experience of care for illnesses other than cancer. WP1: Healthcare professional interview eligibility criteria: • from specialist palliative care and community health care services with experience of providing care, prescribing, dispensing or administering medicines for patients with serious and terminal illness being cared for at home e.g. GPs, palliative care consultants, Community Pharmacists, community, specialist palliative care and district nurses with experience of managing EOLC medicines for patients dying at home. • Aged 18 or over, no upper age limit • Ability to give informed consent WP1: Bereaved FCG exclusion criteria: • Patient has died less than 8 weeks previously • have not been substantially involved in supporting patients being cared for at home • aged under 18 • lacking capacity to consent WP1: HCP interview exclusion criteria:

	• Lacking experience in providing care, prescribing, dispensing or administering medicines for patients with serious and terminal illness being cared for at home • Aged under 18 • Lacking capacity to consent WP2: Family and friend case studies: Case studies will include patients, relatives/friends (FCGs) and others directly involved in their care and providing support in medicines management. Eligibility criteria: • Patients identified by a member of their clinical care team as likely to be within the last 6 months of life according to any of the following criteria: a. the SPICT (Supportive and Palliative Care Indicators) tool b. included on local palliative care registers including EPaCCS c. identified as amber on the Gold Standards Framework register. d. Being cared for at home • FCGs of eligible patients who are significantly involved in providing patient care, including medicines management at home • HCPs directly involved in providing support in medicines management to the patient • Prioritisation of participants who are patients or FCGs of patients from minority, hard to reach and under-served groups (MHRG) e.g. a. Black, Asian and Minority Ethnic b. economically disadvantaged c. affected by severe mental health problems d. with experience of care for illnesses other than cancer. • Participants will be aged 18 or over, no upper age limit • Participants having capacity to give informed consent • Patients who lack the capacity to consent may be included as participants, subject to consultee agreement. They may

	contribute to informal discussions, observed consultations, and interviews with other participants, but will not be invited to take part in interviews as the only participant. WP2 Family and friend case study exclusion criteria: • Patients not identified as being within the last 6 months of life • FCGs not involved in providing patient care including medicines management at home • HCPs not involved directly involved in the patients care • Aged under 18 • Lacking capacity to consent WP3: Stakeholder workshops Members of relevant stakeholder groups with experience and/or expertise of medicines management for patients being cared for at home at the end of life. Eligibility criteria: • Study participants (patients, FCGs and HCPs) • Representatives of patients and family and friend care givers from local, regional and voluntary organisations such as Carers Federation, MND Association, Age UK • Academics and educators with research interest in supporting patients being cared for at home at the end of life • HCPs, health care managers, commissioners, community pharmacists, • Aged over 18, no upper limit • Ability to give informed consent • WP3: Stakeholder workshops exclusion criteria: Stakeholders who lack direct, professional and/or research experience of medicines management for serious and terminally ill patients being cared for at home • aged under 18 • lacking capacity to consent

Description of interventions	This is a qualitative, non-interventional study The following qualitative methods of data collection will be used: 1. Stakeholder interviews: • a single qualitative interview of up to an hour duration 2. Family and friend case studies: • patient and FCG participants will be involved in baseline and follow up interviews over a period of up to 3 months. • Nominated HCPs will usually take part in a single interview of approximately a half hour duration. Depending on the nature of the case, some HCPs may take part in additional, shorter updates. • Observation of consultations between patients, FCGs and HCPs (anticipated between 1 and 3 depending on participant agreement and the context of each case). • Photographs of objects relevant to the use and management of medicines and the environment of care. • Review of patient medical records. 3. Stakeholder workshops: • participants will take part in a single interactive workshop of approximately 4 hours duration. This will involve a mix of presentations, discussion, and feedback.
Duration of study	30 months,
Methods of analysis	1. Stakeholder interviews: thematic analysis using constant comparative method. 2. Family and friend case studies: a. analysis will triangulate different data sources including baseline and follow up interviews with patients, FCGs, HCPs, observation notes, review of case

	notes and analysis of medicines prescribed and used; b. a social network analysis (SNA) will be undertaken of how the organisation, responsibility and decision making about medicines management is negotiated within the patient's home and through professional communication and inter-relations within the wider network of services involved in each case. 3. Stakeholder workshops: thematic analysis of audio recordings, field notes and written outputs of workshop activities.

ABBREVIATIONS

AMs Anticipatory Medicines (to control symptoms associated with the end of life, kept in the patient's home to be readily available in case of urgent need)

AP Anticipatory Prescribing: the prescribing of AMs

BAME Black Asian and Minority ethnic group

CI Chief Investigator

CP Community pharmacist

CRF Case Report Form

EOLC End of life care

EPaCCS Electronic Palliative Care Coordination Systems

FCG Family and friend care giver

GCP Good Clinical Practice

GSF Gold Standards Framework

LOROS Hospice care for Leicester, Leicestershire and Rutland

MND Motor Neurone Disease

MHRG Minority, and hard to reach or underserved group (e.g. low socio-economic status, minority ethnic group, affected by disability or severe mental illness)

NHS National Health Service

OOH Out of hours

PIS Participant Information Sheet

REC Research Ethics Committee

R&D Research and Development department

R&I Research and Innovation department

SPICT Supportive and Palliative Care Indicators Tool

UoN University of Nottingham

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STUDY BACKGROUND INFORMATION AND RATIONALE

This study will explore how patients with serious and terminal illness, their family and friend care givers (FCGs) and the healthcare professionals (HCPs) who support them, engage collaboratively in managing medicines prescribed for relief of symptoms including breathlessness, nausea, pain and anxiety towards the end of life. Most people in the UK die in late old age and after prolonged and increasing co-morbidity and/or frailty (OECD, 2009). Patients usually spend much of their last year of life being cared for at home, where they and their family and friend care givers (FCGs) are required to manage complex medication regimes, often involving powerful drugs with high risk of adverse side effects (Lau et al., 2009, Sheehy-Skeffington et al., 2014, Duerden et al., 2013). Previous studies have reported FCGs and patients who experience the responsibility for managing end of life care medicines find it to be challenging and burdensome, and that they often lack the confidence and knowledge required to carry out this task (Sheehy-Skeffington et al., 2014, Oliver et al., 2013, Tija et al., 2015, Joyce et al., 2014, Payne et al., 2014, Duerden et al., 2013, Lau et al., 2010). Effective symptomatic control of distress and pain is critical to excellent end of life care and supporting patients to die at home (DOH, 2008).

Previous studies report a high incidence of pain and other distressing symptoms among dying patients (Lau et al., 2009, Oliver et al., 2013, Hackett et al., 2016). Failure to control symptoms is a likely cause of crisis situations resulting in distressing and costly unscheduled care including out of hours visits and hospital admissions (Hussainy et al., 2011, Wowchuck et al., 2009). The complexity of symptoms and the intensity of pain can increase as death approaches (Singer et al., 2015) The likelihood of poor adherence with prescribed regimes, and the consequence of adverse effects and inadequate symptom control, is high (Duerden et al., 2013). However, the evidence indicates that challenges to the optimal use of EOLC medicines, including the use of anticipatory medicines (AMs), remain at every stage of prescription, supply and use (Oliver et al., 2013, Tija et al., 2015, Faull et al., 2012, Wilson et al., 2014, Wilson and Seymour, 2013).

Patients and their FCGs report being inadequately informed and supported in medicines use (Oliver et al., 2013, Joyce et al., 2014, Payne et al., 2014). Inequalities in access and care provision persist for patients affected by conditions other than cancer and from ethnic and minority groups (CQC, 2013, Dixon et al., 2015, Calanzani et al., 2013). Healthcare professionals, including GPs and the community nurses who are most directly involved in patient care, are reported to lack confidence, engagement and training in managing terminal pain and other symptoms (Wilson et al., 2014, Payne et al., 2014). Inter-professional communication and coordination of services is sometimes poor, particularly relating to accessing medicines out of hours (Sheehy-Skeffington et al., 2014, Oliver et al., 2013, Faull et al., 2012, Wilson et al., 2014, Wilson and Seymour, 2013, Payne et al., 2014, Taubert and Nelson, 2010). References to community pharmacist (CP) involvement in managing EOLC medicines are rare, yet there is scope for much greater input and involvement of CPs in supporting patients, FCGs and HCPs to optimise EOLC medicines use in community care settings (Hussainy et

al., 2011, Smith et al., 2013). Lack of trust and communication between professionals and services can be a major obstacle to timely and effective delivery of AMs (Sheehy-Skeffington et al., 2014, Oliver et al., 2013, Faull et al., 2012). Links between community and secondary care providers and between usual care and out of hours providers are reported to be particularly unstable (Faull et al., 2012, Taubert and Nelson, 2010).

The transition to palliative care and the prescribing and subsequent administration of AMs is a very significant moment in the trajectory of advanced illness. Previous research has focused on single perspectives, e.g. of community nurses or informal carers at a single point in time (Ray and Street, 2005a). This will be a two and a half year exploratory study involving longitudinal family and friend centred case studies and multiple stakeholder perspectives of service operation within a complex network of care. It will include a particular focus on patients with morbidity other than cancer and from diverse ethnic and cultural groups, which have previously been under-researched. The study findings will make a substantial contribution to understanding how patients, FCGs and HCPs may be better supported in the confident prescribing, supply and management of EOLC medicines. They will identify ways in which inter professional communication and collaborative working may be improved, and the involvement of CPs increased to improve symptomatic control and quality of care for FCGs and the patients they support throughout the very difficult experience of terminal illness and dying at home.

The relevance and timely nature of the study is evident through its engagement with all of the ten research priorities identified in the recent NETTSC/ James Lind Alliance priority setting exercise for research priorities in palliative and end of life care (http://www.lindalliance.org/toptens.asp). These include research into out of hours care, equitable and universal access to palliative care, information and training to support carers and families supporting dying patients, training for HCPs to deliver palliative care, ensuring continuity of care for patients at the end of life, and establishing the best way to deliver palliative care for those with non-cancer diseases.
The study findings will contribute to the development of policy, education and professional practice to optimise medicines management in end of life care for patients being cared for and dying at home.

STUDY OBJECTIVES AND PURPOSE

PURPOSE

To explore how patients, with serious and terminal illness, their family and friend care givers and the health care professionals who support them, engage collaboratively in managing medicines prescribed for relief of symptoms towards the end of life and provide evidence from a detailed study of barriers, facilitators, information and training needs for the improved support at home of terminally ill people and their families.

PRIMARY OBJECTIVE

To explore how patients and family and friend care givers (FCGs), particularly from under-served and hard to reach groups, manage medicines prescribed for patients with serious and terminal illness being cared for and dying at home.

SECONDARY OBJECTIVES

- To compare and contrast the experience of symptom control and FCG involvement in medicines management for patients who have been referred to specialist palliative care services and those who have not.
- to establish what further support, information and training family and friend care givers and health care
  professionals need to feel confident in managing medicines for patients with serious and terminal illness being cared for and dying at home.
- to explore lay and professional stakeholder perspectives (including those of GPs, community pharmacists and nurses) about how community pharmacists (CPs) could be better integrated into the network of care and support for families and professionals in medicines management for serious and terminal illness and end of life care.
- to use the knowledge gained, from the perspective of all stakeholders, to make empirically founded recommendations for service development and effective commissioning to improve medicines management for patients with serious and terminal illness being cared for and dying at home and their family care givers.

STUDY DESIGN

A qualitative study with three work packages.

STUDY CONFIGURATION

Purposive samples recruited through general practices, community and hospital palliative care services, and hospices in Nottinghamshire and Leicestershire.

1. Stakeholder interviews (up to 65) with up to 25 bereaved FCGs and up to 40 HCPs with experience of managing EOLC medicines for patients dying at home.

2. Longitudinal family and friend case studies with up to 25 patients, FCGs and HCPs and up to three month follow up.

3. Two stakeholder workshops in Nottingham and Leicester.

STUDY MANAGEMENT

As Chief Investigator (CI), Kristian Pollock (KP) will assume overall responsibility for project management and budget and the scientific and ethical rigour of the research. The Research Fellow (Glenys Caswell (GC, 0.6FTE) will undertake day to day running of the project in close collaboration with, and under supervision of, KP and Eleanor Wilson (EW) and support from a part time Administrative Assistant (tba). GC, EW and KP will undertake collection and analysis of the data. All members of the research team will contribute to review, analysis and write up of the study findings and subsequent publications. Christina Faull (CF), Vincent Crosby (VC), Tony Avery (TA), and Asam Latif (AL) and Claire Anderson (CA) will facilitate participant recruitment through liaison with GP practices, hospices and specialist palliative and community care services and community pharmacies.

The core team (KP, EW and GC) will meet fortnightly to review progress, and more frequently as required. GC and EW will carry out day to day project management under close supervision from KP. GC and EW will lead on data collection with support from KP. JW and AL will contribute methodological expertise. CF, VC, CA, AL and TA will contribute clinical expertise and support recruitment and professional awareness of the project through their professional and service networks. Research team meetings, comprising all co-applicants, GC and administrative staff, will be scheduled approximately every two months throughout the project and to coordinate with PAG meetings. The close proximity of most members of the team will facilitate direct contact at meetings and informal discussion on an ad hoc basis. Teleconferencing facilities will be available at all meetings to enable participation of individuals who are not able to attend in person. The Project Advisory Group (PAG) will meet five times during the course of the study to oversee project management and study progress. The PAG will include all members of the research team, study collaborators, at least three PPI representatives (including AC and TC), representatives from NHS management and NHS Clinical Commissioning Groups (CCGs). An external Chair will be appointed who is independent of the research team. Additional meetings of the Research Team or PAG may be arranged to address specific issues that arise, e.g. recruitment difficulties. Study progress will be reported and discussed at meetings of the NCARE PPI Advisory Panel at approximately six monthly intervals. A written progress report will be submitted to the funder (HS&DR) at 6 monthly intervals.

All co-applicants will promote dissemination and implementation of the study findings through their capacity as educators, advisors and consultants with national policy programmes and networks.

The Chief Investigator (KP) has overall responsibility for the study and shall oversee all study management.

The data custodian will be the Chief Investigator (KP).

DURATION OF THE STUDY AND PARTICIPANT INVOLVEMENT

Study Duration:

Overall study duration: 30 months from 1st March 2017- 31st August 2019.

Recruitment period: 26 months from May 2017 - June 2019.

Participant Duration:
1. Stakeholder interviews (health care professionals and bereaved family and friend care givers and friends): a single interview of approximately 1 hour; HCPs inWP1 may elect to take part in joint interviews or focus group discussions rather than individual interviews

2. Family and friend case study participants: Each patient and FCG will be involved in baseline and one or two follow up interviews over a period of three months and optional observation of 1-3 home and clinic visits where issues of medicines management will be addressed. Nominated healthcare professionals will take part in at least one interview and optional follow up contacts over the 3 month follow up period.

3. Stakeholder workshop participants: attendance at a single workshop of 3 - 4 hours duration.

End of the Study

The study will end after the last of two stakeholder workshops has been completed.

SELECTION AND WITHDRAWAL OF PARTICIPANTS

Recruitment

Workpackages (WP) 1 and 2: Patients, FCGs and HCPs will be recruited through general practices, community and hospital palliative care services, and hospices in Nottinghamshire and Leicestershire.

Workpackage 1 Stakeholder interviews:
a. Healthcare professionals: will be identified through service managers who will send invitations and information packs about the study, asking individuals to contact the researchers directly if they are interested in taking part. Posters advertising the study will also be displayed on staff notice boards in relevant clinical areas and distributed through local professional and service newsletters and social media. Participants may also be recruited directly through professional networks (snowballing), or

following presentations about the study given by members of the research team to local services and practices.

b. Bereaved family and friend caregivers: will be identified primarily through GP practice and palliative care registers, hospices and caseloads of community and specialist palliative care professionals. Eligible caregivers will be sent an invitation and information pack from a named professional or manager from a service involved in the care of their deceased relative. Interested individuals will be asked to respond directly to the researchers. Details of the study, and a call for participants, will also be advertised on posters and featured in the newsletters of relevant organisations such as Public Face (http://emahsn.org.uk/public-involvement/public-face-newsletter/) Age UK, Carers Federation and CRUSE. Bereaved FCGs will be approached at least 8 weeks after the death of their relative and up to six months following.

Workpackage 2 Family and friend case studies:
A purposive sampling strategy will be employed to ensure recruitment of a culturally and socially diverse sample of patients and FCGs (including, for example, from BAME groups, or who are affected by serious mental health problems, social and economic disadvantage and other under-served communities), the majority of whom have had experience of conditions other than cancer.

Approximately equal numbers of participants will be recruited who have been a). Referred for specialist palliative care services and b). Managed within generalist community services. This will enable an exploratory comparison of the experience and service use of patients and FCGs affected by a wide range of disease groups and complexity of symptoms, with a particular focus on conditions other than cancer. It is possible that some patients in group b may be referred for specialist palliative care during the follow up period. Their experience will provide valuable insights into the triggers for such referral, and allow comparison of patients' and FCGs' experience of different services and medicines management throughout transitions of care. We will aim to incorporate diversity of age, location (rural/urban) social and domestic circumstances and make a particular effort to include patients from ethnic and minority groups. A professional translation service will be used where required to enable patients and FCGs who are not fluent English speakers to take part in the study.

Eligible patients and FCGs will be identified through GP practice and palliative care registers, hospices and caseloads of community and specialist palliative care professionals. Patients and family and friend carers will be sent an invitation and information pack from a named professional or manager from a service involved in the care. Interested individuals will be asked to respond directly to the researchers. The aim will be to recruit roughly equal numbers of cases including patients referred to specialist palliative care services and cared for within generalist community services and to achieve a sample characterised by social, economic and ethnic diversity, with the majority of patients primarily affected by illnesses other than cancer.

Workpackage 3: Participants with relevant expertise will be identified from a wide range of stakeholder groups with local, regional and national representation and sent a direct invitation from the researchers to take part in the study. Eligible participants will include: lay and professional participants in the study; academics, clinicians, NHS commissioners, educators, voluntary organisations.

Study recruitment will be supported by the East Midlands Clinical Research Network (EMCRN).

Information for participants

The investigator or their nominee, e.g. from the research team or a member of the participant's usual care team, will inform the participant or their nominated representative (other individual or other body with appropriate jurisdiction), of all aspects pertaining to participation in the study.

It will be explained to the potential participant that entry into the study is entirely voluntary and that their treatment, care and employment status will not be affected by their decision. It will also be explained that they can withdraw at any time. In the event of their withdrawal it will be explained that their data collected so far cannot be erased from the University server and we will seek consent to use the data in the final analyses where appropriate.

If needed, professional interpreter and translator services will be available throughout the study to assist with discussion of the research, the participant information sheets, and consent forms, but the consent forms and information sheets will be available printed in English language only.

Eligibility criteria

Participants for Workpackages (WP) 1 and 2 will be recruited through general practices, hospices, specialist palliative care services and community pharmacies in Nottinghamshire and Leicestershire.

WP1: Bereaved Family and Friend Caregiver interview eligibility criteria:

- Bereaved family caregivers and friends (FCG) of patients who have been cared for at home during a substantial part of the last 6 months of life.
- Aged 18, no upper age limit
- Patient's death occurred at least 8 weeks prior to invitation to take part in the study
- Ability to give informed consent
- Prioritisation of participants who are FCGs for deceased patients from minority, hard to reach and under-served groups (MHRG) e.g.
    a. Black, Asian and Minority Ethnic
    b. economically disadvantaged

c. affected by severe mental health problems
d. with experience of care for illnesses other than cancer.

WP1: Healthcare professional interview eligibility criteria:

- from specialist palliative care and community health care services with experience of providing care, prescribing, dispensing or administering medicines for patients with serious and terminal illness being cared for at home e.g. GPs, palliative care consultants, Community Pharmacists, community, specialist palliative care and district nurses with experience of managing EOLC medicines for patients dying at home.
- Aged 18 or over, no upper age limit
- Ability to give informed consent

WP1: Bereaved FCG exclusion criteria:

- Patient has died less than 8 weeks previously
- have not been substantially involved in supporting patients being cared for at home
- aged under 18
- lacking capacity to consent

WP1: HCP interview exclusion criteria:

- Lacking experience in providing care, prescribing, dispensing or administering medicines for patients with serious and terminal illness being cared for at home
- Aged under 18
- Lacking capacity to consent

WP2: Family and friend case studies:

Case studies will include patients, relatives/friends and others directly involved in their care and providing support in medicines management.

Eligibility criteria:

- Patients identified by a member of their clinical care team as likely to be within the last 6 months of life according to any of the following criteria:
    a. the SPICT (Supportive and Palliative Care Indicators) tool
    b. included on local palliative care registers including EPaCCS
    c. identified as amber on the Gold Standards Framework register.
    d. Being cared for at home
- FCGs of eligible patients who are significantly involved in providing patient care, including medicines management at home
- HCPs directly involved in providing support in medicines management to the patient
- Prioritisation of participants who are patients or FCGs of patients from minority, hard to reach and under-served groups (MHRG) e.g.
    a. Black, Asian and Minority Ethnic

b. economically disadvantaged
c. affected by severe mental health problems
d. with experience of care for illnesses other than cancer.

- Participants will be aged 18 or over, no upper age limit
- Participants having capacity to give informed consent

WP2 Family and friend case study exclusion criteria:

- Patients not identified as being within the last 6 months of life
- FCGs not involved in providing patient care including medicines management at home
- HCPs not involved directly involved in the patients care
- Aged under 18
- Lacking capacity to consent

WP3: Stakeholder workshops
Members of relevant stakeholder groups with experience and/or expertise of medicines management for patients being cared for at home at the end of life.

Eligibility criteria:

- Study participants (patients, FCGs and HCPs)
- Representatives of patients and family and friend care givers from local, regional and voluntary organisations such as Carers Federation, MND Association, Age UK
- Academics and educators with research interest in supporting patients being cared for at home at the end of life
- HCPs, health care managers, commissioners, community pharmacists,
- Aged over 18, no upper limit
- Ability to give informed consent

- WP3: Stakeholder workshops exclusion criteria:
- Stakeholders who lack direct, professional and/or research experience of medicines management for serious and terminally ill patients being cared for at home
- aged under 18
- lacking capacity to consent

Expected duration of participant participation

Study participants will be participating in the study as follows:

1. Stakeholder interviews: a single interview of approximately 1 hour; HCPs in WP1 may elect to take part in joint interviews or focus group discussions rather than individual interviews.

2. Family and friend case study participants: 1 - 3 interviews and optionally 1 – 3 observations over a follow up period of approximately 3 months (depending on the context and circumstances of each case).

3. Stakeholder workshop participants: attendance at a single workshop of 3 - 4 hours duration.

Participant Withdrawal

Participants may be withdrawn from the study either at their own request or at the discretion of the Investigator, on a temporary or permanent basis. The participants will be made aware that this will not affect their future care or employment. Participants will be made aware (via the information sheet and consent form) that should they withdraw the data collected to date cannot be erased and, with permission, may still be used in the final analysis.

In the event that a patient dies or participants withdraw consent during follow up, a pragmatic decision will be taken about the need to replace the case, depending on what stage in the study withdrawal takes place, and the viability of the case (i.e. how much data had been collected).

Informed consent

All participants will provide written and/or recorded informed consent before they participate in the study. Recorded consent may be obtained for telephone interviews or where illness/disability prevents participants from providing a signature. Written consent forms will be signed and dated by the participant before they enter the study. One copy of this will be kept by the participant, one will be kept by the Investigator.

The Investigator will explain the details of the study and provide a Participant Information Sheet, ensuring that the participant has sufficient time to consider participating or not. The Investigator will answer any questions that the participant has concerning study participation.

Cases may be recruited which consist only of FCGs and healthcare professionals in the event that the patient lacks capacity and plays no active part in the study. In cases where a patient lives alone and lacks capacity to consent to participation in the research, a personal consultee opinion will be obtained. If the consultee considers that the patient would be willing to take part in the study, the case will be established with primary input from informal and professional carers who will be present during research visits to observe care and communication about medicines in the patient's home. Where no personal consultee is available, advice will be sought from a professional consultee who knows the patient well. In such a case no interview would be sought with the patient, although the researcher will engage in conversation with the patient, should they wish to talk to us. The patient's medical records would not be accessed, but non-participant observations would be carried out and still photographs

taken as detailed in the section on study regimen. In some cases it may be that the patient's personal consultee will be participating in the study as their FCG, in other cases a personal consultee may be another family member who is not participating in the research. In a small number of cases it may be that the patient has no family members who are able or willing to take on the role of personal consultee. In such circumstances, a professional consultee will be approached for advice. A professional consultee will be someone who knows the patient well in a professional capacity, but who does not have any direct involvement in this research. In these cases the patient's involvement with the study will be the same as if we had sought advice from a personal consultee.

Patients with capacity who are recruited as case participants and who subsequently lose capacity will be withdrawn from active participation in the study. The case will continue with agreement to ongoing involvement from FCGs. Alternatively, if the FCGs wish to withdraw, the case will be closed.

The family and friend case studies involve recruitment and follow up of seriously ill patients and FCGs at a challenging time. The continuing willingness and ability of participants to remain in the study will be carefully monitored by the researchers through ongoing process consent. This involves being alert for signs of reluctance, burden or resistance among participants and periodic discussion and affirmation of their continuing support for the study or opportunity for withdrawal.

Should there be any subsequent amendment to the final protocol which might affect a participant's participation in the study continuing consent will be obtained using an amended Consent Form which will be signed by the participant.

STUDY REGIMEN

Workstream 1. *Stakeholder interviews.* Each professional and FCG participant will take part in a single qualitative interview of approximately one hour duration. Joint interviews or focus groups will be an option for HCPs according to their preference and convenience. Interviews with professional participants will take place in their place of work or university premises. The location of individual FCG interviews will be according to participants' preference and convenience. We anticipate this is likely to be home, but interviews could also be held at the work place, or on university premises or those of collaborating organisations such as LOROS or GP surgeries.

Workstream 2. *Family and friend case studies* involve baseline and follow up interviews and non-participant observation over a period of up to 3 months and review of medical records.

<u>Interviews</u>

The number of interviews conducted with each participant will be determined by the circumstances of each case. However, we anticipate that at least one baseline and follow up interview will be carried out with patients and FCG participants. Interviews may be with patients and FCGs separately, jointly or a combination, according to participant preferences and convenience. They may take place in the home,

workplace, clinic or university premises. If a patient dies during the follow up period a bereavement interview will be requested with the FCG after an appropriate time has elapsed after the death (at least eight weeks). Nominated HCPs will be invited to take part in at least one interview to discuss their involvement in the case. Follow up interviews will be requested as appropriate or necessary. Patients may nominate more than one FCG or HCP to take part in their case study. Each case will be explored in its own terms to yield valuable insights and learning and extend the range and diversity of experience recorded in the study: it is not necessary for cases to conform to a 'standard' composition. Consequently, patients who lack FCGs or are unwilling/unable to nominate specific health professionals will be eligible for inclusion in the study. It is possible that some patients may become too ill to take part in interviews, or may die, during this period, and that the greater part of the interview data relating to the case will be drawn from interviews with family and friend care givers (FCGs) and healthcare professionals (HCPs). We anticipate that each case will include ~5 interviews.

Participants will be asked for permission to audio record the interviews which will be carried out by GC, KP and EW. Recordings will be made on encrypted machines and copies stored on the secure University of Nottingham server before being deleted from the audio recorder. Anonymised transcripts of the interviews will be imported into the qualitative software package Nvivo11© to facilitate management and analysis of the data.

Non-participant observation

Direct observation of the interactions between patients, FCGs and HCPs is a powerful method of extending insight into how concerns are addressed and communicated. With participants' permission, and where this can be arranged, we will observe home and clinic visits between patients, FCGs, and healthcare professionals (such as GPs, specialist and community nurses, and, CPs) where issues of medicines management will be addressed. This method of data collection and triangulation has been successfully adopted by EW in a previous study of nurses' use of AMs in community and nursing home teams (Wilson et al., 2014). It is difficult to specify the number of observations to be undertaken in advance as this will depend on the willingness of individual participants and the logistics of arranging access. However, we will aim to carry out between 1 and 3 observations per case. With permission the observations will be audio recorded for subsequent transcription and detailed field notes will be written up by the researcher for inclusion in the Nvivo© database.

If participants agree, still photographs may be taken of objects that are relevant to the environment of care and their use and management of medicines. For example, photographs may show the array of medicines that the patient and their caregiver must manage, or any tools they use to help in that management. Photographs will not show people, and will be taken so as to obscure any identifying information. The use of photographs will aid in understanding the extent of the task that patients and their carers take on when managing medicines at home.

Patients who lack the capacity to give informed consent to active participation in the study may be included in the observations described above, and photographs may be taken. Advice will be sought from a personal or nominated consultee before this occurs.

Medical records

Patient permission will be sought to access relevant parts of their medical records for information relating to the prescription and use of medicines during the period of their involvement in the study. Records of patients who have withdrawn from the study because of lost capacity or for other reasons will not be accessed.

Workstream3. *Stakeholder workshops.* Participants will take part in a single workshop of 3 - 4 hour duration. This will involve a mixture of activities and interaction, including presentations, discussion and work group activities. With permission, parts of the workshop discussion and activities may be audio recorded or photographed. Recordings will be stored securely on the University server and sections may be transcribed and anonymised for analysis. Participants' permission will be obtained for the subsequent use of photographs in study reports or dissemination materials.

Compliance

The notion of compliance does not apply to participation in this qualitative study. Participants in the patient case studies will determine their preferred and convenient level of involvement in the research. There is no standard data set, and data collection will be driven by the context and circumstances of each case.

Criteria for terminating the study

There are no criteria for terminating this qualitative study.

ANALYSES

Methods

Workstream1. *Stakeholder interviews*

HCP interviews will explore participants' experience of:

a. prescribing, accessing and managing EOLC medicines (including AMs) for patients being cared for and dying at home.

b. involving and supporting patients and FCGs in managing medicines in the home, and understanding the aim and purpose of AMs where prescribed and used.

Bereaved FCG interviews will explore participants' experiences of these processes in relation to the care of their deceased relative, including their involvement and responsibility for managing medicines throughout the later stages of the illness, the communication and support received from professionals, and how well they felt the system coordinated care.

The qualitative software programme NVivo11© will be used to facilitate a thematic analysis of this data set based on the principle of constant comparison (Bazeley and Jackson, 2013, Charmaz, 2006). Analysis proceeds through an initial process of open coding, when segments of interview transcripts are allocated to one or more broad 'nodes' within NVivo to capture all text relating to an idea or topic. The coding frame is developed through an iterative process of reading, coding and discussion of the data to identify, compare and link 'themes' occurring within and across the two data sets involved in Workstream 1. After open coding has been completed, a more refined and selective process of coding on from individual nodes is undertaken to explore, differentiate, reorganise and relate the themes identified as of greatest relevance to the study objectives. These will be grouped hierarchically within broad categories representing key themes identified in each data set. Further exploration can be undertaken by comparing themes between each series of interviews to enable an understanding of the key issues relating to medicines management for bereaved carers and health professionals and the degree of difference, overlap and mutual understanding that exists between them.

2. *Patient case studies*

Case study methodology involves triangulation of different data sources and perspectives to build an in depth understanding of a complex phenomenon within a naturally occurring setting (Yin, 2008, Stake, 2006). Case study analysis will triangulate different data sources including baseline and follow up interviews with patients, FCGs and HCPs, observation, review of clinical records , and analysis of medicines prescribed and used (Yin, 2008). Detailed narratives will be constructed for each case as a synthesis of the entire body of triangulated data centering on each patient. These will be the basis for within and between case comparison, using matrix charting (Yin, 2008). In addition, each parallel data set within the case studies (patients, FCGs, HCPs) will be subject to a separate and comparative thematic analysis (Charmaz, 2006). Follow up interview data will go beyond cross-sectional and static accounts of specific participants and groups of stakeholders and will enable an understanding of how EOLC medicines are managed over time within a complex network of care. A social network analysis will be undertaken of how the work of medicines management is undertaken within the patient's home and through professional communication and interrelations within the wider network of services involved in each case (Cheraghi-Sohi et al., 2015, Vassilev et al., 2013, Ray and Street, 2005a, Ray and Street, 2005b, Early et al., 2000).

3. *Stakeholder workshops*

The purpose of these events will be twofold: a. as a means to disseminate findings to representatives from a wide range of stakeholders: patients, FCGs, HCPs, managers, commissioners, educators and representatives of regional and national voluntary sector organisations such as Age UK and the

Carers Federation. These, in turn, will be encouraged to disseminate awareness of the study findings and its implication for practice through their wider networks. b. as a forum to identify priorities for implementation and research and to initiate collaboration with members of the research team to develop further research proposals, training and information resources and strategies to implement the findings in education and practice at regional and national levels and for lay and professional audiences. Materials (observations, notes, workshop outputs, presentations and recordings) will be collated and synthesised to inform dissemination outputs of the study and the development of training and educational resources for professionals and family and friend care givers.

Sample size and justification

This is a qualitative study, in which the sample size is largely driven by the data, the circumstances of each case, and the analysis to which these give rise. It seeks to explore diversity of experience and the complexity of practice in real world settings rather than generalise findings from representative samples of the wider population. A sample of up to 40 HCPs and 25 FCGs (n= up to 65 interviews) in the Stakeholder interview series will provide a wide range of perspectives from different professional groups as well as ethnic and socio-economic backgrounds and different illness conditions. Similarly, the complex data sets involved in 25 family and friend case studies will yield a very substantial body of qualitative data (n=~100- 120 interviews) which will go beyond cross-sectional and static accounts of specific participants and groups of stakeholders and will enable an understanding of how EOLC medicines are managed over time within a complex network of care.

ADVERSE EVENTS

The occurrence of an adverse event as a result of participation within this study is not expected and no adverse event data will be collected.

ETHICAL AND REGULATORY ASPECTS

Recruiting severely ill patients and recently bereaved FCGs to take part in research projects presents challenges, and will require flexibility and sensitivity in recruiting and engaging participants in a way, and at a level, that they can comfortably accommodate. All participants will be given as long as they require to consider the information provided about the study, and whether they wish to take part in it. The study will be adopting a research design and method which has been successfully employed in previous studies carried out by the applicants and other researchers (Wilson et al., 2014, Wilson, 2013, Pinnock et al., 2011, Pollock and Wilson, 2015). The study will be carried out by an experienced research team with clinical and research expertise in palliative care, death and dying as well as knowledge and experience of research ethics. KP is a past and AL a current member of an NHS REC and KP is currently Research Ethics Officer for the School of Health Sciences at Nottingham University.

The study will be presented as research into the home management of medicines for patients affected by serious illness. Initial discussion with patient and FCG participants will be phrased in general terms and great care will be taken to allow respondents to reveal their understanding of their condition and prognosis and to frame the interview discussion within the terms of their understanding, rather than assume that the individuals concerned have understood and accepted professional formulations of what these may be. The study title and associated participant information sheets and consent forms will indicate an interest in how patients and carers manage medicines prescribed for serious illness, and the support they receive from different professional services. It will not refer to a focus on end of life care specifically. Members of the NCARE Patient and Public Advisory Panel have reviewed the content of these documents and their advice has been incorporated.

Previous research has reported that participants find taking part in qualitative research to be a positive experience, even when they anticipate that this might involve discussion of distressing issues. Indeed, some people find the opportunity to reflect on their experience in the 'neutral' context of a research interview to be helpful, and may value the opportunity to contribute to a research effort which may benefit others (Cook, 2001, Lowes and Gill, 2006). Consequently, it has been argued that excluding vulnerable patients from the opportunity to take part in research on the basis of assumptions made about their experiences and preferences is discriminatory and restrictive (Addington-Hall, 2002, Adshead, 2008). Information sheets will clearly state that discussing the experience of serious illness may be distressing, and ask participants to consider carefully how they feel about this prospect before deciding to take part. Participants will be assured that their participation is entirely voluntary, and that they may stop an interview or withdraw from the project at any time. We are well aware of the need to approach contacts with patients and carers with the utmost care and sensitivity, and to be suitably responsive to patient and carer reactions and preferences throughout the research.

The study will be presented as research into the home management of medicines for patients affected by serious illness. Initial discussion with patient and FCG participants will be phrased in general terms and great care will be taken to allow respondents to reveal their understanding of their condition and prognosis and to frame the interview discussion within the terms of their understanding, rather than assume that the individuals concerned have understood and accepted professional formulations of what these may be.

In the event that participants should disclose information which reveals a serious risk of harm to themselves or others, the matter would, in the first instance be discussed with the participant and within the research team. Senior clinical managers would be informed if this was considered to be necessary and appropriate. However, the breaking of confidentiality would only be undertaken in exceptional circumstances in accordance with professional guidelines of the British Sociological Association and Association of Social Anthropologists of the UK and Commonwealth.

Researchers undertaking interviews in participants' own homes will adhere to the lone working policy of the University of Nottingham.

ETHICS COMMITTEE AND REGULATORY APPROVALS

The study will not be initiated before the protocol, consent forms and participant information sheets have received approval / favourable opinion from the Research Ethics Committee (REC), and the respective National Health Service (NHS) Research & Development (R&D) department. Should a protocol amendment be made that requires REC approval, the changes in the protocol will not be instituted until the amendment and revised informed consent forms and participant information sheets (if appropriate) have been reviewed and received approval / favourable opinion from the REC and R&D departments. A protocol amendment intended to eliminate an apparent immediate hazard to participants may be implemented immediately providing that the REC are notified as soon as possible and an approval is requested. Minor protocol amendments only for logistical or administrative changes may be implemented immediately; and the REC will be informed.

The study will be conducted in accordance with the ethical principles that have their origin in the Declaration of Helsinki, 1996; the principles of Good Clinical Practice, and the Department of Health Research Governance Framework for Health and Social care, 2005.

INFORMED CONSENT AND PARTICIPANT INFORMATION

The process for obtaining participant informed consent will be in accordance with the REC guidance, and Good Clinical Practice (GCP) and any other regulatory requirements that might be introduced. The investigator or their nominee and the participant shall both sign and date the Consent Form before the person can participate in the study.

The participant will receive a copy of the signed and dated forms and the original will be retained in the Study records.

The decision regarding participation in the study is entirely voluntary. The investigator or their nominee shall emphasize to them that consent regarding study participation may be withdrawn at any time without penalty or affecting the quality or quantity of their future medical care, or loss of benefits to which the participant is otherwise entitled. No study-specific interventions will be done before informed consent has been obtained.

The investigator will inform the participant of any relevant information that becomes available during the course of the study, and will discuss with them, whether they wish to continue with the study. If applicable they will be asked to sign revised consent forms.

If the Consent Form is amended during the study, the investigator shall follow all applicable regulatory requirements pertaining to approval of the amended Consent Form by the REC and use of the amended form (including for ongoing participants).

RECORDS

Case Report Forms

Each participant will be assigned a unique alpha numeric study identity code number, for use on CRFs, other study documents and the electronic database.

CRFs will be treated as confidential documents and held securely in accordance with regulations. The investigator will make a separate confidential record of the participant's name, date of birth and Participant Study Number, to permit identification of all participants enrolled in the study, in case additional follow-up is required.

CRFs shall be restricted to those personnel approved by the Chief or local Investigator and recorded as such in the study records.

CRFs are used to record study data and are an integral part of the study and subsequent reports. The CRFs, therefore, must be legible and complete.

Source documents

Source documents shall be filed at the investigator's site and may include but are not limited to, consent forms, study records, field notes, interview transcriptions and audio records. A CRF may also completely serve as its own source data. Only study staff shall have access to study documentation other than the regulatory requirements listed below.

Direct access to source data / documents

The CRF and all source documents shall made be available at all times for review by the Chief Investigator, Sponsor's designee and inspection by relevant regulatory authorities.

DATA PROTECTION

All study staff and investigators will endeavour to protect the rights of the study's participants to privacy and informed consent, and will adhere to the Data Protection Act, 2018. The CRF will only collect the minimum required information for the purposes of the study. CRFs will be held securely, in a locked room, or locked cupboard or cabinet. Access to the information will be limited to the study

staff and investigators and any relevant regulatory authorities (see above). Computer held data including the study database will be held securely and password protected. All data will be stored on a secure dedicated web server at the University of Nottingham. Access will be restricted by user identifiers and passwords (encrypted using a one way encryption method).

Information about the study in the participant's medical records / hospital notes will be treated confidentially in the same way as all other confidential medical information.

Electronic data will be backed up every 24 hours to both local and remote media in encrypted format.

QUALITY ASSURANCE & AUDIT

INSURANCE AND INDEMNITY

Insurance and indemnity for clinical study participants and study staff is covered within the NHS Indemnity Arrangements for clinical negligence claims in the NHS, issued under cover of HSG 96/48. There are no special compensation arrangements, but study participants may have recourse through the NHS complaints procedures.

The University of Nottingham as research Sponsor indemnifies its staff, research participants and research protocols with both public liability insurance and clinical trials insurance. These policies include provision for indemnity in the event of a successful litigious claim for proven non-negligent harm.

STUDY CONDUCT

Study conduct may be subject to systems audit for inclusion of essential documents; permissions to conduct the study; CVs of study staff and training received; local document control procedures; consent procedures and recruitment logs; adherence to procedures defined in the protocol (e.g. inclusion / exclusion criteria, timeliness of visits); accountability of study materials and equipment calibration logs.

STUDY DATA

Monitoring of study data shall include confirmation of informed consent; source data verification; data storage and data transfer procedures; local quality control checks and procedures, back-up and disaster recovery of any local databases and validation of data manipulation. The Study Coordinator, or where required, a nominated designee of the Sponsor, shall carry out monitoring of study data as an ongoing activity.

Study data and evidence of monitoring and systems audits will be made available for inspection by the REC as required.

RECORD RETENTION AND ARCHIVING

In compliance with the ICH/GCP guidelines, regulations and in accordance with the University of Nottingham Code of Research Conduct and Research Ethics, the Chief or local Principal Investigator will maintain all records and documents regarding the conduct of the study. These will be retained for at least 7 years or for longer if required. If the responsible investigator is no longer able to maintain the study records, a second person will be nominated to take over this responsibility.

The study documents held by the Chief Investigator on behalf of the Sponsor shall be finally archived at secure archive facilities at the University of Nottingham. This archive shall include all anonymised audio recordings, study databases and associated meta-data encryption codes.

DISCONTINUATION OF THE STUDY BY THE SPONSOR

The Sponsor reserves the right to discontinue this study at any time for failure to meet expected enrolment goals, for safety or any other administrative reasons. The Sponsor shall take advice as appropriate in making this decision.

STATEMENT OF CONFIDENTIALITY

Individual participant medical or personal information obtained as a result of this study are considered confidential and disclosure to third parties is prohibited with the exceptions noted above.

Participant confidentiality will be further ensured by utilising identification code numbers to correspond to data in the computer files.

If information is disclosed during the study that could pose a risk of harm to the participant or others, the researcher will discuss this with the CI and where appropriate report accordingly.

Data generated as a result of this study will be available for inspection on request by, the University of Nottingham representatives, the REC, local R&D Departments and the regulatory authorities.

PUBLICATION AND DISSEMINATION POLICY

We will use our professional networks to disseminate the study findings to NHS clinicians, service users, providers, commissioners and educators regionally and nationally, through a variety of different media.

Dissemination events

Stakeholder workshops in Nottingham and Leicester will disseminate the findings to patients, FCGs, HCPs, managers, commissioners, educators and representatives of regional and national voluntary sector organisations such as Age UK and the Carers Federation. Workshop participants will be invited to develop proposals for working collaboratively with members of the research team to implement the findings in education and practice at regional and national levels and for lay and professional audiences, identify priorities for implementation and research and to promote the learning from the study in policy and practice guidelines.

Project website and newsletters

A project webpage on the NCARE website (https://nottingham.ac.uk/research/groups/ncare/index.aspx) will give details of the study and its progress as well as links to project outputs and publications, including a summary of findings. During the study, biannual newsletters will report progress. These will be posted on the project website and also mailed directly to stakeholder organisations and participants.

Conferences

The study findings will be presented to a wide range of regional, national and international conferences and networking events involving professional, academic and public audiences. These will include the Palliative Care Congress, European Association of Palliative Care, RPSGB, LOROS and SRCC conferences and seminars.

Publications

The team has a strong track record of publishing in high impact international peer reviewed journals such as BMJ, Palliative Medicine, and Age and Ageing. We will also submit articles to professional journals such the Pharmaceutical Journal and Nursing Times and public engagement organisations such as Involve. A detailed report of the completed project produced for the NIHR library will be published and freely available on the NIHR website.

Media

We will work with the media dissemination networks (including blogs and social media) of our collaborating organisations (LOROS, SRCC; Carers Fed) and national organisations such as the National Council for Palliative Care and the Palliative Care Research Association as well as CLAHRC East Midlands and the University of Nottingham Press Office to make the findings widely available.

In all disseminated outputs, care will be taken to conceal the identity of study participants.

USER AND PUBLIC INVOLVEMENT

Patient and Public Involvement is central to the project and in ensuring that it remains grounded in the concerns and experience of patients and FCGs. The project has been endorsed by the NCARE Research Group Patient and Public Involvement Advisory Panel who will continue to support the study throughout its duration. Members have provided verbal and written feedback on the proposal, participant information sheets and consent forms. A written review of the proposal was also received from a lay member of the Research Development Service. AC (a member of the PPI advisory panel) is a study co-applicant. He has contributed to, and approved, the Plain English Summary section of the application and undertaken review and comment on the protocol and associated documents. The project has also been discussed with senior members of the Carers Federation, a voluntary organisation with a proactive profile in providing services, training and support for carers supporting family members affected by a wide range of health issues, including terminal illness (http://www.carersfederation.co.uk). The Carers Federation confirmed the value and relevance of the research question and will support the study. Trish Cargill, Chair of the Carers Federation Board, is a collaborator on the project and will coordinate direct involvement of CF members through a series of focus group discussions and verbal and written review of study findings and project reports.

STUDY FINANCES

Funding source

This study is funded by the NIHR Health Service and Development Research programme.

Participant stipends and payments

Participants will not be paid to participate in the study. Travel expenses will be offered for any hospital visits in excess of usual care.

SIGNATURE PAGES

Signatories to Protocol:

Chief Investigator: (name)____Kristian Pollock _____

Signature:____ _____

Date: 16.8.2018_____

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