PenCLAHRC Question Prioritisation 2014

Priority briefings index

As before, when considering the question, we ask you to think about the PenCLAHRC criteria for research prioritisation:

- The size of the health problem
- The potential for health improvement from answering the research question
- The practicality of answering the research question
- Whether the South West is a good place to do this research
- Alignment with local healthcare priorities.

PRIORITY BRIEFING ID 17

The purpose of this briefing paper is to aid stakeholders in prioritising topics to be considered by PenCLAHRC for further evaluation and/or research. This paper was compiled in 2-3 days. The following resources were searched to find this evidence: TRIP database, NICE Evidence, PROSPERO (for systematic review protocols), The Cochrane Library databases, MEDLINE, EMBASE, CINAHL, Health Management Information Consortium (HMIC) and the Current Controlled Trials registry. The briefing is in four parts:

i. General context and definitions
ii. The question in a structured format
iii. What the research evidence says
iv. Alignment with PenCLAHRC research priority criteria

QUESTION: Are community rapid intervention services effective in preventing acute hospital admissions in those > 65 years ?

General context and definitions: Sixty-five per cent of people admitted to hospital are above 65 years of age.[1] In addition 80% of emergency admissions who have a length of hospital stay greater than 2 weeks are in the over-65 age group.[2] Admissions to hospital are an increasing source of pressure on health system resources in the UK. Consequently new models of care that could assist in the avoidance of hospital admissions, particularly in the elderly, are increasingly being sought. A Delphi study to elicit the views of an expert panel of health professionals on the interventions that were most helpful in reducing unplanned admissions found that the highest-rated interventions involve the direct delivery of rapid access care in the community.[3]

Community rapid intervention services, a component of "intermediate care", are varied in design but can be defined as being "designed to prevent avoidable acute admissions by providing rapid assessment/diagnosis for older people referred from GPs, A&E, NHS Direct or social services and (if necessary) rapid access on a 24-hour basis to short-term nursing/therapy support and personal care in the patient's own home, together with appropriate contributions from community equipment services and/or housing-based support services".[4]

The question in a structured format: The research question could be framed in the following way:

Population:	Acutely unwell individuals in the community aged > 65yrs (may or may not include those resident in care homes within the community)
Intervention:	Access to community rapid response team services
Comparator:	Usual care
Outcomes of Interest:	Admissions to hospital, Quality of life, Healthcare costs

What the research evidence says: There is very little peer reviewed evidence for this topic. There have been no published systematic reviews or controlled trials of rapid response services within the community. No peer reviewed published literature pertaining to implementation of rapid response services in the community, or qualitative data regarding barriers and facilitators of such services was located. There are, however, numerous case studies within the grey literature of pilot programmes of rapid intervention services across the UK. For example, in 2011 QIPP Evidence (published by NHS Evidence and evaluated by NICE) reviewed the Rapid Response Service (RRS) established in Bristol in 1998.[5] This is an intermediate tier, multi-disciplinary health and social care service set up to assess, treat and support individuals in their own home, avoiding admission to hospital or residential care. The health system saving achieved in 2008/09 was £3.6 million, which equated to £832,600 per 100, 000 of population. The savings were in cash released to the PCT through avoiding paying for hospital admissions. The report further acknowledged that the savings achieved in 08/09 are typical of what the service has achieved since its creation. An update of this Bristol service, produced by NHS Benchmarking, shows the Rapid Response element of the service continues to work successfully, preventing over 4000 admissions per year.[6]

In London and Kent, Urgent Care Social Enterprise introduced a clinical home-visiting service in which rapid response teams (RRTs) helped patients to manage their conditions in their own homes, or in nursing or residential homes, to avoid unnecessary hospital admissions.[7] Between October 2009 and March 2010, only 109 (6%) of the 1,814 patients assessed by RRT clinicians required immediate referral to an emergency department. Meanwhile, 1,487 (82%) patients were assessed as clinically safe to be treated in the community, which the authors claimed meant that interventions by hospital- or community-based healthcare professionals were avoided. A community-based admissions avoidance pilot scheme, called HomeFirst, was started in Hertfordshire in January 2013. Urgent 'rapid response' assessments took place in patients' homes by an integrated health and social care multi-disciplinary team, led by a geriatrician. After 9 months, 619 patients had been referred into the system, 85% of which were able to be managed in the community.[8] The most common reasons for rapid response referral were urinary and respiratory infections (28%), falls and reduced mobility (22%), social care breakdown (12%) and frailty (8%).

In 2012, a rapid response service was launched in the Exeter area so patients could be assessed in their own homes rather than be admitted to hospital (http://www.northdevonhealth.nhs.uk/acute-community-team/). The first five months of Rapid Assessment at Home (RAAH) saw 175 referrals made, of which 145 (83%) were accepted, with patients ranging from 69 to 101 years of age. Of those patients accepted, 95% avoided admission to hospital and 97% were assessed within two hours. Average length of intervention was 6.9 days. Follow-up at six weeks found 70% still at home, 8% in residential care, 8% in the RD&E, and 6% in Exeter Community Hospital or in intermediate care. The remaining 8% had died.

In 2012, a multidisciplinary group including the British Geriatrics Society, Royal College of Nursing, Royal College of Physicians, Royal College of General Practitioners, College of Occupational Therapists and others, put together an overview of the issues relating to 'urgent and emergency care for the elderly'.[9] Called the *"Silver Book"*, the review sets out recommendations for reducing emergency admissions and puts forward a set of minimum standards, three of which relate specifically to rapid response services. These are: i) when there is an urgent or emergency care need, frail older people, their carers or professionals involved in their care should only need to make one phone call to a central telephone number to mobilise a '24/7 integrated health and social care response' to address their needs, be they physical, psychological, social or to support carers; ii) a 24/7 integrated health and social care response should include an initial contact by the integrated rapid response team on the telephone within 30 minutes and an appropriate rapid assessment within 2 hours (14 hours overnight) with the necessary arrangements instituted to address the older person's acute health and social care needs and the support needs of their dependants or carers over the following 24 hours; and iii) there should be a '24/7 Integrated Rapid Response Team' staffed by health and social care professionals. Key roles include prescribing, nursing, occupational therapy, physiotherapy and social care. An integrated rapid response team coordinating care in the first 24 hours could then put into motion other measures and assessments to support recovery and independence.

Ongoing studies/ Trials in progress: No ongoing or planned trials were found in the sources searched. Two related reviews are in progress, both of which commenced in 2014: i) A systematic review of interventions to reduce urgent care and unplanned admissions in rural areas (*Brainard et al., PROSPERO CRD42014010508* and ii) An overview of systematic reviews of technologies* to reduce unplanned hospital admissions among adults. (*Bobrovitz et al., PROSPERO: CRD42014014779*). *Technologies to be considered in this review include: pharmacological agents; biologics; devices; equipment or supplies; clinical or surgical procedures; diagnostic tests; screening programs; information provision; and access or organizational strategies.

How does this fit with PenCLAHRC research priority criteria?

Size of the health problem: Emergency admissions (admissions that are not predicted and happen at short notice because of perceived clinical need) are rising, with 5.3 million emergency admissions recorded in 2012/13, an increase of 1.8 per cent from the previous year.[10] Eighty per cent of emergency admissions who have a length of hospital stay greater than two weeks are patients in the over-65 age group.[2] Ambulatory or primary care sensitive conditions (ACSCs) are those for which hospital admission could be prevented by interventions in primary care [3]. ACSCs account for 16 per cent of all emergency hospital admissions in England and thirty percent of ACSCs are individuals > 75 years of age [11]. ACSCs cost the NHS £1.42 billion annually.[11]

The potential for health improvement: The case studies documented above suggest that rapid response services in the community can result in significant savings to the health care system along with increased patient satisfaction. However, the different outcome measures presented and case study nature of the evidence, make it difficult to project any robust estimates. The variety of service designs that have been implemented also limit the ability to draw conclusions about which aspects of the rapid response intervention are most effective, and which population benefits most.

The practicality of the research question: It is likely that components of rapid response services are already incorporated within many intermediate care services throughout the South West, for example, the Rapid Assessment at Home (RAAH) detailed above in Exeter. In Somerset, there is the Community Rapid Response team which provides short term packages of care in people's own homes for up to 14 days for those who have an acute health need (see http://www.nscphealth.co.uk/services/community-rapid-response). The Royal Cornwall Hospitals Trust are in the process of considering a range of options for the provision of community-based urgent care services.[12]

Whether the South West is a good place to do this research: The South West Peninsula has an older population than the England average. According to the Projecting Older People Population Information System, by the Institute for Public Care and Oxford Brooks University (www.poppi.org.uk), in 2014 there are over 1.14 million people aged over 65 living in the South West, of which 165, 000 are aged over 85, a third of which are aged over 90. By 2025 there is forecast to be a 25 per cent rise in people aged over 65, and a 50 per cent rise in those aged over 90.

Alignment with local health priorities: This will be different across the South West region and between organisations. Please consider the briefing in line with your local priorities.

GUIDELINES & GOVERNMENT STATEGIES relating to this area:

Improving the quality and safety of urgent and emergency care, including reducing unplanned admissions, is outlined as a priority in the NHS Commissioning Report *Everyone Counts: Planning for Patients 2013/14*.[13]

The NHS England '*Urgent and emergency care review'* from 2013[14] concluded that there is a clear need to adopt a whole-system approach to commissioning more accessible, integrated and consistent urgent and emergency care services to meet patients unscheduled care needs

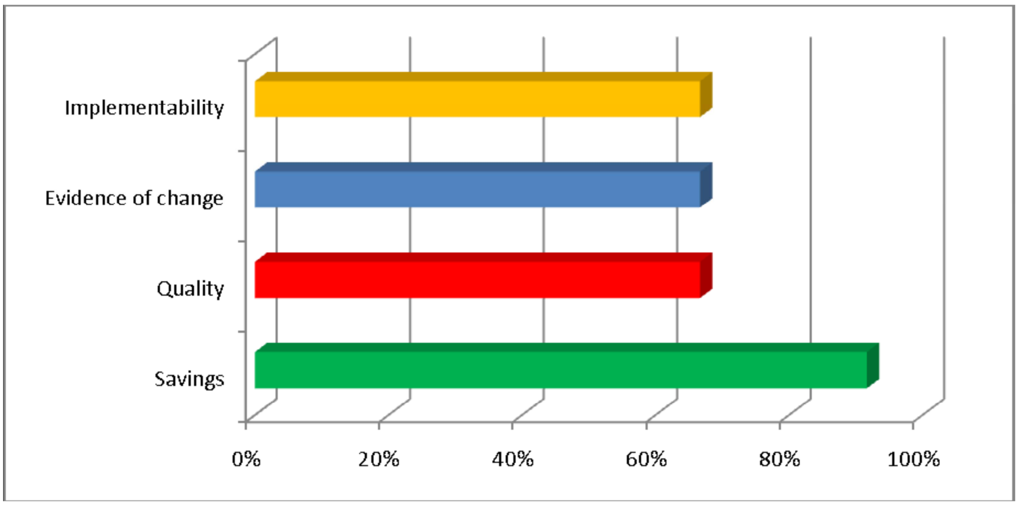
Relevant Abstracts:

QIPP Evidence: Evaluation of 'Rapid Response Services: intermediate tier, multi-disciplinary health and social care service'. *QIPP Evidence. Rapid Response Services: intermediate tier, multi-disciplinary health and social care service 2011.*

Service: An intermediate tier, multi-disciplinary health and social care service that responds rapidly to a health or social care crisis. The Rapid Response team assess, treat and support the individual in their own home, avoiding an unnecessary and more costly admission into hospital or residential care. The service is a partnership between Bristol PCT and Bristol City Council. Cost savings: The savings to the PCT can be calculated by comparing the cost of treatment in hospital, using HRG codes, against the cost of providing the community-based service. In 2008/09, the service achieved savings for the PCT of £3.6m, having taken into account the cost of providing the service.

This evaluation is based on the degree to which the initiative meets the QIPP criteria of savings, quality, evidence and implementability; each criterion is given a score which are then combined to give an overall score. The overall score is used to identify the best examples, which are then shown on NHS Evidence as 'recommended' or 'highly' recommended'. Our assessment of the degree to which this particular case study meets the criteria is represented in the evidence summary graphic below.

PRIORITY BRIEFING ID 17



S. Mani et al. (2014). EMERGENCY ADMISSION PREVENTION: DATA FROM 619 PATIENTS REFERRED TO A NEW COMMUNITY BASED ADMISSIONS AVOIDANCE SCHEME INTEGRATING HEALTH AND SOCIAL CARE. Age & Aging 43: ii1–ii11, doi: 10.1093/ageing/afu124

Background: With an increasingly ageing population new strategies are vital to manage frail older patients with multiple co-morbidities in the community, avoiding hospital admissions and preventing associated complications. Various organisations and think tanks have devised strategies to achieve this. The Kings Fund (Purdy S, 2010) highlights the potential benefits of integrating health and social care. The Silver Book (www.bgs.org.uk/campaigns/) endorses community-based services with rapid response and the Future Hospitals Commission (www.rcplondon.ac.uk) recommends treating patients in the community whenever possible.
Innovation: Since January 2013 "HomeFirst" has been operational throughout the Hertsmere district. It is an innovative community-based admissions avoidance pilot. Patients are referred for an urgent 'rapid response' (RR) assessment or long-term management and optimisation of disease state via a virtual ward (VW). Assessments take place in patients' homes by an integrated health and social care multi-disciplinary team, led by a geriatrician.
Evaluation: Between January and October 2013 we received 440 RR and 179 VW referrals, of which 90% were considered appropriate. The average age was 83.9 years. Most patients referred to the RR service were from patients' general practitioners (72%). Other sources included intermediate care, Accident and Emergency and the ambulance service. The most common reasons for RR referral were urinary and respiratory infections (28%), falls and reduced mobility (22%), social care breakdown (12%) and frailty (8%). To date, 85% of patients have been managed in the community, avoiding hospital admission. Of the patients surveyed 78% strongly agreed and 17% agreed that they would recommend HomeFirst to family and friends.
Conclusions: This innovative project highlights that a community based multi-disciplinary team integrating health and social care can be successful at reducing hospital admissions of older people with multiple co-morbidities. This reduces the associated complications of hospital admission for the patient and the financial burden of emergency admissions to local Trusts.

References:

1. Thompson J. For frail elderly care, there's no place like home. British Journal of Nursing 2014;23(5):252

2. Cornwell J. The care of frail older people with complex needs: time for a revolution. London: KIngs Fund, 2012.

3. Purdy S, Griffin T, Salisbury C. Prioritizing ambulatory care sensitive hospital admissions in England for research and intervention: a Delphi exercise. Primary Health Care Research & Development 2010;11:41-50

4. Department of Health. National Service Framework for Older People. London: Department of Health, 2001.

5. QIPP Evidence. Rapid Response Services: intermediate tier, multi-disciplinary health and social care service 2011.

6. NHS Benchmarking. Intermediate care case studies: Bristol CCG, Bristol City Council and Bristol Community Health intermediate tier, multi-disciplinary health and social care service, 2013. http://www.nhsbenchmarking.nhs.uk/CubeCore/.uploads/icsurvey/NAIC%202013/Casestudies/IntermediateCareCaseStudyBristolCCGandBristolCityCouncil.pdf.

7. Mayo A, Allen A. Reducing admissions with social enterprises. Emergency Nurse 2010;18(4):14-7

8. Mani S, Bertfield D, Ritchie A, et al. Emergency admission prevention: data from 619 patients referred to a new community based admissions avoidance scheme integrating health and social care. Age and Ageing 2014;43(suppl):ii1

9. British Geriatrics Society, et al. Quality care for older people with urgent and emergency care needs: the silver book. London, 2012.

10. Health and Social Care Information Centre. Hospital Episode Statistics, Admitted Patient Care, England - 2012-13 [NS]: Health and Social Care Information Centre, 2013.

11. Tian Y, Dixon A, Haiyan G. Emergency hospital admissions for ambulatory care-sensitive conditions: identifying the potential for reductions. London: The Kings Fund, 2012.

12. NHS Kernow. Cornwall & Isles of Scilly: Starting Well, Living Well and Aging Well. Available from: http://rcht.nhs.uk/DocumentsLibrary/RoyalCornwallHospitalsTrust/ChiefExecutive/TrustBoard/Minutes/1415/201407/Appendix06CornwallIslesofScillyIntegratedPlan.pdf: NHS Kernow, 2014.

13. NHS Commissioning. Everyone Counts: Planning for Patients 2013/14. Redditch: NHS England, 2013.

14. NHS England. High quality care for all, now and for future generations: Transforming urgent and emergency care services in England. London: NHS England, 2013.

PRIORITY BRIEFING ID 29

The purpose of this briefing paper is to aid stakeholders in prioritising topics to be considered by PenCLAHRC for further evaluation and/or research. This paper was compiled in 2-3 days. The following resources were searched to find this evidence: TRIP database, NICE Evidence, PROSPERO (for systematic review protocols), The Cochrane Library databases, MEDLINE, EMBASE, CINAHL, Health Management Information Consortium (HMIC) and the Current Controlled Trials registry. The briefing is in four parts:

i. General context and definitions
ii. The question in a structured format
iii. What the research evidence says
iv. Alignment with PenCLAHRC research priority criteria

QUESTION: Is a home visit service from a community pharmacist effective and cost effective for the frail homebound elderly?

General context and definitions: For many older adults, the ability to remain independent in one's home depends on the ability to manage medication. Non-adherence to medication regimens is a major cause of nursing home placement of frail older adults. Approximately 30 percent of hospital admissions of older adults are medication related, with more than 11 percent attributed to medication non-adherence and 10–17 percent related to adverse drug reactions.[1] Many elderly patients are unable to attend pharmacies and may not be able to rely on others to collect prescriptions. A home visit service by community pharmacists for those unable to visit local pharmacies may have both health and resource benefits.

The question in a structured format: The research question could be framed in the following way:

Population:	The frail elderly who are housebound
Intervention:	A home visit service by the local community pharmacist
Comparator:	Usual practice (no home visit by pharmacist)
Outcomes of Interest:	Healthcare cost (e.g. hospital admission); Medication adherence; Prescription costs; Quality of life; Cost to the pharmacist

What the research evidence says: There have been no systematic reviews of community pharmacist home medication review services for the elderly living in the community. Two systematic reviews of community pharmacist interventions to improve medication adherence and/or reduce adverse events and hospital admissions were located from 2005/6, but neither review was exclusive to elderly populations, often involving disease specific medication adherence, and neither provided sufficient detail to establish whether there was any effect of there being a home visit component to the interventions.[2,3] Indeed, from the limited information provided, the majority of studies in both reviews appeared to be predominantly pharmacist-led clinics held at either GP surgeries or at the local pharmacies themselves. One comprehensive but non-systematic review of clinical pharmacy services in the home in 2005 concluded that more research needed to be conducted to provide firm evidence of their value and cost effectiveness.[4]

There have however been several reasonably sized randomised controlled studies on this topic, primarily from the UK, Australia and the United States. Trials have either assessed the effectiveness of community pharmacist home visits with medication review in reducing readmission to hospital for the elderly recently discharged, or have assessed the effects of a home visit service to vulnerable elderly populations already within the community. The results have been mixed. Some have shown reductions in visits to health practitioners [5,6] improved identification and resolution of medicine related problems[7], and improved compliance.[8,9] For example, a prospective, randomized, comparative study involving 80 community dwelling patients in Melbourne, Australia reported that a home visit service by pharmacists resulted in 45% of patients having their drugs either reduced or stopped, and 38% surplus medication removed[7], aiding safe disposal of drugs and potentially reducing toxicity and environmental damage. In contrast, other trials have shown no effect on hospital or care home admissions[10], or on medicine costs and health related quality of life.[11] For example, a UK study of more than 800 patients over 80 years old receiving an intervention involving two home visits by a pharmacist within two weeks and eight weeks of discharge to educate patients and carers about their drugs, remove out-of-date drugs, and inform general practitioners of drug reactions or interactions, resulted in more deaths and no improvement in quality of life, compared to usual care [12]. Findings related to cost effectiveness have also been mixed.[10,13] Most of the studies have involved reasonable follow-up lengths of six to twelve months. Without further investigation into the individual trial details and synthesis of the findings, it is not possible to tease out whether there were any commonalities between the interventions that showed benefit, or alternatively those that showed no change or benefit. In terms of feasibility, most studies which assessed satisfaction, found the option of a home service to be valued by general practitioners, community pharmacists and the elderly living in the community.[13]

Ongoing studies/ Trials in progress: There are no registered planned or ongoing trials of this topic in the databases searched.

How does this fit with PenCLAHRC research priority criteria?

Size of the health problem: In 2006-2007, the NHS in England spent £10.6 billion on drugs, around three quarters of which was in primary care.[14] It is thought that between a half and third of all medicines prescribed for long term conditions are not taken as recommended. Adverse drug reactions have a major impact on both the NHS and the health of the population, accounting for 6% of all hospital admissions, 4 in 100 hospital bed days, and costs of up to £466 million a year.[15] Adverse drug reactions are common in the elderly who may be prescribed large numbers of medications with associated increased risks with multiple comorbidities, reduced physiological reserves, and altered drug handling.[15] Approximately 30 percent of hospital admissions of older adults are drug related, with more than 11 percent attributed to medication non-adherence and 10–17 percent related to adverse drug reactions.[1] There has been a steady rise in the use of prescription drugs in the over 60s age group in England since 1997; the overall number of prescriptions dispensed between 1997 and 2007 rose by nearly 60%.[16] These issues of increased rates of medication adherence problems and adverse events among the elderly are a concern as people in the UK are living longer. The proportion of people who are very old is growing fastest: there are currently three million people over 80, and this number is expected to almost double by 2030.[17] The number of centenarians is also increasing, rising 50 per cent since 2002.[17]

The potential for health improvement: The Government white paper looking at the future of pharmacy service in England uses a case study of implementation of a home visit pharmacist review service for vulnerable people in the Bournemouth & Poole Primary Care Trust.[18] Between 2004 and 2006 they observed a reduction in emergency admissions to hospital of approximately 20%, and annual prescribing cost savings for the service were £25,631. The annual cost per patient for the service in 2006/07 was £430. The PCT concluded that “the service only needs to prevent a two-day stay in hospital for each patient in order to cover running costs”. Research studies in the literature suggest that implementation of such a service would result in 30-50% of patients in the community having improved/more appropriate medication.

The practicality of the research question: The topic as currently structured (see question PICO on previous page), is ideally suited to both systematic review or for investigating in a primary research project in the community setting. The local pharmaceutical committee area teams for Devon, Cornwall & Isles of Scilly and Somerset currently support the provision of the advanced service of medicine use review (MUR) by community pharmacists under the NHS Contract for Community Pharmacy.

Whether the South West is a good place to do this research: The South West Peninsula has an older population than the England average. According to the Projecting Older People Population Information System (POPPI), by the Institute for Public Care and Oxford Brooks University (www.poppi.org.uk), in 2014 there are over 1.14 million people aged over 65, of which 165, 000 are aged over 85, a third of which are aged over 90. By 2025 there is forecast to be a 25 per cent rise in people aged over 65, and a 50 per cent rise in those aged over 90.

Alignment with local health priorities: This will be different across the South West region and between organisations. Please consider the briefing in line with your local priorities.

GUIDELINES & GOVERNMENT STATEGIES relating to this area:

A Government white paper on the future of pharmacy services in England was produced in 2008.[18] The overall vision reported was ‘to ensure safe, effective, fairer and more personalised patient care’. Tailored pharmacy services including home visits were referred to as one example of how to help achieve this. Recognition of future improvements needed included: promoting better access to pharmacists’ expertise on medicines, so that pharmacists and their staff support prompt, safe and effective use of medicines, and supporting people with long term conditions to improve their quality of life, health and wellbeing and to lead as independent a life as possible by supporting self-care.

NICE guidelines (2009) on medication adherence provides recommendations on the process of involving patients in decisions about medicines and on supporting the patient in their adherence to medicine.[14]

Relevant Abstracts:

Lenaghan E, Holland R, Brooks A. Home-based medication review in a high risk elderly population in primary care-the POLYMED randomised controlled trial. Age and ageing 2007; 36(3)

OBJECTIVE: To assess whether home-based medication review by a pharmacist for at-risk older patients in a primary care setting can reduce hospital admissions.
DESIGN: Randomised controlled trial comparing home-based medication review with standard care.
SETTING: Home-based medication review of 136 patients registered with one general practice.
METHOD: Study participants were over 80 years of age, living at home, taking four or more medicines, and had at least one additional medicines-related risk factor. The intervention comprised two home visits by a community pharmacist who educated the patient/carer about their medicines, noted any pharmaceutical care issues, assessed need for an adherence aid, and subsequently met with the lead GP to agree on actions.
MAIN OUTCOME MEASURE: Total non-elective hospital admissions within 6 months. Secondary outcomes included number of deaths, care home admissions and quality of life (EQ-5d). Impact on number of medicines prescribed was also assessed.
RESULTS: At 6 months, no difference in hospital admissions (21 intervention versus 20 control P = 0.80), and no difference in care home admissions or deaths were detected between groups. There was a small (non-significant) decrease in quality of life in the intervention group. There was a statistically significant reduction in the mean number of medicines prescribed (-0.87 items in favour of the intervention group, 95% confidence interval -1.66 to -0.08, P = 0.03).
CONCLUSIONS: No positive impact on clinical outcomes or quality of life was demonstrated, however, this intervention did appear to reduce prescribing. This is in line with other evidence and suggests that this form of intervention may not have a clear health gain, but may lead to modest savings in terms of reduced prescribing. Future research should focus on whether such a prescribing effect would make this type of intervention cost effective.

References:

1. Marek K, Antle L. Medication Management of the Community-Dwelling Older Adult. In: Hughes R, ed. Patient Safety and Quality. Rockville: Agency for Healthcare REsearch and Quality, 2008.

2. Van Wijk BL, Klungel OH, Heerdink ER, et al. Effectiveness of interventions by community pharmacists to improve patient adherence to chronic medication: a systematic review. The Annals of pharmacotherapy 2005;39(2):319-28

3. Royal S, Smeaton L, Avery AJ, et al. Interventions in primary care to reduce medication related adverse events and hospital admissions: systematic review and meta-analysis. Quality and Safety in Health Care;15(1):23-31

4. MacKeigan LD, Nissen LM. Clinical pharmacy services in the home. Disease Management & Health Outcomes 2008;16(4):227-44

5. Sidel VW, Beizer JL, Lisi-Fazio D, et al. Controlled study of the impact of educational home visits by pharmacists to high-risk older patients. Journal of community health 1990;15(3):163-74

6. Stewart S, Pearson S, Luke CG, et al. Effects of home-based intervention on unplanned readmissions and out-of-hospital deaths. Journal of the American Geriatrics Society 1998;46(2): 174-80

7. Elliott RA, Martinac G, Campbell S, et al. Pharmacist-led medication review to identify medication-related problems in older people referred to an Aged Care Assessment Team: a randomized comparative study. Drugs Aging 2012;29(7):593-605

8. Begley S, Livingstone C, Hodges N, et al. Impact of domiciliary pharmacy visits on medication management in an elderly population. International journal of pharmacy practice 1997; 5(3):111-21

9. Vuong T, Marriott JL, Kong DCM, et al. Implementation of a community liaison pharmacy service: a randomised controlled trial. International journal of pharmacy practice 2008; 16(3):127-35

10. Lenaghan E, Holland R, Brooks A. Home-based medication review in a high risk elderly population in primary care--the POLYMED randomised controlled trial. Age ageing 2007; 36(3):292-7

11. Krska J, Cromarty JA, Arris F, et al. Pharmacist-led medication review in patients over 65: a randomized, controlled trial in primary care. Age Ageing 2001;30(3):205-11

12. Holland R, Lenaghan E, Harvey I, et al. Does home based medication review keep older people out of hospital? The HOMER randomised controlled trial. BMJ (Clinical research ed) 2005;330(7486).

13. Sorensen L, Stokes JA, Purdie DM, et al. Medication reviews in the community: results of a randomized, controlled effectiveness trial.[Erratum appears in Br J Clin Pharmacol. 2005 Mar;59(3):376]. Br J Clin Pharmacol 2004;58(6):648-64

14. 76 NIfHaCECG. Medicines Adherence: Involving patients in decisions about prescribed medicines and supporting adherence, 2009.

15. Thakkar K, Jacklin A, Patel N, et al. The improving prescribing for the elderly (ImPE) project. The Health Foundation, 2013.

16. Health and Social Care Information Centre. Prescriptions dispensed in the community, statistics for England – 1997-2007. Leeds: Health and Social Care Information Centre, 2008.

17. Cornwell J. The care of frail older people with complex needs: time for a revolution,. London: The King's Fund, 2012.

18. Department of Health. Pharmacy in England: Building on Strengths, delivering the future. Norwich: Information Policy Division, 2008.

PRIORITY BRIEFING ID 32

The purpose of this briefing paper is to aid stakeholders in prioritising topics to be considered by PenCLAHRC for further evaluation and/or research. The following resources were searched to find this evidence: the TRIP database, NICE evidence, PROSPERO (for systematic review protocols), the Cochrane Library databases, MEDLINE, EMBASE, PsycINFO, ASSIA, Health Management Information Consortium, Social Policy and Practice and the Controlled Trials registry. This paper was compiled in 2-3 days. The briefing is in four parts:

i. General context and definitions
ii. The question in a structured format
iii. What the research evidence says
iv. Alignment with PenCLAHRC research priority criteria

QUESTION: Do interventions such as peer support or transport provision improve wellbeing and reduce mental health problems in socially isolated groups living in rural locations?

General context and definitions: Rural areas have a unique set of circumstances that can increase the social isolation of some residents, leading to poor health, loss of independence and lower quality of life. These factors range from accessibility of services, cost of living, lack of employment, lack of social support and greater reliance on car ownership.[1] Further challenges result from discrepancies in levels of funding for services in rural compared to urban areas.[2] Social isolation has been defined as an objective state referring to lack of and/or distance from social or familial contact and community involvement.[3] Social isolation and loneliness are often used interchangeably, although the latter can be understood as an individual's subjective feeling of lacking desired social contact. [2] Research on loneliness may therefore be relevant to this research question, particularly as understanding the experience of loneliness in different populations influences the types of intervention employed to alleviate the problem.[2] There is a sizeable literature base that considers the social isolation of particular groups living in rural areas. These groups at risk of rural social isolation appear to include: older people;[4] adolescents;[5] lesbian, gay, bisexual, and transgender communities;[6,7] ill health;[8] families with children with complex health needs;[9] those living in poverty;[10] carers;[11] and ethnic minority communities.[2]

The question in a structured format: The research question could be framed in the following way:

Population:	Socially isolated groups could include older people, adolescents, physical and/or mental health needs, socioeconomic disadvantage and specific minority groups. Rural residency could be determined using Defra's classifications for rural local authority areas.
Intervention:	Peer support, transport provision or other interventions targeting social isolation in rural settings
Comparator:	Usual care
Outcomes of Interest:	Measures of mental health and mental and physical well-being

What the research evidence says: To date there have been no systematic reviews or controlled trials investigating the impact of interventions used specifically with socially isolated rural populations on measures of mental and physical health or wellbeing. There have, however, been a number of published case studies and pilot studies that have explored specific interventions for rurally isolated groups, typically including some qualitative outcomes of interest to the current research question.

Heenan interviewed 35 people aged 65+ who were members of a rural community-based initiative for older people known as Young at Heart.[12] Those who attended the group described its positive contribution to the local community. It was described as a 'lifeline', 'blessing' and 'tonic'. An interviewee suggested that the group had addressed issues of self-confidence and self-worth. One of the strongest themes to emerge was the extent to which the older people valued the opportunity to interact with people from a similar background.

Graham describes how the Well-being, Education, Lifestyle and Living (WELL) Project in Northern Ireland provides social, educational and activity groups for people with long-term mental illness living in rural communities.[13] The project aimed to reduce the social isolation of people with long-term mental illness living in rural communities, thus increasing their ability to access education, employment and social and leisure activities, and improving their overall quality of life. Participant's attendance hours, completed courses, attainment of educational qualifications, and uptake of employment or voluntary work were recorded. Of 100 leavers (people who had attended the project for at least three months), 51% had positive outcomes: 12% returned to work, four per cent commenced voluntary work, 13% completed a course, four per cent moved into independent accommodation, and 18% no longer needed support (self-assessed or by a key worker).

Barrett and Alcock identify best practice examples where "community shops" appear to have helped reduce rural isolation.[14] By providing access to essential goods and services these shops help tackle physical isolation. There is also evidence that the shops address social isolation by stimulating community and social activity both through volunteering and using the shops.

Segrist investigated the effects of pairing 31 gerontology students with 31 isolated older adults in rural America.[15] This service learning made up part of the students' course, however data was collected to investigate the impact on the older participants. The impact on the emotional and social wellness of the older adults was assessed through student journals, electronic e-mail reflection, and the administration of the Life Satisfaction in the Elderly Scale and the Geriatric Depression Scale. Analysis of the qualitative data indicated that the service provided to the older adult had a positive impact on their emotional and social wellness. Quantitative data was not analysed.

Little research appears to have considered peer support and transport provision as specific interventions in either rural populations and/or socially isolated populations, although elements of peer support are identified in the interventions discussed.

Much of the research into social isolation and loneliness has focused on older populations. In 2011 researchers at the University of Exeter Medical School conducted a systematic review which assessed the effectiveness of interventions designed to alleviate social isolation and loneliness in older people.[16] Although none of the included studies were either located in rural areas or considered rurality as a subgroup analysis, findings may be relevant to this research question. Regarding intervention type, 86% of those providing activities and 80% of those providing support resulted in improved participant outcomes, compared with 60% of home visiting and 25% of internet training interventions. Those interventions offered at a group level were more likely to be beneficial compared with one-to-one interventions. The review concluded that well-conducted studies of the effectiveness of social interventions for alleviating social isolation are needed to improve the evidence base. Research investigating interventions in rural populations do not appear to focus on socially isolated populations. The systematic review did not consider cost effectiveness. Two papers have considered cost-effectiveness of specific interventions for older socially isolated people, although the evidence informing the findings has not been made clear.[17-18]

There are examples of randomised controlled trials in rural populations that could be considered at risk of social isolation, where the intervention is not targeting social isolation, but group delivery shows improvement on social support measures. For instance, Smith and Weinert found that a self-help support and educational online group in rural women with diabetes improved social support and quality of life[19] and Heckman and Carlson found that telephone-delivered, information-support groups have potential to increase perceptions of support and reduce barriers to health care and social services in HIV-infected persons in rural areas of the United States.[20]

Ongoing studies/ Trials in progress: One related NIHR Public Health Research Programme (PHR) is in progress: PHR - 09/3004/01. This trial based at the University of Sheffield involves an evaluation of the effectiveness and cost effectiveness of an intervention to promote mental wellbeing in community living older people. The intervention involves telephone friendship groups. Although not specifically focused on rural populations the sample may include rurally based participants and the intervention holds feasibility for rural populations. The research has completed and the final report is due to be published in January 2015.
http://www.nets.nihr.ac.uk/projects/phr/09300401

How does this fit with PenCLAHRC research priority criteria?

Size of the health problem: Social isolation has a negative association with quality of life and wellbeing.[21] Being lonely has a significant and lasting effect on blood pressure, with lonely individuals having higher blood pressure than their less lonely peers.[22] Social isolation is also associated with depression and higher rates of mortality.[23] The influence of social relationships on the risk of death are comparable with well-established risk factors for mortality such as smoking and alcohol consumption and exceed the influence of physical activity and obesity.[23] Such negative impact on individuals' health leads to higher health and social care service use.[18] Much of the research indicates an association between social isolation and poor health, meaning that social isolation does not necessarily cause poor health, indeed ill health is amongst the groups at risk of social isolation.

Social isolation affects about 1 million older people, and has a severe impact on people's quality of life in older age.[24] It is believed that over three million people in rural England live below the poverty threshold, representing 20-25% of the entire rural population.[1] Over a fifth of the population of England (11 million people) live and work in rural areas.[25] In the South West Region, nearly two thirds of the 37 local authorities (62%) are predominantly rural. The most rural counties in England are Cornwall, Norfolk and Yorkshire. There is net migration gain in predominantly rural areas. The fastest growth of migration is seen in parts of Devon, amongst other places.[26]

The potential for health improvement: The alleviation of loneliness and isolation has been recognised as a major priority for national and local government policy by some groups. Valtorta and Hanratty[27] state:

> *A drive to address loneliness and isolation could prove to be one of the most cost-effective strategies that a health system could adopt, and a counter to rising costs of caring for an ageing population* (p 521).

The role that social isolation plays as a risk factor for illnesses such as coronary heart disease is generally accepted. In addition, it can increase risks of falls and other injuries.[26] The benefits to individuals and society of reducing social isolation are therefore clear. Reducing social isolation also provides benefits to the wider community, for instance, through increased volunteering and caring responsibilities.[18]

The practicality of the research question: The research question as it stands lacks specificity. The research considered in this document highlights a range of different groups that are at risk of rural social isolation. While the challenges of rural isolation may be shared (e.g. transport provision), there will be differences in the social isolation and the acceptability of interventions designed to tackle this between different groups, such as older people and ethnic minorities. Interventions for older people and adolescents in rural settings have received more research attention and therefore the most appropriate research response (systematic review versus primary research) may vary depending on the particular population. That said the policy interest and population statistics indicate that rural social isolation is an increasing issue and the lack of clarity as to the most effective type of intervention or the sector responsible for delivery indicates the need for further research.[18]

Whether the South West is a good place to do this research: Statistics and population projections discussed in this document indicate that the South West is a particularly good place to do related research, given the predominance of rural areas and the increasing population at risk of social isolation, particularly the elderly. Upstream is a charitable organisation based in Mid Devon who engages isolated adults in a rural area through stimulating, creative and social activities. http://www.upstream-uk.com/ Community Mentors are a key feature of the outreach approach initiated by Upstream, and about to be developed throughout Devon under the My Life My Choice programme. The project is underpinned by research and evaluation from the then Peninsula Medical School that reports transformational change in mood and behaviour and clinically meaningful changes in mental well-being. Local GPs in Mid Devon recognised that older, more isolated patients were getting caught in a downward spiral of depression and dependency. In many cases, because of isolation, older people were not receiving the attention they needed. This was particularly evident in a rural area such as Mid Devon with pockets of marked social deprivation and suffering from changes in agricultural practice. The GPs identified quality of life and social inclusion as two of the key issues to be tackled.

Alignment with local health priorities: This will be different across the South West region and between organisations. Please consider the briefing in line with your local priorities.

GUIDELINES currently available that relate to this area:

Given the impact of social isolation on individual health and wellbeing, cost of care and wider community imperatives, there has been policy consensus that support must be provided to tackle social isolation and loneliness, particularly in the elderly.[18]

The 2012 Rural Statement highlights that poverty and deprivation exist in rural areas, social isolation is a growing concern, not least because of the greater proportion of older people living in rural communities.[28] The cost of living in rural areas, for example the cost of housing and road fuel, can be higher than elsewhere. We also recognise that it is often the most vulnerable members of the community, such as older people and deprived families, who suffer most from the loss of local services and the high cost of living. Local solutions need to be found that are environmentally, economically and socially sustainable.

The Department of Agriculture and Rural Development's (DARD) Tackling Rural Poverty and Social Isolation framework aims to help the most vulnerable rural dwellers facing poverty and isolation. The framework supports a package of measures worth up to £16 million to support vulnerable people in rural communities and target the root causes of social isolation.

Relevant Abstracts:

Dickens AP, Richards SH, Greaves CJ, Campbell JL. Interventions targeting social isolation in older people: a systematic review. BMC public health. 2011;11(1):647.

Background: Targeting social isolation in older people is a growing public health concern. The proportion of older people in society has increased in recent decades, and it is estimated that approximately 25% of the population will be aged 60 or above within the next 20 to 40 years. Social isolation is prevalent amongst older people and evidence indicates the detrimental effect that it can have on health and wellbeing. The aim of this review was to assess the effectiveness of interventions designed to alleviate social isolation and loneliness in older people.

Methods: Relevant electronic databases (MEDLINE, EMBASE, ASSIA, IBSS, PsycINFO, PubMed, DARE, Social Care Online, the Cochrane Library and CINAHL) were systematically searched using an extensive search strategy, for randomised controlled trials and quasi-experimental studies published in English before May 2009. Additional articles were identified through citation tracking. Studies were included if they related to older people, if the intervention aimed to alleviate social isolation and loneliness, if intervention participants were compared against inactive controls and, if treatment effects were reported. Two independent reviewers extracted data using a standardised form. Narrative synthesis and vote-counting methods were used to summarise and interpret study data.

Results: Thirty two studies were included in the review. There was evidence of substantial heterogeneity in the interventions delivered and the overall quality of included studies indicated a medium to high risk of bias. Across the three domains of social, mental and physical health, 79% of group-based interventions and 55% of one-to-one interventions reported at least one improved participant outcome. Over 80% of participatory interventions produced beneficial effects across the same domains, compared with 44% of those categorised as nonparticipatory.
Of interventions categorised as having a theoretical basis, 87% reported beneficial effects across the three domains compared with 59% of interventions with no evident theoretical foundation. Regarding intervention type, 86% of those providing activities and 80% of those providing support resulted in improved participant outcomes, compared with 60% of home visiting and 25% of internet training interventions. Fifty eight percent of interventions that explicitly targeted socially isolated or lonely older people reported positive outcomes, compared with 80% of studies with no explicit targeting.

Conclusions: More, well-conducted studies of the effectiveness of social interventions for alleviating social isolation are needed to improve the evidence base. However, it appeared that common characteristics of effective interventions were those developed within the context of a theoretical basis, and those offering social activity and/or support within a group format. Interventions in which older people are active participants also appeared more likely to be effective. Future interventions incorporating all of these characteristics may therefore be more successful in targeting social isolation in older people.

References:

1. Leisure Futures Ltd. Impact on reducing rural isolation: Final research report, 2011.

2. Age UK. Loneliness and Isolation Evidence Review, 2011.

3. Bernard S. Loneliness and social isolation among older people in North Yorkshire. Working Paper No. WP 2565. Social Policy Research Unit, University of York, 2013.

4. Inder KJ, Lewin TJ, Kelly BJ. Factors impacting on the well-being of older residents in rural communities. Perspectives in Public Health. 2012; 132(4):182-91.

5. Black G, Roberts RM, Li-Leng T. Depression in rural adolescents: relationships with gender and availability of mental health services. Rural & Remote Health. 2012; 12:2092.

6. Cohn TJ, Hastings SL. Resilience among rural lesbian youth. Journal of Lesbian Studies. 2010; 14(1):71-9.

7. Yarborough DG. Gay adolescents in rural areas: experiences and coping strategies. Journal of Human Behavior in the Social Environment. 2003; 8(2/3):129-44.

8. Nicholson LA. Rural mental health. Advances in Psychiatric Treatment. 2008; 14(4):302-11.

9. Pullmann MD, VanHooser S, Hoffman C, Heflinger CA. Barriers to and Supports of Family Participation in a Rural System of Care for Children with Serious Emotional Problems. Community Mental Health Journal. 2010; 46(3):211-20.

10. Shucksmith M. Poverty and social exclusion in rural Britain. 1999.

11. Winterton R, Warburton J. Models of care for socially isolated older rural carers: barriers and implications. Rural & Remote Health. 2011; 11(3):1678.

12. Heenan D. How Local Interventions Can Build Capacity to Address Social Isolation in Dispersed Rural Communities: A Case Study from Northern Ireland. Ageing International. 2011; 36(4):475-91.

13. Graham N. Overcoming social isolation in rural communities. A life in the day. 2007; 11(2):22-6.

14. Barrett H, Alcock J. Addressing rural isolation in the Central and Eastern region: the role of community shops. 2012, Plunkett Foundation.

15. Segrist K. Assessing impact of service-learning project on older, isolated adults in rural America. Journal of Intergenerational Relationships. 2004;2(2).

16. Dickens AP, Richards SH, Greaves CJ, Campbell JL. Interventions targeting social isolation in older people: a systematic review. BMC public health. 2011;11(1):647.

17. Knapp M, Bauer B, Perkins M, Snell T. Building Community Capacity: Making an economic case. PSSRU Discussion paper 2772. 2010, PSSRU: London. Available at http://www.pssru.ac.uk/pdf/dp2772.pdf.

18. Windle K, Wagland R, Forde J, D’Amico F, Janssen D, Wistow G. National Evaluation of Partnerships for Older People Projects. Final Report. 2009, Personal Social Services Research Unit Kent and London School of Economics and Political Science, Department of Health: London.

19. Smith L, Weinert C. Telecommunication support for rural women with diabetes. The Diabetes Educator. 2000; 26(4):645-55.

20. Heckman TG, Carlson B. A randomized clinical trial of two telephone-delivered, mental health interventions for HIV-infected persons in rural areas of the United States. AIDS and Behavior. 2007; 11(1):5-14

21. Masi CM, Chen H-Y, Hawkley LC, Cacioppo JT. A meta-analysis of interventions to reduce loneliness. Personality and Social Psychology Review. 2010.

22. Hawkley LC, Thisted RA, Masi CM, Cacioppo JT. Loneliness predicts increased blood pressure: 5-year cross-lagged analyses in middle-aged and older adults. Psychology and aging. 2010; 25(1):132.

23. Holt-Lunstad J, Smith TB, Layton JB. Social relationships and mortality risk: a meta-analytic review. PLoS medicine. 2010; 7(7):e1000316.

24. Our Rural Future. The Scottish Government. 2011.

25. Buonfino A, Geissendorfer L. Mapping Rural Needs in Britain and Ireland: A report for the Carnegie UK Trust. 2007.

26. The Commission for Rural Communities: State of the Countryside. 2010.

27.Valtorta N, Hanratty B. Loneliness, isolation and the health of older adults: do we need a new research agenda? Journal of the Royal Society of Medicine. 2012; 105(12):518-22.

28. Defra. Rural Statement. 2012.

PRIORITY BRIEFING ID 39

The purpose of this briefing paper is to aid stakeholders in prioritising topics to be considered by PenCLAHRC for further evaluation and/or research. This paper was compiled in 2-3 days. The following resources were searched to find this evidence: the TRIP database, NICE evidence, PROSPERO (for systematic review protocols), the Cochrane Library databases, MEDLINE, EMBASE, Health Management Information Consortium, CINAHL and the Controlled Trials registry. The briefing is in four parts:

i. General context and definitions
ii. The question in a structured format
iii. What the research evidence says
iv. Alignment with PenCLAHRC research priority criteria

QUESTION: In multi-morbid patients taking at least three prescribed medications, can a new model of prescribing reduce treatment burden and optimise individually appropriate medicines uses?

General context and definitions: Individuals with two or more long term conditions often have to cope with heavy treatment burdens, where medical care including the use of medication can add to rather than relieve the challenge of living with long term illness. Current models of care for the management of long term conditions are often provided within disease-specific clinics and an individual patient may need to visit a separate clinic for each condition. Alongside this, the focus of optimal prescribing policies is on the safe and effective management or control of the illness. Very little is known about how patients and professionals (separately or together) individualise medication use in situations of polypharmacy. A recent PenCLAHRC funded review of concepts surrounding the individualisation of drug treatments[1] revealed very little research about how prescribers support patients in these circumstances. As part of this work, patients and practitioners expressed a desire for more individually tailored care but felt that they lacked sufficient understanding of the best way to provide it. The authors proposed a new term 'mutually agreed tailoring' to describe a process of ongoing pharmacological management of conditions that incorporates patients' specific needs, experiences and existing strategies for using their medications, and the professionals' clinical judgement. The NICE definition of medicines optimisation is that it ''…requires evidence-informed decision making about medicines, involving effective patient engagement and professional collaboration to provide an individualised, person-centred approach to medicines use, within the available resources" (NICE 2013).[2]

The question in a structured format: The research question could be framed in the following way:

Patient Population:	People with multiple conditions taking at least three prescribed medications and at risk of burden from polypharmacy (and current models of rational prescribing)
Practitioner population:	Primary care prescribers (and other professionals) who manage and support those exposed to polypharmacy
Intervention:	A clinical or patient led intervention/approach to support individually tailored care or mutually agreed treatment
Comparator:	Current models of prescribing
Outcomes of Interest:	Treatment burden; resilience and wellbeing; appropriate medication use; cost efficiency

What the research evidence says: Whilst there are multiple studies and systematic reviews of interventions[3-9] to reduce polypharmacy in individuals with multiple long term conditions, our searches did not identify any specific evidence relating to individualisation (mutually agreed treatment) for either reducing or improving the management of polypharmacy in these individuals For example, a Cochrane review published in 2012, which identified 10 randomised trials, focussed on people over the age of 65 and only included studies with a validated measure of medication appropriateness. One trial evaluated the use of a decision support tool by doctors to assist them in making appropriate prescribing decisions, the remaining nine studies involved multi-faceted pharmaceutical interventions in a variety of settings. The review concluded that there is limited evidence that the interventions studied are effective at reducing medication-related problems or making sure that older people receive the correct medications.[10] The focus of the review was on the effectiveness of interventions in terms of reducing the number of inappropriate prescriptions; none of the interventions specifically involved patients in the decision-making process.

Reeve and colleagues reviewed the literature on de-prescribing processes.[11] Although not a systematic review, the authors used inventive methods to identify as much relevant literature as possible and were only able to locate ten relevant papers. Five reported a de-prescribing process while the other five reported potential or critical elements required for de-prescribing. The findings were used to develop a five-step cyclical process that incorporates a comprehensive medication history, identifying potentially inappropriate medications, determining whether the potentially inappropriate medication can be ceased, planning the withdrawal process and provision of monitoring, support and documentation. The process focusses on engaging patients throughout with the aim of improving long-term health outcomes. The feasibility of implementing the process was subsequently tested with regard to de-prescribing inappropriate proton pump inhibitors in adults (n=57) with complex polypharmacy.[12] The patient-centred de-prescribing process was successfully used to reduce inappropriate prescribing in a small proportion of people and was acceptable to the patients. However, there were some barriers to implementation; difficulties in accessing complete medical histories, time limitations and minimal evidence to support effectiveness in certain indications.

Ongoing studies/ Trials in progress: NICE are currently producing a guideline on medicines optimisation which is due for publication in March 2015. During the development of the guideline the following review questions will be considered: i) For all patients using medicines what is the effect of patient and carer engagement in improving shared decision making between patients, carers and health practitioners compared to usual care? ii) For all patients using medicines what is the effect of patient and carer engagement in improving shared decision making between patients, carers and health practitioners compared to usual care? iii) For all practitioners involved with medicines what is the effect of intra- and inter- professional collaboration on improving patient outcomes from medicines compared to usual care? iv) For all patients using medicines what is the most effective system and process for transferring medicines information across care settings to reduce medicines related patient safety incidents compared to usual care? v) For all patients using medicines what is the most effective system and process for transferring medicines information across care settings to reduce medicines related patient safety incidents compared to usual care? vi) For all patients using medicines what is the most effective system and process for transferring medicines information across care settings to reduce medicines related patient safety incidents compared to usual care?

In early 2015, the National Institute for Health Research (NIHR) will issue a call for research into the evaluation of interventions or services delivered for older people with multi-morbidity (defined as the co-occurrence of two or more chronic conditions in one person). This call is an initiative by the NIHR in recognition of the need for further research based evidence to support the delivery of best care to people with multi-morbidities and to enable them to maintain their capabilities and quality of life.

How does this fit with PenCLAHRC research priority criteria?

Size of the health problem: Multi-morbidity is common; a cross-sectional study of 1,75m people registered with 314 medical practices in Scotland in March 2007, found that 42.2% of all patients had more than one long term condition and 23.2% had two or more conditions. The prevalence of multi-morbidity increased substantially with age and was present in most people aged 65 years and older.[13] Polypharmacy is increasing; in the past 10 years the average number of items prescribed for each person per year in England has increased by 53.8%, from 11.9 in 2001 to 18.3 in 2011.[14] There is also evidence that the number of concurrent medications an individual is asked to take at any given time has increased.[15]

The potential for health improvement: A recent report by the Academy of Medical Royal Colleges estimated that the NHS could save £466million a year if ‘doctors were less ready to prescribe cocktails of drugs to older people’ both as a result of savings in drug costs but also in hospital admissions for adverse drug reactions.[16] Better management of polypharmacy is likely to result in increased patient safety and efficiency of the use of prescribed drugs. Patient-centred prescribing processes may empower people in taking responsibility for their care and there is interest within the pharmacy community in creating patient-centred medication plans. However, the extent of the impact of patient-centred-prescribing on the management of polypharmacy is not clear from the existing literature.

The King’s Fund report – Polypharmacy and medicines optimisation: Making it safe and sound – highlights many of the issues surrounding polypharmacy and offers practical guidance to clinicians and others in avoiding inappropriate prescribing.[15] Interestingly, the lack of reference to the role of the patient in tackling/managing polypharmacy was noted shortly after publication of this report.[17]

The practicality of the research question: The question fits well within the PenCLAHRC Patient-Centred Care theme and there is interest locally in prescribing and user-led approaches. It is worth noting the topics being addressed in the NICE Guideline on Medicines Optimisation which is due for publication in March 2015, and also the NIHR call for research proposals for people with multi-morbidity.

Whether the South West is a good place to do this research: This work follows on from a previous review of the literature, funded by PenCLAHRC and carried out in Exeter. The same group of researchers (includes prescribers, patients and academics) would like to co-create a new model of 'optimal prescribing' in primary care, building on existing good practice and also identify problems or adverse outcomes to be avoided. The goal of the new model would be to support a best practice and governance framework which reduces treatment burden, enhances resilience and wellbeing and improves cost efficiency. There is also interest locally within the PenCHORD team in modelling medication management.

Alignment with local health priorities: This will be different across the South West region and between organisations. Please consider the briefing in line with your local priorities.

GUIDELINES & GOVERNMENT STATEGIES relating to this area:

A report produced by the Welsh Pharmaceutical Committee and supported by the Royal Pharmaceutical Society 'Your Care, Your Medicines' sets out goals for integrating pharmacy into the heart of patient-centred care. The report describes one of the key elements of patient-centred pharmaceutical care as shared decision making in which patients and pharmacists will work together to agree realistic outcomes from their treatment as part of the development and delivery of a patient's individual pharmaceutical care plan.[18]

PRIORITY BRIEFING ID 39

Relevant Abstracts:

Denford S, Frost J, Dieppe P, Cooper C, Britten N. Individualisation of drug treatments for patients with long-term conditions: a review of concepts. BMJ Open. 2014 Mar 26;4(3):e004172. doi: 10.1136/bmjopen-2013-004172.

OBJECTIVES: Patients and policy makers advocate that drug treatments should be individualised. However, the term is used in a variety of ways. We set out to identify the range of related terminology and concepts in the general field of individualisation, map out the relationships between these concepts and explore how patients' perspectives are considered.
DESIGN: We consulted members of an established patient and public involvement group about their experience of medicine taking for long-term conditions and their ideas about individualisation. We then conducted a scoping review of the literature to explore how terms surrounding individualisation of drug treatment are used and defined in the literature, and to explore the extent to which patients' perspectives are represented, with a view to informing future recommendations as to how individualisation can be operationalised.
METHODS: We identified relevant literature using a range of search strategies. Two researchers independently extracted definitions of terms using a template. Inductive and deductive methods were used to explore the data.
RESULTS: Definitions were categorised according to the following themes: medical management; pharmacogenetics, the patient's perspective; interactions between the healthcare provider and patient and management of long-term conditions.
CONCLUSIONS: Within the literature reviewed, the involvement of patients in the ongoing management of drug treatment was largely absent. We propose the use of a new term 'mutually agreed tailoring' (MAT). This describes the ongoing pharmacological management of conditions that incorporates patients' specific needs, experiences and existing strategies for using their medications, and the professionals' clinical judgement. This usually includes patients monitoring their symptoms and, with the support of the professional, making appropriate product, dose or timing adjustments as necessary. Our previous work suggests that many patients and doctors are successfully practising MAT, so we suggest that a formal description may facilitate wider utilisation of strategies that will improve patient outcomes.

Patterson Susan, M.Cadogan Cathal, A.Kerse, Ngaire Cardwell Chris, R. Bradley Marie, C.Ryan, Cristin Hughes, Carmel. Interventions to improve the appropriate use of polypharmacy for older people. Cochrane Database of Systematic Reviews, 10, 2014

Background: Inappropriate polypharmacy is a particular concern in older people and is associated with negative health outcomes. Choosing the best interventions to improve appropriate polypharmacy is a priority, hence interest in appropriate polypharmacy, where many medicines may be used to achieve better clinical outcomes for patients, is growing.
Objectives: This review sought to determine which interventions, alone or in combination, are effective in improving the appropriate use of polypharmacy and reducing medication-related problems in older people.
Search methods: In November 2013, for this first update, a range of literature databases including MEDLINE and EMBASE were searched, and hand searching of reference lists was performed. Search terms included 'polypharmacy', 'medication appropriateness' and 'inappropriate prescribing'.
Selection criteria: A range of study designs were eligible. Eligible studies described interventions affecting prescribing aimed at improving appropriate polypharmacy in people 65 years of age and older in which a validated measure of appropriateness was used (e.g. Beers criteria, Medication Appropriateness Index (MAI)).
Data collection and analysis: Two review authors independently reviewed abstracts of eligible studies, extracted data and assessed risk of bias of included studies. Study-specific estimates were pooled, and a random-effects model was used to yield summary estimates of effect and 95% confidence intervals (CIs). The GRADE (Grades of Recommendation, Assessment, Development and Evaluation) approach was used to assess the overall quality of evidence for each pooled outcome.
Main results: Two studies were added to this review to bring the total number of included studies to 12. One intervention consisted of computerised decision support; 11 complex, multi-faceted pharmaceutical approaches to interventions were provided in a variety of settings. Interventions were delivered by healthcare professionals, such as prescribers and pharmacists. Appropriateness of prescribing was measured using validated tools, including the MAI score post intervention (eight studies), Beers criteria (four studies), STOPP criteria (two studies) and START criteria (one study). Interventions included in this review resulted in a

reduction in inappropriate medication usage. Based on the GRADE approach, the overall quality of evidence for all pooled outcomes ranged from very low to low. A greater reduction in MAI scores between baseline and follow-up was seen in the intervention group when compared with the control group (four studies; mean difference -6.78, 95% CI -12.34 to -1.22). Post-intervention pooled data showed a lower summated MAI score (five studies; mean difference -3.88, 95% CI -5.40 to -2.35) and fewer Beers drugs per participant (two studies; mean difference -0.1, 95% CI -0.28 to 0.09) in the intervention group compared with the control group. Evidence of the effects of interventions on hospital admissions (five studies) and of medication-related problems (six studies) was conflicting.
Authors' conclusions: It is unclear whether interventions to improve appropriate polypharmacy, such as pharmaceutical care, resulted in clinically significant improvement; however, they appear beneficial in terms of reducing inappropriate prescribing.

Reeve E, Shakib S, Hendrix I, Roberts MS, Wiese MD. Review of deprescribing processes and development of an evidence-based, patient-centred deprescribing process. Br J Clin Pharmacol. 2014 Oct;78(4):738-47. doi: 10.1111/bcp.12386.

Inappropriate use of medication is widespread, especially in older people, and is associated with risks, including adverse drug reactions, hospitalization and increased mortality. Optimization of appropriate medication use to minimize these harms is an ongoing challenge in healthcare. The term 'deprescribing' has been used to describe the complex process that is required for safe and effective cessation of medication. Patients play an important role in their own health and, while they may complain about the number of medications they have to take, they may also be reluctant to cease a medication when given the opportunity to do so. A review of previously proposed deprescribing processes and relevant literature was used to develop the patient-centred deprescribing process, which is a five-step cycle that encompasses gaining a comprehensive medication history, identifying potentially inappropriate medications, determining whether the potentially inappropriate medication can be ceased, planning the withdrawal regimen (e.g. tapering where necessary) and provision of monitoring, support and documentation. This is the first deprescribing process developed using knowledge of the patients' views of medication cessation; it focuses on engaging patients throughout the process, with the aim of improving long-term health outcomes. Despite a comprehensive review of the literature, there is still a lack in the evidence base on which to conduct deprescribing. The next step in broadening the evidence to support deprescribing will be to test the developed process to determine feasibility in the clinical setting.

References:

1. Denford S, Frost J, Dieppe P, Cooper C, N B. Individualisation of drug treatments for patients with long-term conditions: a review of concepts. BMC Open. 2014;4(3):e004172.
2. NICE. Medicines optimisation 2013. Available from: http://www.nice.org.uk/guidance/indevelopment/gid-cgwave0676.
3. Jäger C FT, Steinhäuser J, Joos S, Wensing M, Szecsenyi J. A tailored implementation intervention to implement recommendations addressing polypharmacy in multimorbid patients: study protocol of a cluster randomized controlled trial. Trials. 2013;14:420.
4. Maeda K. A systematic review of the effects of improvement of prescription to reduce the number of medications in the elderly with polypharmacy (Provisional abstract). Journal of the Pharmaceutical Society of Japan. 2009;129(5):631-45.
5. Mannucci PM NA. Multimorbidity and polypharmacy in the elderly: lessons from REPOSI. Internal and emergency medicine. 2014;9(7):723-34.
6. Muth C. Prioritising and optimising multiple medications in elderly multi-morbid patients in general practice: a pilot open-label two-arm cluster-randomised controlled trial. available from: https://clinicaltrials.gov/ct2/show/NCT01171339?term=medicines+optimisation&rank=3
7. Ussai S, Casetta A, Bresigar M, Barbone F, Pisa F. General physician therapy review and polypharmacy in elderly outpatients. Drug Safety. 2013 September;36 (9):863.
8. Viktil K, Engh E, Froyland H, Ranhoff AH. Establishing a geriatric interprofessional out-patient clinic for medication review. European Geriatric Medicine. 2013 September;4:S189.
9. Alldred D, Raynor D, Hughes C, Barber N, Chen T, Spoor P. Interventions to optimise prescribing for older people in care homes. Cochrane Database of Systematic Reviews. 2013;Feb 28(2):CD009095.
10. Patterson Susan M, Cadogan Cathal A, Kerse N, Cardwell Chris R, Bradley Marie C, Ryan C, et al. Interventions to improve the appropriate use of polypharmacy for older people. Cochrane Database of Systematic Reviews [Internet]. 2014; (10).
11. Reeve E, Shakib S, Hendrix I, Roberts M, MD W. Review of deprescribing processes and development of an evidence-based, patient-centred deprescribing process. Br J Clin Pharmacol. 2014;78(4):738-47.
12. Reeve E, Andrews J, Wiese M, Hendrix I, Roberts M, Shakib S. The Feasibility of a Patient-Centered Deprescribing Process to Reduce Inappropriate Use of Proton Pump Inhibitors. Ann Pharmacother. 2014;Nov 10. pii: 1060028014558290. [Epub ahead of print].
13. Barnett K, Mercer S, Norbury M, Watt G, Wyke S, Guthrie B. Epidemiology of multimorbidity and implications for health care, research, and medical education: a cross-sectional study. Lancet. 2012;380(9836):37-43.
14. Health and Social Care Information Centre. Prescriptions dispensed in the community: England, Statistics for England 2001-2011. 2012.
15. Duerden M, Avery T, Payne R. Polypharmacy and Medicines Optimisation: Making it safe and sound. The King's Fund, 2013.
16. Academy of Medical Royal Colleges. Protecting resources, promoting value: A doctor's guide to cutting waste in clinical care. 2014.
17. Herxheimer A, McGettigan P. Problems of polypharmacy. BMJ 2013;23(347):f7500.
18. Royal Pharmaceutical Society Wales. Your Care, Your Medicines: Pharmacy at the heart of patient-centred care. 2014.

PRIORITY BRIEFING ID 41

The purpose of this briefing paper is to aid stakeholders in prioritising topics to be considered by PenCLAHRC for further evaluation and/or research. This paper was compiled in 2-3 days. The following resources were searched to find this evidence: TRIP database, NICE Evidence, PROSPERO (for systematic review protocols), The Cochrane Library databases, MEDLINE, EMBASE, CINAHL, Health Management Information Consortium (HMIC) and the Current Controlled Trials registry. The briefing is in four parts:

i. General context and definitions
ii. The question in a structured format
iii. What the research evidence says
iv. Alignment with PenCLAHRC research priority criteria

QUESTION: Which clinical indicators best predict the development of thrombosis and pressure sores for the elderly with restricted mobility? (Would routine monitoring of these indicators reduce hospital stay and adverse clinical events?)

General context and definitions: Venous thromboembolism (VTE) is the collective name for deep vein thrombosis (DVT) and pulmonary embolism. VTE encompasses a range of clinical presentations. VTE is often asymptomatic; less frequently it causes pain and swelling in the leg. There is also associated chronic morbidity for VTE.[1] Post-thrombotic syndrome, characterised by chronic pain, swelling and occasional ulceration of the skin of the leg, occurs in up to one-third of patients who have had a DVT.[2] DVT is a recognised risk factor for pressure ulcers.[3]

Pressure ulcers are caused when an area of skin and the tissues below are damaged as a result of being placed under pressure sufficient to impair its blood supply. Typically they occur in a person confined to bed or a chair by an illness and as a result they are sometimes referred to as 'bedsores', or 'pressure sores'. Pressure ulcers are often preventable and their prevention is included in domain five of the Department of Health's NHS outcomes framework 2014/15.[4] Pressure ulcers among elderly hospital patients diminish quality of life and increase the cost of hospital care. Evidence suggests that pressure ulcers can arise after only a few hours of immobility.[5]

The question in a structured format: The research question could be framed in the following way:

Population:	Inpatients aged 65 or older with restricted mobility
Intervention:	Use of risk assessment scales for venous thromboembolism, deep vein thrombosis or pressure ulcers
Comparator:	Current practice or clinical expertise
Outcomes of Interest:	Accuracy of scales; Incidence of venous thromboembolism, deep vein thrombosis or pressure ulcers; Length of hospital stay; adverse clinical events.

What the research evidence says: For pressure ulcers, there are a large number of existing risk assessment scales.[6] It is argued that the number of scales in use is due to a lack of consensus regarding which variables are the most important indicators of risk.[7] These risk assessment scales have been subject to several systematic reviews assessing their predictive capacity and/or whether their use reduces incidence of pressure ulcers.

A 2014 Cochrane systematic review aimed to determine whether using structured, systematic pressure ulcer risk assessment tools, in any health care setting, reduces the incidence of pressure ulcers.[6] Two studies were included in the review. One study found no statistical difference in pressure ulcer incidence between patients who were assessed using the Braden risk assessment tool, patients assessed by nurses who had receiving training on pressure ulcer risk factors or patients assessed by nurses using unstructured risk assessment alone. The other study compared the Waterlow risk assessment tool, the Ramstadius risk screening tool and no formal risk assessment. There was no statistical difference in pressure ulcer incidence between the three methods. The systematic review concluded that there is no reliable evidence to suggest that the use of structured, systematic pressure ulcer risk assessment tools reduces the incidence of pressure ulcers.[6]

Chou and colleagues 2013 systematic review supports the Cochrane reviews findings.[8] Their review included randomised trials and observational studies on effects of using risk assessment on clinical outcomes and randomised trials of preventive interventions on clinical outcomes. They located three relevant studies and found no evidence that use of a pressure ulcer risk assessment instrument, with or without an intervention strategy based on assessed risk, reduces risk for incident pressure ulcers compared with nurses' clinical judgment.

It is perhaps surprising then, that a 2014 systematic review found conflicting results.[9] Garcia Fernandez and colleagues included prospective studies, which distinguishes it from the other systematic reviews. They identified 57 studies and used meta-analysis where appropriate, which pointed to adequate risk prediction capacity for the Braden, Norton, EMINA (mEntal state, Mobility, Incontinence, Nutrition, Activity), Waterlow, and Cubbin-Jackson scales showed the highest predictive capacity. The clinical judgment of nurses was found to achieve inadequate predictive capacity when used alone.[9] These systematic reviews, as well as others located, all focused on adult populations, rather than the predictive capacity of scales for elderly patients with restricted mobility.

A 2013 systematic review focused on risk factors that are predictive of pressure ulcer development, rather than the validity of risk assessment scales.[10] Risk factors most frequently seen as independent predictors of pressure ulcer development within the 54 reviewed studies included mobility, perfusion (including diabetes) and skin/pressure ulcer status. Skin moisture, age, haematological measures, nutrition and general health status were important, but less frequent indicators. The review found limited evidence that either race or gender is important. The review concludes that a complex interplay of factors increase the probability of pressure ulcer development.[10]

With regard to VTE, Tamariz and colleagues conducted a systematic review to summarise the evidence on the predictive value of risk assessment criteria.[11] Of the 23 studies that met eligibility criteria, 17 evaluated risk criteria for the diagnosis of DVT and six evaluated risk criteria for pulmonary embolism. The review found that the most frequently evaluated prediction rule for DVT was the Wells rule. The Wells scoring system was found to be particularly useful for excluding deep vein thrombosis for those categorised as low probability. Likewise those categorised as high probability had high positive likelihood ratios for having DVT. The Wells scoring system for the diagnosis of pulmonary embolism had similar predictive value as the prediction rule for deep vein thrombosis, but it has not been evaluated as extensively. Goodacre and colleagues reported similar findings when they investigated whether whether clinical findings, risk scores, and physicians' empirical judgments affect the likelihood of detecting DVT on definitive testing.[12]

A primary study focused on independent risk factors for symptomatic DVT in inpatients aged 65 and over.[13] Comparison using logistic regression of 310 consecutive patients with symptomatic DVT versus 310 randomly selected controls was performed. Six factors were identified as independently related to the development of DVT: restriction of mobility, aged 75 and older, history of DVT or pulmonary embolism, acute heart failure, chronic oedema of the lower limbs, and paresis or paralysis of a lower limb.

The focus of this question is the use of risk assessment scales and indicators to predict the onset of VTE and pressure ulcers, therefore the literature on the effectiveness of interventions to prevent VTE and pressure ulcers[14] has not been considered here.

Ongoing studies/ Trials in progress: There is an ongoing Canadian systematic review that aims to identify clinical predictors for recurrent VTE. However, the anticipated completion date has passed. (see http://www.crd.york.ac.uk/prospero/display_record.asp?ID=CRD42012002356#.VGzGk_msXPk) There are a number of ongoing trials and systematic reviews focused on interventions for pressure sores or VTE, but no trials focused on risk factors.

How does this fit with PenCLAHRC research priority criteria?

Size of the health problem: The House of Commons Health Committee reported in 2005 that an estimated 25,000 people in the UK die from preventable hospital-acquired venous thromboembolism (VTE) every year.[14] This includes patients admitted to hospital for medical care and surgery. A UK survey suggested that 71% of patients assessed to be at medium or high risk of developing deep vein thrombosis did not receive any form of mechanical or pharmacological VTE prophylaxis.[15] Venous thromboembolism is predicted to be an escalating public health problem due to the prominence of age as a risk factor (incidence of first VTE rises exponentially with age) and the increasing age of the population.[16] NICE guidelines recognise age over 60 years as a risk factor for VTE.[1] DVT is a common disease, often asymptomatic, but presenting with clinical symptoms in about 1 per 1,000 people per year in the general population. DVT has multiple contributory risk factors.[16]

Pressure ulcer prevention can improve patient outcomes and reduce health service resource use. The costs to the health services of managing patients with pressure ulcers are substantial. Dealey and colleagues provide an estimate of the costs of treating pressure ulcers in the UK at August 2011 prices.[17] They found that the cost of treating a pressure ulcer varies from £1,214 (category 1) to £14,108 (category IV). They conclude that pressure ulcers therefore represent a significant cost burden in the UK, both to patients and to health-care providers.

The potential for health improvement: With increasing life expectancy, prevention of VTE, particularly in elderly patients, is predicted to be a major public health problem.[18] The proportion of severe and fatal VTE events is higher in elderly patients;[19] the association with other comorbidities is more frequent;[20] diagnosis of pulmonary embolism (PE) is more difficult; [18] and the risk of bleeding related to anticoagulant treatments is high.[21]

DVT can have severe consequences: the frequency of silent pulmonary embolism is 40% to 50% in patients with DVT, and the incidence of pulmonary embolism is estimated to be between 7% and 33% at the time of death in elderly subjects.[13] Prevention of DVT is therefore essential and depends on the identification of high-risk patients likely to benefit from preventive treatment.

As age increases, so too does pressure ulcer prevalence and incidence.[22] Changing population demographics and the predicted increase in the older persons in the future suggest a corresponding increase in the burden of pressure ulcers unless effective preventative measures are implemented.[6] Pressure ulcers impact negatively on quality of life as it is known that individuals with pressure ulcers frequently experience pain, combined with fear, isolation and anxiety regarding wound healing.[23] It has also been shown that pressure ulcers are associated with an increased risk of death. One study identified that the risk of dying for elderly patients with a pressure ulcer was three times greater than for those without a pressure ulcer[24] although it is probable that pressure ulcers are usually a consequence of poor health rather than a cause of death.[6]

The practicality of the research question: The NICE guidelines on VTE identify five areas for future research; one of them is considering the absolute risk of VTE in different groups of patients admitted to hospital. Therefore one can assume that elderly patients with restricted mobility would represent such a group, given that the previous research discussed above has not specifically focused on this group.[25] Indeed, surgical risk factors for DVT are well known, but medical risk factors have been less clearly defined, particularly in geriatric populations, because studies of risk factors have often been conducted to identify a particular risk in middle-aged adult or outpatient populations, whereas geriatric populations suffer from considerable comorbidity.[13]

Despite the range of systematic reviews conducted and existing tools in use to measure risk of pressure ulcers, there is relatively little empirical evidence available concerning the reliability and validity of the tools.[6] Assessing reliability and validity is a real challenge in clinical practice because risk assessment scales are used to identify those who would develop a pressure ulcer should no interventions be put in place. However, in practice once risk is established, different pressure ulcer prevention strategies are used. Therefore different studies using the same risk assessment tools, but in diverse heath care settings with different patient populations and prevention strategies in use, report varying levels of sensitivity and specificity.[7]

Pressure ulcer risk assessment is in itself not an intervention but a precursor to the use of appropriate care.[26] Therefore the ability of risk assessment scales to reduce incidence of pressure ulcers and secondary outcomes, such as length of hospital stay and adverse clinical event, depends on the availability of interventions and their effective implementation.[6]

Whether the South West is a good place to do this research: The South West Peninsula has an older population than the England average. According to the Projecting Older People Population Information System, by the Institute for Public Care and Oxford Brooks University (www.poppi.org.uk), in 2014 there are over 1.14 million people aged over 65 living in the South West, of which 165, 000 are aged over 85, a third of which are aged over 90. By 2025 there is forecast to be a 25 per cent rise in people aged over 65, and a 50 per cent rise in those aged over 90. The proportion of older people in the South West with restricted mobility is unknown.

Torbay and Southern Devon Health and Care NHS Trust introduced an initiative to reduce pressure ulcers (bedsores) in the community setting in 2013. A project team, named the PUP project (Pressure Ulcer Prevention) was established to provide educational tools and training for those who require care in the community.

Alignment with local health priorities: This will be different across the South West region and between organisations. Please consider the briefing in line with your local priorities.

GUIDELINES currently available that relate to this area:

There are several relevant guidelines on these conditions which include risk factors. There are NICE guidelines on both reducing the risk of VTE in patients admitted to hospital[1] and prevention and management of pressure ulcers.[4]

Interestingly the NICE guidelines for pressure sore prevention recommends using a validated scale to support clinical judgement and names the Braden scale, the Waterlow score and the Norton risk-assessment scale when assessing pressure ulcer risk,[4] despite the lack of review evidence for these scales. Other guidelines suggest that if risk assessment tools are used, additional factors (e.g., perfusion, skin status and other relevant risks) should be considered and that clinical judgment is essential.[22]

Risk factors for VTE identified in the NICE guidelines include: active cancer or cancer treatment; age over 60 years; critical care admission; dehydration; known thrombophilias; obesity; significant medical comorbidities; personal history or first-degree relative with a history of VTE; use of hormone replacement therapy; use of oestrogen-containing contraceptive therapy; and varicose veins with phlebitis.[1] From 1 June 2010, the Department of Health (DH) required that VTE risk assessments take place for every patient, and that results are closely monitored in order to reduce preventable deaths that occur in UK hospitals every year.

Relevant Abstracts:

Moore ZE, Cowman S. Risk assessment tools for the prevention of pressure ulcers. The Cochrane database of systematic reviews. 2014;2:Cd006471.

BACKGROUND: Use of pressure ulcer risk assessment tools or scales is a component of the assessment process used to identify individuals at risk of developing a pressure ulcer. Indeed, use of a risk assessment tool is recommended by many international pressure ulcer prevention guidelines, however it is not known whether using a risk assessment tool makes a difference to patient outcomes. We conducted a review to provide a summary of the evidence pertaining to pressure ulcer risk assessment in clinical practice.
OBJECTIVES: To determine whether using structured, systematic pressure ulcer risk assessment tools, in any health care setting, reduces the incidence of pressure ulcers. SEARCH METHODS: In December 2013, for this second update, we searched the Cochrane Wounds Group Specialised Register; The Cochrane Central Register of Controlled Trials (CENTRAL) (The Cochrane Library); Ovid MEDLINE; Ovid EMBASE; and EBSCO CINAHL.
SELECTION CRITERIA: Randomised controlled trials (RCTs) comparing the use of structured, systematic, pressure ulcer risk assessment tools with no structured pressure ulcer risk assessment, or with unaided clinical judgement, or RCTs comparing the use of different structured pressure ulcer risk assessment tools.
DATA COLLECTION AND ANALYSIS: Two review authors independently assessed titles and abstracts of the studies identified by the search strategy for eligibility, obtained full versions of potentially relevant studies and screened these against the inclusion criteria.
MAIN RESULTS: We included two studies in this review. One small, cluster randomised study found no statistical difference in pressure ulcer incidence in patients who were assessed by nurses using the Braden risk assessment tool (n=74) compared with patients assessed by nurses who had receiving training and then used unstructured risk assessment (n=76) (RR 0.97, 95% CI 0.53 to 1.77) and those patients assessed by nurses using unstructured risk assessment alone (n=106) (RR 1.43, 95% CI 0.77 to 2.68). The second study was a large single blind randomised controlled study which compared the effect of risk assessment on pressure ulcer incidence using the Waterlow risk assessment tool (n=411), the Ramstadius risk screening tool (n=420) and no formal risk assessment (n=420). There was no statistical difference in pressure ulcer incidence between the three groups (Waterlow 7.5% (n=31); Ramstadius 5.4% (n=22); clinical judgement 6.8% (n=28) (RR 1.10, 95% CI 0.68 to 1.81; Waterlow vs no formal risk assessment), (RR 0.79, 95% CI 0.46 to 1.35; Ramstadius vs no formal risk assessment), (RR 1.44, 95% CI 0.85 to 2.44; Waterlow vs Ramstadius).
AUTHORS' CONCLUSIONS: Two studies were identified which evaluated the effect of risk assessment on patient outcomes; In one study, there was no statistically significant difference in pressure ulcer incidence between people who were assessed using the Braden risk assessment tool compared with those receiving unstructured risk assessment. Methodological limitations of this study prevent firm conclusions being drawn. However, a further high quality RCT identified no statistical differences in pressure ulcer incidence when people were assessed using either the Waterlow risk assessment tool, the Ramstadius risk assessment tool, or using clinical judgement alone. There is no reliable evidence to suggest that the use of structured, systematic pressure ulcer risk assessment tools reduces the incidence of pressure ulcers.

Tamariz LJ, Eng J, Segal JB, Krishnan JA, Bolger DT, Streiff MB, et al. Usefulness of clinical prediction rules for the diagnosis of venous thromboembolism: a systematic review. The American journal of medicine. 2004;117(9):676-84.
PURPOSE: To summarize the evidence on the predictive value of clinical prediction rules for the diagnosis of venous thromboembolism.
METHODS: We selected all studies in the English literature in which a clinical prediction rule was prospectively validated against a reference standard, and calculated likelihood ratios, predictive values, and the area under the receiver operating characteristic (ROC) curve for each prediction rule.
RESULTS: Twenty-three studies met our eligibility criteria: 17 evaluated prediction rules for the diagnosis of deep venous thrombosis and six evaluated rules for pulmonary embolism. The most frequently evaluated prediction rule for deep vein thrombosis was the Wells rule, which had median positive likelihood ratios of 6.62 for patients with a high pretest probability, 1 for moderate pretest probability, and 0.22 for low pretest probability. The median area under the ROC curve was 0.82. Addition of the D-dimer test to the prediction rule increased the median area under the curve to 0.90. The Wells prediction rule was the most commonly studied for pulmonary embolus and had median positive likelihood ratios of 6.75 for those with high pretest probability, 1.82 for moderate pretest probability, and 0.13 for low pretest probability. The median area under the ROC curve was 0.82.

CONCLUSION: The Wells prediction rule is useful in identifying patients at low risk of being diagnosed with venous thromboembolism. The addition of a rapid latex D-dimer assay improved the overall performance of the prediction rule.

Weill-Engerer S, Meaume S, Lahlou A, Piette F, Saint-Jean O, Sachet A, et al. Risk Factors for Deep Vein Thrombosis in Inpatients Aged 65 and Older: A Case-Control Multicenter Study. Journal of the American Geriatrics Society. 2004;52(8):1299-304.

OBJECTIVES: To identify independent risk factors of symptomatic deep vein thrombosis (DVT) in geriatric inpatients and to define high-risk patients likely to benefit from preventive treatment.

DESIGN: Hospital-based case-control multicenter study with prospective data collection.

SETTINGS: Geriatric university hospitals with long-, intermediate-, and short-term care facilities.

PARTICIPANTS: All patients aged 65 and older in 19 geriatric departments were submitted to clinical surveillance over a 16-month period.

MEASUREMENTS: Twenty-three potential risk factors of phlebitis were screened for. Comparison using logistic regression of 310 consecutive patients with symptomatic DVT versus 310 randomly selected controls was performed. The risk for symptomatic DVT in geriatrics was then scored from the clinical risk factors identified using multivariate analysis. This score is defined by the sum of the odds ratio (OR) of each risk factor present.

RESULTS: Six factors were identified as independently related to the development of DVT: restriction of mobility (from OR51.73, limited mobility without immobilization, to OR55.64, bedridden during o15 days), aged 75 and older (OR51.5/10 years), history of DVT or pulmonary embolism (OR53.38), acute heart failure (OR52.52), chronic edema of the lower limbs (OR52.51), and paresis or paralysis of a lower limb (OR52.06). The defined score of 8 or higher corresponded to an 88.7% probability of having symptomatic DVT.

CONCLUSION: Treatments to prevent symptomatic DVT in hospitalized elderly should be evaluated on patients with these factors.

References:

1. NICE. Venous thromboembolism: Reducing the risk. National Institute for Health and Clinical Excellence - Clinical Guidelines. 2010.

2. Keeling DM, Mackie IJ, Moody A, Watson HG, the H, Thrombosis Task Force of the British Committee for Standards in H. The diagnosis of deep vein thrombosis in symptomatic outpatients and the potential for clinical assessment and D-dimer assays to reduce the need for diagnostic imaging. British Journal of Haematology. 2004;124(1):15-25.

3. Chen Y, DeVivo MJ, Jackson AB. Pressure ulcer prevalence in people with spinal cord injury: age-period-duration effects. Archives of Physical Medicine and Rehabilitation. 2005;86(6):1208-13.

4. NICE. Pressure ulcers: prevention and management of pressure ulcers. National Institute for Health and Clinical Excellence - Clinical Guidelines. 2014.

5. Baumgarten M, Margolis DJ, Localio AR, Kagan SH, Lowe RA, Kinosian B, et al. Pressure ulcers among elderly patients early in the hospital stay. The Journals of Gerontology Series A: Biological Sciences and Medical Sciences. 2006;61(7):749-54.

6. Moore ZE, Cowman S. Risk assessment tools for the prevention of pressure ulcers. The Cochrane Database of Systematic Reviews. 2014;2:CD006471.

7. Gould D, Goldstone L, Gammon J, Kelly D, Maidwell A. Establishing the validity of pressure ulcer risk assessment scales: a novel approach using illustrated patient scenarios. International Journal of Nursing Studies. 2002;39(2):215-28.

8. Chou R, Dana T, Bougatsos C, Blazina I, Starmer AJ, Reitel K, et al. Pressure ulcer risk assessment and prevention: a systematic comparative effectiveness review. Annals of internal medicine. 2013;159(1):28-38.

9. Garcia-Fernandez FP, Pancorbo-Hidalgo PL, Agreda JJ. Predictive capacity of risk assessment scales and clinical judgment for pressure ulcers: a meta-analysis. Journal of wound, ostomy, and continence nursing: official publication of The Wound, Ostomy and Continence Nurses Society / WOCN. 2014;41(1):24-34.

10. Coleman S, Gorecki C, Nelson EA, Closs SJ, Defloor T, Halfens R, et al. Patient risk factors for pressure ulcer development: systematic review. International Journal of Nursing Studies. 2013;50(7):974-1003.

11. Tamariz LJ, Eng J, Segal JB, Krishnan JA, Bolger DT, Streiff MB, et al. Usefulness of clinical prediction rules for the diagnosis of venous thromboembolism: a systematic review. The American Journal of Medicine. 2004;117(9):676-84.

12. Goodacre S, Sutton AJ, Sampson FC. Meta-Analysis: The Value of Clinical Assessment in the Diagnosis of Deep Venous Thrombosis. Annals of Internal Medicine. 2005;143(2):129-39.

13. Weill-Engerer S, Meaume S, Lahlou A, Piette F, Saint-Jean O, Sachet A, et al. Risk Factors for Deep Vein Thrombosis in Inpatients Aged 65 and Older: A Case-Control Multicenter Study. Journal of the American Geriatrics Society. 2004;52(8):1299-304.

14. Niederhauser A, VanDeusen Lukas C, Parker V, Ayello EA, Zulkowski K, Berlowitz D. Comprehensive programs for preventing pressure ulcers: a review of the literature. Advances in Skin & Wound Care. 2012;25(4):167-88.

14. House of Commons Health Committee. The prevention of venous thromboembolism in hospitalised patients. 2005, London: The Stationery Office.

15. Rashid S, Thursz M, Razvi N, Voller R, Orchard T, Shlebak A. Venous thromboprophylaxis in UK medical inpatients. Journal of the Royal Society of Medicine. 2005;98(11):507-12.

16. Scottish Intercollegiate Guidelines Network. Prevention and management of venous thromboembolism: A national clinical guideline. 2010.

17. Dealey C, Posnett J, Walker A. The cost of pressure ulcers in the United Kingdom. Journal of Wound Care. 2012;21(6):261-6.

18. Lacut K, Le Gal G, Mottier D. Primary prevention of venous thromboembolism in elderly medical patients. Clinical Interventions in Aging. 2008;3(3):399.

19. Heit JA, Silvestein MD, Mohr DN, et al. The epidemiology of venous thromboembolism in the community. Thrombosis & Haemostasis. 2001;86:452–63.

20. Kniffin WD, Jr, Baron JA, Barrett J, et al. The epidemiology of diagnosed pulmonary embolism and deep venous thrombosis in the elderly. Archives of Internal Medicine. 1994;154:861–6.

21. Lopez-Jimenez L, Montero M, Gonzalez-Fajardo JA, et al. Venous thromboembolism in very elderly patients: findings from a prospective registry (RIETE) Haematologica. 2006;91:1046–51.

22. National Pressure Ulcer Advisory Panel, European Pressure Ulcer Advisory Panel and Pan Pacific Pressure Injury Alliance. Prevention and Treatment of Pressure Ulcers: Quick Reference Guide. Emily Haesler (Ed.). Cambridge Media: Perth, Australia; 2014.

23. Spilsbury K, Nelson A, Cullum N, Iglesias C, Nixon H, Mason S. Pressure ulcers and their treatment and effects on quality of life: hospital inpatient perspectives. Journal of Advanced Nursing 2007;57(5):494–504.

24. Berlowitz DR, Wilking SV. The short-term outcome of pressure sores. Journal of the American Geriatrics Society 1990;38(7):748–52.

25. Hill J, Treasure T. Reducing the risk of venous thromboembolism (deep vein thrombosis and pulmonary embolism) in patients admitted to hospital: summary of the NICE guideline. Heart. 2010;96(11):879-82.

26. Lindgren M, Unosson M, Krantz AM, Ek AC. A risk assessment scale for the prediction of pressure sore development: reliability and validity. Journal of Advanced Nursing 2002;32(2):190–9.

PRIORITY BRIEFING ID 45

The purpose of this briefing paper is to aid stakeholders in prioritising topics to be considered by PenCLAHRC for further evaluation and/or research. This paper was compiled in 2-3 days. The following resources were searched to find this evidence: the TRIP database, NICE evidence, PROSPERO (for systematic review protocols), the Cochrane Library databases, MEDLINE, EMBASE, Health Management Information Consortium, Social Policy and Practice and the Controlled Trials registry. The briefing is in four parts:

i. General context and definitions
ii. The question in a structured format
iii. What the research evidence says
iv. Alignment with PenCLAHRC research priority criteria

QUESTION: Can we reduce attendances at accident and emergency departments (A&E) through either a) public information campaigns or b) changes in the way GP services are provided?

General context and definitions: Accident and emergency departments (A&E) are designed to provide rapid, high quality, continuously accessible, unscheduled care for a wide range of acute illnesses and injuries. In many countries A&E are facing an increase in demand for services, long-waits and overcrowding.[1] The cause of overcrowding is multi-factorial, and can be broken down into a range of factors.[2] One possible explanation for overcrowding is the use of A&E for conditions triaged as non-urgent. Use of A&E for non-urgent problems that could be cared for in other settings has been described since the 1970s[3] and is often labelled by health professionals as "inappropriate use", although this is complicated by different definitions in the literature.[1] Inappropriate attendances may account for up to 40% of presentations at accident and emergency (A&E) departments. There is considerable interest from health practitioners and policymakers in interventions to reduce this burden.[4]

The question in a structured format: The research question could be framed in the following way:

Population:	Either everyone or GP attenders depending on intervention
Intervention:	1. Public information campaigns designed to reduce "avoidable" A&E attendance
	2. Changes to GP services, e.g. extended hours, increased flexibility in booking
Comparator:	Either an area without public information campaign or GP surgeries with routine practice
Outcomes of Interest:	"Avoidable" attendance at accident and emergency departments

What the research evidence says: Three systematic reviews published since 2011 have considered a range of interventions that either reduce inappropriate A&E attendance[4] or aim to reduce the use of A&E regardless of the appropriateness of attendance.[5-6] Of most relevance to the research question here is Ismail and colleagues' 2013 systematic review that included primary care interventions, defined as out-of-hospital care or integrated care interventions to which patients have direct access.[4] Interventions evaluated included telephone triage, walk in clinics, community health centres, emergency nurse practitioners and out of hours GP services. The review authors found little high-quality evidence on the interventions considered and no conclusive evidence was found to suggest that any of the interventions consistently reduce A&E attendance rates. The only clear effect demonstrated was for telephone triage interventions where a reduction in telephone calls made to A&E departments for advice was seen. The limited available evidence suggests that emergency nurse practitioners in community settings and community health centres may reduce A&E attendance. There was an absence of clinical outcome and cost data across studies and no clear evidence for the effectiveness of out of hours GP services.

Morgan and colleagues' systematic review included a broader range of interventions – any outside of A&E – and only studies that measured A&E use as an outcome were included.[5] Interventions evaluated included additional non-A&E capacity (both new community clinics and expansion of existing physician services; managed care (GP capitation or Gatekeeping); patient financial incentives and patient education. The interventions with the largest number of studies showing reductions in A&E use included patient financial incentives and managed care. By contrast, less than half of the studies on increasing capacity found reductions in A&E use, and one found an increase. Only five out of the 39 included studies were randomised controlled trials.

Althaus and colleagues also published an earlier systematic review that included interventions targeting adult frequent users of A&E.[6] They found that the most-tested and effective intervention was case management, referring to coordination of health services on behalf of the patient by multidisciplinary teams composed of nurses, social workers, and physicians. Seven out of the 11 included studies testing this intervention found significant reductions in A&E attendance compared to control groups. All three studies that included cost analysis showed a reduction in A&E costs for the intervention group. This systematic review did not include studies that tested the effects of providing additional non A&E services, such as extended GP hours.

The three systematic reviews did not use meta-analysis to synthesise included study findings. Althaus and colleagues note that this was because of the heterogeneity in the selected studies in terms of design, definition of frequent users, intervention type, outcomes, and outcome measurement. Neither of the 2013 systematic reviews reported clear reductions in A&E use for extended GP hours interventions. Furthermore, Schoen and colleagues surveyed primary care doctors in Australia, Canada, France, Germany, the Netherlands, New Zealand, Norway, Switzerland, the United Kingdom, and the United States, and found that the UK doctors were the most likely to say that their practice already has arrangements for patients to see doctor or nurse after hours without going to an accident and emergency department (reported by 95% of UK doctors surveyed).[7]

For the other intervention specifically mentioned in the question, public information campaigns to reduce inappropriate A&E attendance, only two studies within the three systematic reviews appear to be relevant. These interventions were information booklets sent to households and reminders about telephone services available.[8-9] Neither showed a significant reduction in A&E attendance.

Ongoing studies/ Trials in progress: An ongoing Swiss trial is evaluating a specific case management intervention for frequent users (FU) of A&E. The intervention includes referrals to mental health departments inside the hospital, and if necessary, to a psychiatrist, psychologist or general practitioner (GP) out in the community; substance abuse services; and new GPs as appropriate for the patient. A&E visit frequency is the primary outcome. (see https://clinicaltrials.gov/ct2/show/ NCT01934322)

How does this fit with PenCLAHRC research priority criteria?

Size of the health problem: A rise in accident and emergency (A&E) attendances in the UK in recent years has been accompanied by sharp increases in short-stay admissions and associated costs.[10] It has been estimated that between 15% and 40% of A&E attendances are "inappropriate" or "avoidable".[11] Nevertheless, findings from a large number of studies agree that access, patient self-assessment of illness severity, and confidence in the quality of A&E care are key drivers for inappropriate presentation.[12] Policy has focused on redirecting patients to more appropriate forms of care, but there is a lack of high-quality evidence on primary care interventions supporting this aim.[4]

Across England, compliance with the four hour standard is decreasing. Compliance means that 95 per cent of patients should be seen, treated and discharged within four hours.[13] [NHS England] Annual data on A&E waiting times and activity in England shows that total A&E attendances have been rising year on year. The percentage of patients waiting 4 hours or less from arrival to admission, transfer or discharge was 95.7% for all A&E departments in 2013-2014. This figure has fallen year on year since 2009-2010. (see http://www.england.nhs.uk/statistics/statistical-work-areas/ae-waiting-times-and-activity/weekly-ae-sitreps-2014-15/)

The potential for health improvement: Inappropriate A&E use may result in increased health-service costs, contribute to overcrowding and may compromise care for true emergencies.[1] Use of the A&E for primary care treatable conditions is not optimal since access to timely and effective primary care is linked to better health care outcomes and reductions in costly ED visits and hospital admissions.[14] Socioeconomic factors have been implicated as root causes of inappropriate A&E use and hospitalisation for primary care treatable conditions. However, these factors do not fully explain the underuse of primary care services in patients presenting for emergency care.[15]

The systematic reviews conducted to date provide some evidence that interventions including telephone triage, patient financial incentives, case management and managed care may reduce A&E attendance. Adverse effects of A&E overcrowding on patient experience and care are considered in several research papers. Moseley and colleagues show that overcrowding leads to low staff: patient ratios which increases the risks of mistakes including medication errors and inappropriate monitoring.[16] Bernstein and colleagues show that overcrowding is associated with an increased risk of in-hospital mortality, longer times to treatment for patients with pneumonia or acute pain and a higher probability of leaving A&E without being seen or against medical advice.[17]

The practicality of the research question: It appears that inappropriate use of A&E is a significant contributor to both A&E attendance and waiting time figures and despite three recent systematic reviews there is still a lack of clarity regarding what type of intervention may be most effective in reducing inappropriate A&E attendance. With regard to the two interventions named in the question, changes to GP services have appeared in the systematic reviews, but there has not been a randomised controlled trial testing increased GP out of hours or more accessible GP appointments, which may contribute to the lack of certainty regarding the effectiveness of these interventions. However, research by Schoen and colleagues indicates that GPs in the UK are more likely that those in nine other countries to say that their practice already has arrangements for patients to see doctor or nurse after hours without going to an accident and emergency department,[7] suggesting that this type of intervention may already be in high use, despite lack of clear evidence for its effectiveness. Public information campaigns on the other hand have not been tested as frequently.

Whether the South West is a good place to do this research: There were 1,617,892 Accident and Emergency (A&E) attendances (excluding planned follow-ups) recorded in HES (Hospital Episodes Statistics) for the South West Strategic Health Authority during 2012-2013 as reported in the Health and Social Care Information Centre’s Hospital Episode Statistics Accident and Emergency Attendances in England 2012-13 Report.[18] Of these attendances, HES records that 1,543,210 (95.4%) have a duration in A&E of 4 hours or less. Of all A&E attendances, the highest percentage (44.1%) were discharged as 'Discharged - no follow up', indicating that inappropriate attendance may be a concern.

GUIDELINES currently available that relate to this area:

The maximum four-hour wait in A&E remains a key NHS commitment to the public, set out in the NHS Constitution. On January 18 2013 Sir Bruce Keogh announced a comprehensive review of the NHS urgent and emergency care system in England. The end of phase 1 report set out a vision which included providing highly responsive, effective and personalised services outside of hospital for those people with urgent but non-life threatening needs and with these services delivering care in or as close to people’s homes as possible.[19]

In 2013 NHS England announced a support plan to help hospital and A&E departments reduce waiting times. Resolving A&E attendance issues requires the commissioning system to work with all key partners in hospitals, primary care, and local authorities to create a single national framework. The plan highlighted 3 phases:

i. An urgent recovery programme with significant attention given by local and national commissioners and providers to all factors which can help recover the standards (including clear performance management).

ii. A medium term approach to ensure delivery over the next winter period. This will include care system planning as well as a review of the levers and incentives in the system.

iii. In the longer term, the implementation of the urgent care strategy in order to deliver safe and sustainable services.

The plan builds on existing planning and contracting arrangements and discussions taking place to deliver Everyone Counts: Planning for Patients 2013-14. Everyone Counts has set out that no patients should wait more than 12 hours on a trolley in an A&E department. NHS England has implemented requirements to monitor people's experience in A&E departments, adding to the picture on performance.

Relevant Abstracts:

Ismail SA, Gibbons DC, Gnani S. Reducing inappropriate accident and emergency department attendances: a systematic review of primary care service interventions. Br J Gen Pract. 2013;63(617):e813-20.

BACKGROUND: Inappropriate attendances may account for up to 40% of presentations at accident and emergency (A&E) departments. There is considerable interest from health practitioners and policymakers in interventions to reduce this burden.

AIM: To review the evidence on primary care service interventions to reduce inappropriate A&E attendances.

DESIGN AND SETTING: Systematic review of UK and international primary care interventions.

METHOD: Studies published in English between 1 January 1986 and 23 August 2011 were identified from PubMed, the NHS Economic Evaluation Database, the Cochrane Collaboration, and Health Technology Assessment databases. The outcome measures were A&E attendances, patient satisfaction, clinical outcome, and intervention cost. Two authors reviewed titles and abstracts of retrieved results, with adjudication of disagreements conducted by the third. Studies were quality assessed using the Scottish Intercollegiate Guidelines Network checklist system where applicable.

RESULTS: In total, 9916 manuscripts were identified, of which 34 were reviewed. Telephone triage was the single best-evaluated intervention. This resulted in negligible impact on A&E attendance, but exhibited acceptable patient satisfaction and clinical safety; cost effectiveness was uncertain. The limited available evidence suggests that emergency nurse practitioners in community settings and community health centres may reduce A&E attendance. For all other interventions considered in this review (walk-in centres, minor injuries units, and out-of-hours general practice), the effects on A&E attendance, patient outcomes, and cost were inconclusive.

CONCLUSION: Studies showed a negligible effect on A&E attendance for all interventions; data on patient outcomes and cost-effectiveness are limited. There is an urgent need to examine all aspects of primary care service interventions that aim to reduce inappropriate A&E attendance.

Morgan SR, Chang AM, Alqatari M, Pines JM. Non-emergency department interventions to reduce ED utilization: A systematic review. Academic Emergency Medicine. 2013; 20(10): 969-85.

Objectives: Recent health policy changes have focused efforts on reducing emergency department (ED) visits as a way to reduce costs and improve quality of care. This was a systematic review of interventions based outside the ED aimed at reducing ED use.

Methods: This study was designed as a systematic review. We reviewed the literature on interventions in five categories: patient education, creation of additional non-ED capacity, managed care, prehospital diversion, and patient financial incentives. Studies written in English, with interventions administered outside of the ED, and a comparison group where ED use was an outcome, were included. Two independent reviewers screened search results using MEDLINE, Cochrane, OAIster, or Scopus. The following data were abstracted from included studies: type of intervention, study design, population, details of intervention, effect on ED use, effect on non-ED health care use, and other health and financial outcomes. Quality of individual articles was assessed using Grading of Recommendations Assessment, Development, and Evaluation (GRADE) guidelines.

Results: Of 39 included studies, 34 were observational and five were randomized controlled trials. Two of five studies on patient education found reductions in ED use ranging from 21% to 80%. Out of 10 studies of additional non-ED capacity, four showed decreases of 9% to 54%, and one a 21% increase. Both studies on prehospital diversion found reductions of 3% to 7%. Of 12 studies on managed care, 10 had decreases ranging from 1% to 46%. Nine out of 10 studies on patient financial incentives found decreases of 3% to 50%, and one a 34% increase. Nineteen studies reported effect on non-ED use with mixed results. Seventeen studies included data on health outcomes, but 13 of these only included data on hospitalizations rather than morbidity and mortality. Seven studies included data on cost outcomes. According to the GRADE guidelines, all studies had at least some risk of bias, with four moderate quality, one low quality, and 34 very low quality studies.

Conclusions: Many studies have explored interventions based outside the ED to reduce ED use in various populations, with mixed evidence. Approximately two-thirds identified here showed reductions in ED use. The interventions with the greatest number of studies showing reductions in ED use include patient financial incentives and managed care, while the greatest magnitude of reductions were found in patient education. These findings have implications for insurers and policymakers seeking to reduce ED use.

Althaus F, Paroz S, Hugli O, Ghali WA, Daeppen J-B, Peytremann-Bridevaux I, et al. Effectiveness of interventions targeting frequent users of emergency departments: a systematic review. Annals of emergency medicine. 2011;58(1):41-52. e42.

STUDY OBJECTIVE: Frequent users of emergency departments (EDs) are a relatively small group of vulnerable patients accounting for a disproportionally high number of ED visits. Our objective is to perform a systematic review of the type and effectiveness of interventions to reduce the number of ED visits by frequent users.
METHODS: We searched MEDLINE, EMBASE, CINAHL, PsychINFO, the Cochrane Library, and ISI Web of Science for randomized controlled trials, nonrandomized controlled trials, interrupted time series, and controlled and noncontrolled before-and-after studies describing interventions targeting adult frequent users of EDs. Primary outcome of interest was the reduction in ED use. We also explored costs analyses and various clinical (alcohol and drug use, psychiatric symptoms, mortality) and social (homelessness, insurance status, social security support) outcomes.
RESULTS: We included 11 studies (3 randomized controlled trials, 2 controlled and 6 noncontrolled before-and-after studies). Heterogeneity in both study designs and definitions of frequent users precluded meta-analyses of the results. The most studied intervention was case management (n=7). Only 1 of 3 randomized controlled trials showed a significant reduction in ED use compared with usual care. Six of the 8 before-and-after studies reported a significant reduction in ED use, and 1 study showed a significant increase. ED cost reductions were demonstrated in 3 studies. Social outcomes such as reduction of homelessness were favorable in 3 of 3 studies, and clinical outcomes trended toward positive results in 2 of 3 studies.
CONCLUSION: Interventions targeting frequent users may reduce ED use. Case management, the most frequently described intervention, reduced ED costs and seemed to improve social and clinical outcomes. It appears to be beneficial to patients and justifiable for hospitals to implement case management for frequent users in the framework of a clear and consensual definition of frequent users and standardized outcome measures.

References:

1. Khangura Jaspreet K, Flodgren G, Perera R, Rowe Brian H, Shepperd S. Primary care professionals providing non-urgent care in hospital emergency departments. Cochrane Database of Systematic Reviews. 2012; (11).

2. Asplin BR, Magid DJ, Rhodes KV, Solberg LI, Lurie N, Camargo CA Jr. A conceptual model of emergency department crowding. Ann Emerg Med 2003; 42(2):173–80.

3. Lees RE, Steele R, Spasoff RA. Primary care for non-traumatic illness at the emergency department and the family physician’s office. Can Med Assoc J 1976;114:333–7.

4. Ismail SA, Gibbons DC, Gnani S. Reducing inappropriate accident and emergency department attendances: a systematic review of primary care service interventions. Br J Gen Pract. 2013;63(617):e813-20.

5. Morgan SR, Chang AM, Alqatari M, Pines JM. Non-emergency department interventions to reduce ED utilization: A systematic review. Acad Emerg Med 2013; 20(10):969-85.

6. Althaus F, Paroz S, Hugli O, Ghali WA, Daeppen J-B, Peytremann-Bridevaux I, et al. Effectiveness of interventions targeting frequent users of emergency departments: a systematic review. Ann Emerg Med. 2011;58(1):41-52. e42.

7. Schoen C, Osborn R, Squires D, Doty M, Rasmussen P, Pierson R, et al. A survey of primary care doctors in ten countries shows progress in use of health information technology, less in other areas. Health Affairs. 2012;31(12): 2805-16.

8. Rector TS, Venus PJ, Laine AJ. Impact of mailing information about non-urgent care on emergency department visits by Medicaid beneficiaries enrolled in managed care. Am J Manag Care. 1999; 5:1505–12.

9. McWilliams DB, Jacobson RM, Van Houten HK, Naessens JM, Ytterberg KL. A program of anticipatory guidance for the prevention of emergency department visits for ear pain. Arch Pediatr Adolesc Med. 2008; 162:151–6.

10. Blunt I, Bardsley M, Dixon J. Trends in Emergency Admissions in England 2004–2009: Is greater efficiency breeding inefficiency? London: Nuffield Trust, 2010. http://www.nuffieldtrust.org.uk/publications/trends-emergency-admissions-england-2004-2009.

11. Martin A, Martin C, Martin PB, Martin PA, Green G, Eldridge S. 'Inappropriate' attendance at an accident and emergency department by adults registered in local general practices: how is it related to their use of primary care? Journal of health services research & policy. 2002;7(3):160-5.

12. Doobinin KA, Heidt-Davis PE, Gross TK, Isaacman DJ. Non-urgent pediatric emergency department visits: care-seeking behavior and parental knowledge of insurance. Pediatr Emerg Care. 2003;19(1):10-4.

13. NHS England. High quality care for all, now and for future generations: Transforming urgent and emergency care services in England. The Evidence Base from the Urgent and Emergency Care

Review. 2013; Available online at:[http://www england nhs uk/wp-content/uploads/2013/06/urg-emerg-care-ev-bse pdf].

14. Rust G, Ye J, Baltrus P, et al. Practical barriers to timely primary care access: impact on adult use of emergency department services. Arch Intern Med. 2008;168:1705–1710.

15. Schumacher JR, Hall AG, Davis TC, Arnold CL, Bennett RD, Wolf MS, et al. Potentially preventable use of emergency services: the role of low health literacy. Med Care. 2013;51(8):654-8.

16. Moseley MG, Moore T, Vagarali A, Rund D. Surge: an organizational response to emergency department overcrowding. JCOM. 2010;17(10).

17. Bernstein SL, Aronsky D, Duseja R, Epstein S, Handel D, Hwang U, et al. The effect of emergency department crowding on clinically oriented outcomes. Acad Emerg Med. 2009;16(1):1-10.

18. Health and Social Care Information Centre. Hospital Episode Statistics Accident and Emergency Attendances in England – 2012-13. 2014; Health and Social Care Information Centre.

19. NHS England. Transforming urgent and emergency care services in England. Urgent and Emergency Care Review End of Phase 1 Report. High quality care for all, now and for future generations. 2013; Available online at:[http://www.nhs.uk/NHSEngland/keogh-review/Documents/UECR.Ph1Report.FV.pdf].

PRIORITY BRIEFING ID 58

The purpose of this briefing paper is to aid stakeholders in prioritising topics to be considered by PenCLAHRC for further evaluation and/or research. This paper was compiled in 2-3 days. The following resources were searched to find this evidence: the TRIP database, NICE evidence, PROSPERO (for systematic review protocols), the Cochrane Library databases, MEDLINE, PsycINFO, CINAHL, Health Management Information Consortium and the Controlled Trials registry. The briefing is in four parts:

i. General context and definitions
ii. The question in a structured format
iii. What the research evidence says
iv. Alignment with PenCLAHRC research priority criteria

QUESTION: Does mental health training and triage support for paramedics improve the health outcomes of people experiencing a mental health crisis when Crisis Resolution support is unavailable?

General context and definitions: In 2000, the Department of Health recommended the formation of Crisis Resolution and Home Treatment (CRHT) Teams with the aim of preventing or shortening hospital stays for people experiencing intensive mental health crises and to improve service-user experience through the provision of intensive home support (24 hours a day, seven days a week). CRHT teams were implemented in 2001 and typically include social workers, mental health nurses, a psychiatrist and other support workers and through frequent home-visiting assess need, manage risks of being at home, assist with self-help strategies, offer psychological and practical help and administer medication.[1]

In February 2014, 22 national bodies involved in health, policing, social care, housing, local government and the third sector came together and signed the Crisis Care Concordat. The Mental Health Crisis Care Concordat[2] is a national agreement between services and agencies involved in the care and support of people in crisis. It sets out how organisations will work together better to make sure that people get the help they need when they are having a mental health crisis. One of the four areas of focus is: Urgent and emergency access to crisis care – making sure that a mental health crisis is treated with the same urgency as a physical health emergency.

The question in a structured format: The research question could be framed in the following way:

Population:	People experiencing a mental health crisis when crisis resolution support is unavailable
Intervention:	Mental health training and triage support for paramedics
Comparator:	Usual care
Outcomes of Interest:	Health outcomes

What the research evidence says: There is evidence of widespread variation in the functioning of CHRT teams nationally and a limited evidence base to guide best practice.[1 3 4] A national survey of the CHRT service (2011-2012) reported widespread variation in the functioning of teams in terms of healthcare professionals involved, mechanism of providing 24 hour support (home visits, telephone contact, contact via A&E Departments), the types of client groups accepted and the source of referrals.[5] For many individuals experiencing a mental health crisis, the first point of contact when accessing emergency services may therefore be a paramedic attending a 999 call.[6] No systematic reviews or primary research studies were located that specifically focussed on the effects of mental health training and triage support for paramedics attending people experiencing a mental health crisis. Evans and colleagues conducted a systematic review of paramedic training and identified several additional areas in which paramedics have been trained beyond their baseline competencies but no specific mention was made of mental health training or crisis support.[7] Shaban found little published research regarding paramedic clinical judgement and decision making in relation to mental health in a non-systematic review of the literature and none that was applicable to the UK context.[8]

Ongoing studies/trials in progress: Professor Sonia Johnson and colleagues at UCL and Camden and Islington Foundation NHS Trust are currently working on an NIHR funded Programme Grant (the CORE study http://www.ucl.ac.uk/core-study/about) which aims to improve the standard of support offered to users of Crisis Resolution Teams, although there is no specific mention of paramedic training.

How does this fit with PenCLAHRC research priority criteria?

Size of the health problem: In the UK, one in four people will experience a mental health issue at some point in their life and one in six adults have a mental health issue at any one time[9]. Approximately one in a hundred people has a severe mental health issue. Mental health crises include suicidal behaviour or intention, panic attacks or extreme anxiety, psychotic episodes (loss of sense of reality). In the most recent household survey of psychiatric morbidity (2007), the overall prevalence of psychotic disorder was 0.4%; 16.7% of people reported that they had thought about committing suicide at some point in their life; 5.6% said that they had attempted suicide and 4.9% had engaged in self-harm.

The potential for health improvement: There is little robust evidence on which to base predictions of improvement, however many commentators agree that better co-ordination of services for people experiencing mental ill health will result in better outcomes for individuals.

The practicality of the research question: Although there are many guidelines and policy documents that make recommendations for improving access to services for people experiencing mental health crises, we were not able to find any published research projects that have evaluated the effectiveness of different methods. We located two examples of policies being implemented; additional training requirements or how these have been developed or delivered are not described.

South East Coast Ambulance Service and Kent and Medway NHS and Social Care Partnership Trust have an ambulance mental health referral pathway which has been in use since 2010. The pathway describes the process for ambulance crews to refer people to mental health services across Kent and Medway rather than being taken to the Emergency Department.

The North West Ambulance Service NHS Trust (NWAS) and North West Regional Police Forces, under the authority of the North West Regional Mental Health Forum, have implemented a policy which provides guidance for ambulance service personnel, medical practitioners, mental health professionals and police officers to ensure that patients with mental ill health are conveyed in a manner which is most likely to preserve their dignity and privacy consistent with managing any risk to their health and safety or to other people and in accordance with the Mental Health Act.

The Association of Ambulance Chief Executives (AACE) has submitted a funding bid to the Department of Health for the 15/16 Central Spending Review to generate initiatives to improve the knowledge and skills of ambulance staff with regard to mental health patients.[10]

Whether the South West is a good place to do this research: Devon Partnership NHS Trust is currently working with Devon and Cornwall Police in a Department of Health pilot scheme to provide the joint remit of a daytime diversion and liaison service and a night-time street triage service across Devon. One of nine schemes nationally, mental health professionals provide on the spot advice to police officers who are dealing with people with possible mental health problems. The aim is, where possible to help police offers make appropriate decisions, and lead to people receiving appropriate care more quickly.

Alignment with local health priorities: This will be different across the South West region and the organisation. Please consider the briefing in line with your local priorities.

GUIDELINES currently available that relate to this area:

The NHS Mandate for 2014-15[11] contains an objective for the NHS to make sure that every community develops plans, based on the principles set out in the Mental Health Crisis Care Concordat, that mean no one in crisis will be turned away. These documents also say that people in mental distress should be kept safe and should be able to find the support they need in whatever circumstances they need it and from whoever they turn to first.

NICE Guidelines CG136[12] produced in 2011 state that people who are in mental health crisis should be able to access their treatment plan including any advanced directives. Assessment in crisis should be undertaken by experienced health and social care professionals competent in crisis working and should include an assessment of the service user’s relationships, social and living circumstances and level of functioning as well as their symptoms, behaviour diagnosis and current treatment.

The Ambulance Service Network report ‘A vision for emergency and urgent care – the role of ambulance services’ describes a vision for integrated and seamless services across primary, secondary and community care, including a range of urgent care services available 24 hours a day, seven days a week.[13]

The Joint Royal Ambulance Liaison Committee (JRCALC)[14] devises clinical guidelines that paramedics and ambulance personnel can refer to, to support decision making when presented with a person with mental health needs. These guidelines cover three relevant areas of care –

transportation of a person subject to detention under the Mental Health Act (1983), assessing capacity in relation to consent to treatment and or conveyance and assessing risk in relation to self-harm and or suicide.

References:

1. Johnson S. Crisis resolution and home treatment teams: An evolving model. Adv Psychiatr Med 2013;19:115-23
2. Department of Health and Concordat Signatories. Mental Health Crisis Care Concordat – Improving outcomes for people experiencing mental health crisis, 2014.
3. Hubbeling D, Bertram R. Crisis resolution teams in the UK and elsewhere. J Mental Hlth 2012;21(3):285-95
4. Rhodes P, Giles S. 'Risky Business': a critical analysis of the role of crisis resolution and home treatment teams. J Mental Hlth 2013;23(3):130-34
5. Paterson B, Lloyd-Evans B, Johnson S. A national survey of crisis resolution and home treatment teams. Lincolnshire Partnership Foundation Trust Annual Nursing Conference 2014, 2014.
6. Elliott R. Exploring the developmental need for a paramedic pathway to mental health. J Paramed Pract 2013;5(5):264-70
7. Evans R, McGovern R, Birch J, et al. Which extended paramedic skills are making an impact in emergency care and can be related to the UK paramedic system? A systematic review of the literature. Emerg Med J 2013; doi:10.1136/emermed-2012-202129
8. Shaban R. Paramedics' clinical judgement and mental health assessments in emergency contexts: Research, practice and tools of the trade. J Emerg Prim Hlth Care 2006;4(2)
9. McManus S, Meltzer H, Brugha T, et al. Adult Psychiatric Morbidity in England: results of a household survey 2007. London, 2009.
10. Association of Ambulance Chief Executives. Annual Report, 2013/2014.
11. Department of Health. The Mandate: a mandate from the Government to NHS England April 2014- March 2015. London, 2013.
12. National Institute for Health and Clinical Excellence. NICE Guidance CG136: Service user experience in adult mental health: improving the experience of care for people using adult NHS mental health services. Manchester, 2011.
13. Ambulance Service Network. A vision for emergency and urgent care - the role of ambulance services. London, 2008.
14. Joint Royal College Ambulance Liaison Committee. UK Ambulance Service Clinical Practice Guidelines, 2006.

The purpose of this briefing paper is to aid stakeholders in prioritising topics to be considered by PenCLAHRC for further evaluation and/or research. This paper was compiled in 2-3 days. The following resources were searched to find this evidence: the TRIP database, NICE evidence, PROSPERO (for systematic review protocols), the Cochrane Library databases, MEDLINE and the Controlled Trials registry. The briefing is in four parts:

i. General context and definitions
ii. The question in a structured format
iii. What the research evidence says
iv. Alignment with PenCLAHRC research priority criteria

QUESTION: Would "green prescriptions" improve patient wellbeing, quality of life and reduce GP visits by patients with complex health problems or mild to moderate depression?

General context and definitions: "Green prescription" is a concept originally developed in New Zealand in the late 1990s by health practitioners and was used to describe the colour of the prescription pads used to prescribe physical activity. It draws parallels to the usual prescriptions given to patients for medications but emphasises the importance of exercise in improving their condition, rather than relying on drugs alone. In more recent years, and within the UK setting in particular, the term 'green prescription' (also termed 'green exercise' and 'green care') has been used to describe referral to a scheme which includes aspects of physical activity in outdoor settings with strong natural environment components e.g. green spaces, paths, parks, nature reserves and countryside. Referral may be formal (actively 'prescribed' by health care practitioner), or informal (leaflet/contact details provided by health care practitioner).

The question in a structured format: The research question could be framed in the following way:

Population:	Several possible groups: those with complex health problems, those who are identified as frequently visiting the GP (> 10 visits per year), and those with mild to moderate depression.
Intervention:	Referral (direct or indirect) from health care practitioner to participate in activities immersed within the natural environment. Activities could include walking, gardening, and environmental conservation.
Comparator:	Usual care
Outcomes of Interest:	Measures of mental and physical well-being; Behaviour change (physical activity); Use of healthcare resources (visits to primary care)

What the research evidence says: To date, there have been no systematic reviews, and few controlled trials, of the effectiveness of green prescriptions via primary care practitioners for any health condition in the UK setting. New Zealand trials of green prescription, which focus mainly on the physical activity irrespective of setting, have shown improved physical activity, energy expenditure, health-related quality of life, and hospitalizations for older primary care patients.[1],[2] Green Prescriptions in New Zealand have been shown to be cost effective[3],[4] and valued by the GPs.[5] Benefits of Green Prescription centred around two main themes: (i) a non-medication approach to a healthier lifestyle and (ii) the support benefits of physical activity. Time constraint was the main barrier GPs perceived to using Green Prescriptions.[5]

Although not green prescription per se, two systematic reviews have assessed whether exercising in a natural environment has any advantages over the synthetic and/or indoor setting.[6,7] Both found promising effects on mental wellbeing immediately following exercise in nature compared to exercising indoors. However, the interpretation and extrapolation of findings for both reviews were hampered by poor methodological quality of the included studies and heterogeneity of outcome measures used. Two recent retrospective analyses of representative data sets from National Health Surveys in Finland and Scotland however add support to these review findings.[8,9] The Finnish study found repeated physical activity in nature to be associated with better emotional well-being and the Scottish study found that physical activity in natural environments was not only associated with a reduction in the risk of poor mental health to a greater extent than physical activity in other environments, but also that activity in different types of environment may promote different kinds of positive psychological response. A comprehensive literature review of interactions with nature, found a range of psychological, cognitive, physiological, social, tangible and spiritual benefits.[10] A systematic review of the effects of walking interventions for people with depression has also shown significant alleviation of depressive symptomology, however there were insufficient data and robustness of studies to discriminate whether there were differences between outdoor and indoor walking.[11]

A mapping exercise of green prescriptions for NHS Health Scotland in 2010 found a large number of outdoor schemes which had a wide geographical spread, and which had the potential to be used for outdoor exercise referral.[12] At the time, many of the schemes were small, community based, with short to medium term funding and although many had partnerships with the NHS, many did not. The report highlighted the barriers and facilitators to establishing green prescriptions, but did not focus on the benefit/harms or their effectiveness. In 2013, Mind published their report of ‘ecotherapy’.[13] Closely aligned to green prescription, ecotherapy is defined as ‘a regular activity that is: facilitated and structured, focuses on doing an activity rather than ‘health’, takes place in a green environment, is related to exploring and appreciating the natural world, happens over time, and involves contact with other people’. From 2009 to 2013, MIND funded 130 ecotherapy projects across England involving over 12,000 people from all walks of life, who were encouraged to get active outdoors in nature spaces (e.g. gardening, food growing or environmental conservation work). Independent evaluation of these projects found that ecotherapy was able to improve mental and physical well-being, reduce social isolation, improve lifestyle behaviours, be cost-effective, and where available, was viewed by health professionals as an attractive alternative to the prescription of medication [13].

Ongoing studies/ Trials in progress: One related health technology appraisal (HTA) update is in progress: ‘The clinical effectiveness and cost-effectiveness of exercise referral schemes’. Whilst this relates to green prescription, there are subtle but important differences. The definition of exercise referral schemes for this appraisal are: referral from a primary care physician, tailoring of the exercise to the individual and monitoring throughout the programme. As such there is no requisite for outdoor activity engagement, and the individual tailoring may preclude the group based activities and programs such as those described in the ecotherapy report.[13] The previous

HTA on this topic found little evidence of effectiveness, but did not explore whether there was any benefit of exercise referral to schemes in the natural environment as opposed to indoors.[14]

How does this fit with PenCLAHRC research priority criteria?

Size of the health problem: In the UK, one in four people will experience a mental health issue at some point in their life and one in six adults have a mental health issue at any one time.[15] Recent findings from the general well-being survey found one in five people reported currently suffering from mild anxiety or depression.[16] Mental illness is the largest single cause of disability and represents 23% of the total burden of ill health in the UK.[17] In addition, in the UK, one third of the population have a long-term condition[17], and this is closer to two thirds of the population aged over 65 years. Evidence from The King's Fund report on long term conditions and mental health suggests that 30 per cent of people with a long term condition also have a mental health problem.[18] Taken together, it has been estimated that one in four of a full-time GP's patients will need treatment for mental health problems.[19]

The costs of mental health problems to the economy in England have recently been estimated at £105 billion, and treatment costs are expected to double in the next 20 years.[17]

The potential for health improvement: There is little robust evidence on which to base predictions of benefit. The Green Prescription cluster randomised controlled trial from New Zealand resulted in an extra 45min of moderate intensity physical activity per week, and significant improvements in perceived general health, but this was in a non-depressed general population attending primary care, and the outdoor environment was not a component of the intervention. The external evaluation of over 25 individual ecotherapy projects from MIND found that people who took part in the projects had measurable improvements in mental wellbeing, with seven out of ten people experiencing significant increases in wellbeing by the time they left the project. The type of project people got involved in didn't seem to make any difference, nor did their age. The evaluation also showed benefits beyond mental well-being, with project participants reporting more social inclusion, healthier lifestyles and feeling more connected to community. Whilst these data are not robust, and well designed trials are needed, they are suggestive that green prescriptions could offer extensive benefits to populations with mild to moderate depression and complex health needs.

The practicality of the research question: Polling of GP and CCG professionals, on behalf of Mind, identified that 36% of GPs would refer their patient to an ecotherapy project if there was one in their area, 44% of GPs wanted to find out more about social prescribing and 46% wanted to find out more about early interventions for people at risk of developing mental health problems.[13] Research by the Mental Health Foundation found that 78% of GPs had prescribed an antidepressant in the previous three years, despite believing that an alternative treatment might have been more appropriate.[20] In a follow up study, 70% of GPs said they would use more social prescribing (for example, exercise referral, self-help groups) for common mental health problems if they had the option.[21] The practicality of the research is highly dependent on the accessibility of organisations in the local area providing 'green exercise' schemes/options.

Whether the South West is a good place to do this research: There is an existing network of green prescription projects underway in Cornwall, with connections to other networks in the South West (e.g. the Natural Environment Research Council supported 'Dose of Nature' project, a partnership between the University of Exeter, the NHS and environmental organisations, and other activities at the European Centre). Researchers in this partnership are keen to develop, test, investigate and extend the work that is already done at a regional level. Several ecotherapy projects, such as the 'green links project' and the 'wild stay well project' are also underway across the region (http://www.mind.org.uk/information-support/drugs-and-treatments/ecotherapy/useful-contacts/find-ecotherapy-near-you/south-west-england/).

Alignment with local health priorities: This will be different across the South West region and between organisations. Please consider the briefing in line with your local priorities.

GUIDELINES & GOVERNMENT STATEGIES relating to this area:

There are no known UK guidelines related to green prescriptions per se. Whilst NICE guidelines on exercise were released in 2014[22], these guidelines are specifically related to improving physical activity. However, research recommendations attached to these guidelines, include the need to establish the effect of setting (including outdoors) on exercise referral success.

With regards to depression, current NICE guidelines[23] for mild to moderate to depression are to consider offering one or more of the following interventions, guided by the person's preference: individual guided self-help based on the principles of cognitive behavioural therapy (CBT), computerised cognitive behavioural therapy (CCBT), or a structured group physical activity programme. Green prescriptions would align well with this third option.

The cross government strategy 'No Health Without Mental Health' [17] aims to 'mainstream mental health'. It identifies the need to promote wellbeing and improve mental health as well as treat mental health problems.

The government's natural environment White Paper has established a network of Local Nature Partnerships (LNPs) to work strategically to improve a range of benefits we get from a healthy natural environment.[24] The white paper acknowledges the positive effect of spending time in nature and that it is a significant determinant of health. It states that LNPs and Health & Well Being Boards should actively seek to engage each other in their work, and have reciprocal representation on each partnership.

Relevant Abstracts:

Bowler DE et al. A systematic review of evidence for the added benefits to health of exposure to natural environments. [6]

Abstract Results & Conclusions: Twenty-five studies met the review inclusion criteria. Most of these studies were crossover or controlled trials that investigated the effects of short-term exposure to each environment during a walk or run. This included 'natural' environments, such as public parks and green university campuses, and synthetic environments, such as indoor and outdoor built environments. The most common outcome measures were scores of different self-reported emotions. Based on these data, a meta-analysis provided some evidence of a positive benefit of a walk or run in a natural environment in comparison to a synthetic environment. There was also some support for greater attention after exposure to a natural environment but not after adjusting effect sizes for pretest differences. Meta-analysis of data on blood pressure and cortisol concentrations found less evidence of a consistent difference between environments across studies. Overall, the studies are suggestive that natural environments may have direct and positive impacts on well-being, but support the need for investment in further research on this question to understand the general significance for public health.

Thompson Coon J, et al. Does participating in physical activity in outdoor natural environments have a greater effect on physical and mental wellbeing than physical activity indoors? A systematic review. [7]

Abstract Results & Conclusions: Most trials (n = 9) showed some improvement in mental wellbeing on one or other of the outcome measures. Compared with exercising indoors, exercising in natural environments was associated with greater feelings of revitalization and positive engagement, decreases in tension, confusion, anger, and depression, and increased energy. However, the results suggested that feelings of calmness may be decreased following outdoor exercise. Participants reported greater enjoyment and satisfaction with outdoor activity and declared a greater intent to repeat the activity at a later date. None of the identified studies measured the effects of physical activity on physical wellbeing or the effect of natural environments on exercise adherence. The hypothesis that there are added beneficial effects to be gained from performing physical activity outdoors in natural environments is very appealing and has generated considerable interest. This review has shown some promising effects on self-reported mental wellbeing immediately following exercise in nature which are not seen following the same exercise indoors. However, the interpretation and extrapolation of these findings is hampered by the poor methodological quality of the available evidence and the heterogeneity of outcome measures employed. The review demonstrates the paucity of high quality evidence on which to base recommendations and reveals an undoubted need for further research in this area. Large, well designed, longer term trials in populations who might benefit most from the potential advantages of outdoor exercise are needed to fully elucidate the effects on mental and physical wellbeing. The influence of these effects on the sustainability of physical activity initiatives also awaits investigation.

Robertson R, et al. Walking for depression or depressive symptoms: a systematic review and meta-analysis. [11]

Abstract Results & Conclusions: Of the 14,672 articles retrieved, eight trials met the inclusion criteria. The pooled standardised mean difference (effect size) was −0.86 [−1.12, −0.61] showing that walking has a statistically significant, large effect on symptoms of depression. However, there was considerable heterogeneity amongst the interventions and research populations and it is uncertain whether the results can be generalised to specific populations such as primary care patients. Walking has a statistically significant, large effect on the symptoms of depression in some populations, but the current evidence base from randomised, controlled trials is limited. Thus, while walking is a promising treatment for depression or depressive symptoms with few, if any, contraindications, further investigations to establish the frequency, intensity, duration and type(s) of effective walking interventions particularly in primary care populations would be beneficial for providing further recommendations to clinical practitioners.

References:

1. Kerse N, Elley CR, Robinson E, Arroll B. Is physical activity counseling effective for older people? A cluster randomized, controlled trial in primary care. J Am Geriatr Soc. 2005;53(11):1951-6.
2. Kolt GS, Schofield GM, Kerse N, Garrett N, Schluter PJ, Ashton T, et al. The healthy steps study: a randomized controlled trial of a pedometer-based green prescription for older adults. Trial protocol. BMC Publ Hlth. 2009;9:404.
3. Dalziel K, Segal L, Elley CR. Cost utility analysis of physical activity counselling in general practice. Austr NZ J Publ Hlth. 2006;30(1):57-63.
4. Leung W, Ashton T, Kolt GS, Schofield GM, Garrett N, Kerse N, et al. Cost-effectiveness of pedometer-based versus time-based Green Prescriptions: the Healthy Steps Study. Aust J Prim Health. 2012;18(3):204-11.
5. Patel A, Schofield GM, Kolt GS, Keogh JW. General practitioners' views and experiences of counselling for physical activity through the New Zealand Green Prescription program. BMC Fam Pract. 2011;12:119.
6. Bowler DE, Buyung-Ali LM, Knight TM, Pullin AS. A systematic review of evidence for the added benefits to health of exposure to natural environments. BMC Publ Hlth. 2010;10:456.
7. Thompson Coon J, Boddy K, Stein K, Whear R, Barton J, Depledge MH. Does participating in physical activity in outdoor natural environments have a greater effect on physical and mental wellbeing than physical activity indoors? A systematic review. Environ Sci Technology. 2011;45(5):1761-72.
8. Pasanen TP, Tyrvainen L, Korpela KM. The relationship between perceived health and physical activity indoors, outdoors in built environments, and outdoors in nature. Appl Psychol Hlth Well-being. 2014;6:324-46
9. Mitchell R. Is physical activity in natural environments better for mental health than physical activity in other environments? Soc Sci Med. 2013;91:130-4.
10. Keniger LE, Gaston KJ, Irvine KN, Fuller RA. What are the benefits of interacting with nature? Int J Environ Res Publ Hlth. 2013;10(3):913-35.
11. Robertson R, Robertson A, Jepson R, Maxwell R. Walking for depression or depressive symptoms: a systematic review and meta-analysis. Mental Hlth Phys Act. 2012;5:66-75.
12. Jepson R, Robertson R, Cameron H. Green prescription schemes: mapping and current practice. Edinburgh: 2010. Report No.
13. MIND. Feeling better outside, feeling better inside: ecotherapy for resilience, well-being and recovery. London: 2013.
14. Pavey TG, Taylor AH, Fox KR, Hillsdon M, Anokye N, Campbell JL, et al. Effect of exercise referral schemes in primary care on physical activity and improving health outcomes: systematic review and meta-analysis. BMJ. 2011;343:d6462.
15. McManus S, Meltzer H, Brugha T, Bebbington P, Eds. Adult Psychiatric Morbidity in England, 2007: Results of a Household Survey. London: 2009.
16. Office for National Statistics. Measuring National Well-being - Health 2013. London,2013.
17. Department of Health. No Health Without Mental Health: A Cross-Government Mental Health Outcomes Strategy for People of All Ages . London,2011.
18. Naylor C. Long-term conditions and mental health : the cost of co-morbidities. London: King's Fund and Centre for Mental Health; 2012.

19. Joint Commissioning Panel for Mental Health. Guidance for commissioners of primary mental health care services: practical mental health commissioning. London: 2012.
20. Mental Health Foundation. Up and running? Exercise therapy and the treatment of mild to moderate depression in primary care. London: 2005.
21. Mental Health Foundation. Moving on up. London: 2009.
22. National Institute for Health and Care Excellence. Exercise referral schemes to promote physical activity (NICE Guidelines PH54). London: National Institute for Health and Care Excellence; 2014.
23. National Institute for Health and Care Excellence. Depression in adults: The treatment and management of depression in adults (NICE Guidelines CG90). London: National Institute for Health and Care Excellence; 2009.
24. Department for Environment, Food and Rural Affairs. The Natural Choice: securing the value of nature. London: Department for Environment, Food, and Rural Affairs; 2011.

PRIORITY BRIEFING ID 62

The purpose of this briefing paper is to aid stakeholders in prioritising topics to be considered by PenCLAHRC for further evaluation and/or research. This paper was compiled in 2-3 days. The following resources were searched to find this evidence: the TRIP database, NICE evidence, PROSPERO (for systematic review protocols), the Cochrane Library databases, MEDLINE, EMBASE, CINAHL, the Health information Management Consortium and the Controlled Trials registry. The briefing is in four parts:

i. General context and definitions
ii. The question in a structured format
iii. What the research evidence says
iv. Alignment with PenCLAHRC research priority criteria

QUESTION: How can we better map delays in the discharge of patients from acute hospital beds, and so identify the range of factors that contribute to these delays compared to those patients whose discharge is timelier and to the experiences of service providers in other areas?

General context and definitions: Bed shortage is a nationwide problem and no less in the South West, with beds often being unavailable for emergency admissions and consequently with routine operations being cancelled. Accurately mapping the factors that currently delay discharge from acute beds from both service provider and patient perspectives, could help the development of interventions and service models that facilitate and speed up discharge from acute beds into more appropriate care.

The Department of Health has defined a delayed transfer of care as occurring when 'a patient is ready for transfer from a general and acute hospital bed but is still occupying such a bed. A patient is ready for transfer when i) a clinical decision has been made that a patient is ready for transfer, ii) a multi-disciplinary team decision has been made that a patient is ready for transfer, and iii) a patient is ready/safe to transfer'.[1]

The question in a structured format: The research question could be framed in the following way:

Population:	People whose discharge from hospital is delayed
Intervention:	Rather than an intervention, this question is concerned with the factors that might delay discharge, these might include medical, social, financial or organisational factors
Comparator:	N/A
Outcomes of Interest:	Appropriate utilisation of acute beds, patient satisfaction, patient recovery, reduction in the number of cancelled routine operations.

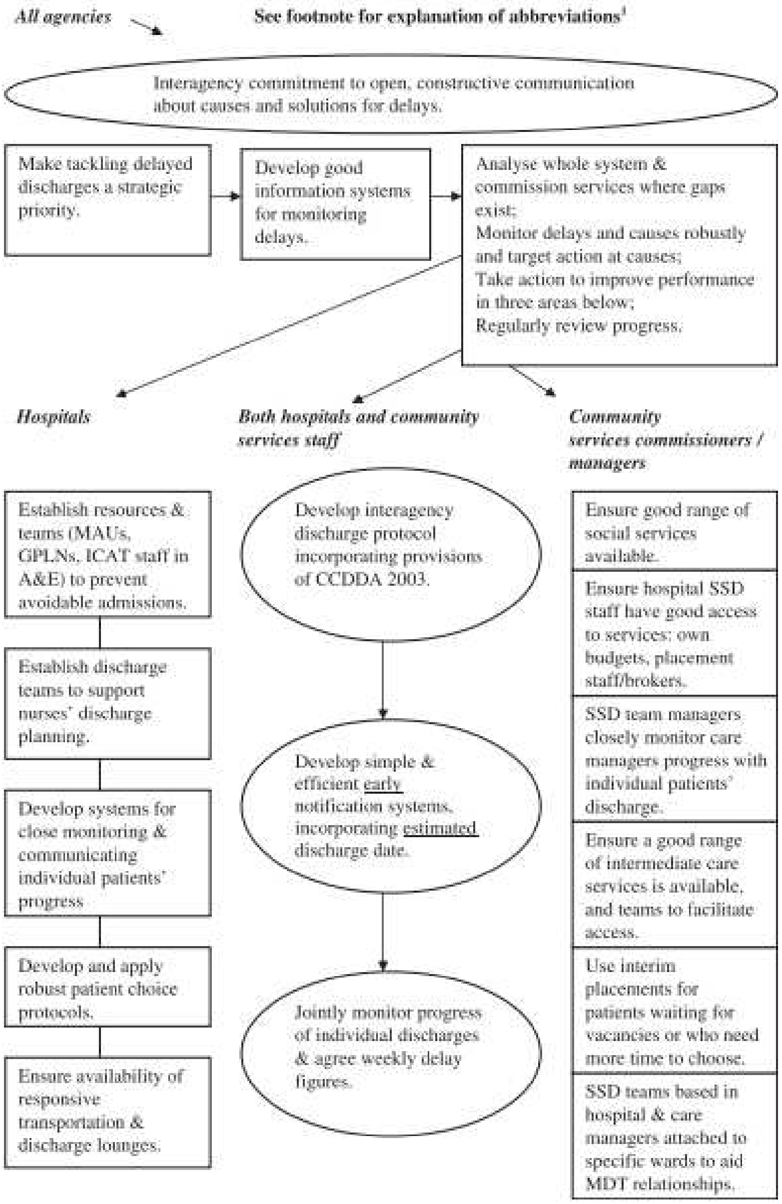
What the research evidence says: The National Audit Office report published in 2003 'Ensuring the effective discharge of older people from NHS acute hospitals' reported that common reasons for delayed discharge included poor procedures within hospitals, inadequate co-operation between the health and social care sectors and a lack of capacity in appropriate post-hospital care.[2] Older patients with more complex health needs, poorer mobility and confusion on admission are more likely to experience delays in discharge but those delays are likely to be due to organisational rather than person-related issues.[3-5] The most recent systematic review to consider the rate and cause of delayed discharge in the UK was published in 2006 and included 21 studies.[3] The authors comment on the prevalence of delays which are caused by internal hospital factors and the complex and multi-faceted nature of the factors that contribute to delays in discharge and highlight the importance of rehabilitation services to reduce the rate of delayed discharge. Lack of evidence regarding solutions to these problems is however lacking.[3]

A research paper produced by the Centre for Health Economics in York, explored the hypothesis that a higher supply of nursing and care homes might reduce delayed discharge from acute hospital beds.[6] Using data on delayed discharge from hospital from 147 local authorities in England from 2010 to 2012, the authors found that in areas where there are fewer care home beds or where the available beds are more expensive, delayed discharge from hospital is more common. Their model showed that an increase in beds by 10% would reduce delayed discharge by 4-7% and they conclude that an increase in supply would not significantly reduce overall costs across hospital and social care sectors. Additionally, they concluded that policies to reduce long term care prices may reduce delayed discharge as some delay may be attributed to families spending longer searching for suitable and affordable care home accommodation. A further economic study by Fernandez and Forder found that English local authorities with more home help hours and residential care beds had a lower rates of hospital delayed discharges and emergency readmission.[7]

Baumann and colleagues conducted a qualitative study in which they interviewed staff at sites with low rates of delayed discharge to investigate discharge practice and organisation in order to identify features supporting good performance.[8] The core features associated with success are shown in Figure 1 below. These features were exhibited in varying degrees across sites.

A Cochrane review (most recently updated in 2013) of the effectiveness of individualised discharge planning for patients moving from hospital to home concluded that a discharge plan tailored to the individual patient probably reduced the length of stay in hospital and readmission rates for older people with a medical condition.[9] The evidence on patient health outcomes was limited. Of the 24 included studies, only five were conducted in the UK and there was little discussion of the factors that might be involved in facilitating or preventing timely discharge. The patient and/or carer perspective is also often overlooked and has been little researched. An ethnographic study of participant observation on a ward for older people, which focussed on people who were designated as a ‘delayed discharge’ found that while many of the frail, old people were anxious about their futures and the experience of being in a state of transition, these fears were not shared with the nursing and care staff.[10] Swinkels and Mitchell used conversational interviews and a phenomenological approach to study the effects of delayed transfer in patients aged over 65 years and with a mean delay of 32 days recruited from three hospitals in the South of England. The findings showed that participants actively or passively relinquished their involvement in the processes of discharge planning because of the perceived expertise of others. Participants also reported feelings of disempowerment, low mood, dependency, and lack of information. The authors conclude that there is scope for improvement in the involvement of patients in their discharge planning.[11]

Figure 1. Actions supporting lower rates of delays (From Baumann and colleagues).



(MAU) medical assessment unit; (GPLN) general practitioner liaison nurse; (ICAT) intermediate care assessment team; (A&E) accident and emergency; (CCDDA) Community Care (Delayed Discharges etc.) Act 2003; (SSD) social services department; and (MDT) multidisciplinary team.

Ongoing studies/ Trials in progress: None were identified.

How does this fit with PenCLAHRC research priority criteria?

Size of the health problem: In the dataset from 2011-2013 used by Gaughan and colleagues,[6] in an average calendar month in each local authority area, 776 bed days were lost due to patients not being discharged when ready. Of these, 237 days were the responsibility of the local authority. There was wide variation in the data which were heavily skewed, with most local authorities at the lower end of the distribution.

The potential for health improvement: Bed-blocking or delayed discharge has been an issue in the NHS for many years. There is evidence from the patient perspective that uncertainty around discharge has negative implications for health and that improvements in the patient experience of discharge from hospital would be beneficial.

The practicality of the research question: Whilst the importance of the question is evident, it is not clear from the submitted question, what is being proposed as a solution. Rates of delayed discharge are known to differ between settings and a greater understanding of the factors involved in different settings might be useful but it has been noted previously that understanding the factors does not necessarily translate into implementable solutions that result in change.

Whether the South West is a good place to do this research: Optimising management of hospital resources and their relation to community health care resources is likely to be a key issue in the South West (as it is in other areas of the UK). Whether the organisation of services in the South West lends itself particularly to research in this area would require further exploration.

Alignment with local health priorities: This will be different across the South West region and between organisations. Please consider the briefing in line with your local priorities.

GUIDELINES & GOVERNMENT STATEGIES relating to this area:

The Delayed Discharges (Continuing Care) Act (2003) requires Local authorities and hospitals to collaborate around the discharge of patients from hospital. Local authorities are required to reimburse hospitals for delayed discharges for which they are solely responsible.

The National Service Framework for Older People (2001) states that older people will have access to a new range of intermediate care services at home or in designated care settings, to promote their independence by providing enhanced services from the NHS and councils to prevent unnecessary hospital admission and effective rehabilitation services to enable early discharge from hospital and to prevent premature or unnecessary admission to long-term residential care.

PRIORITY BRIEFING ID 62

Relevant Abstracts:

Glasby J, Littlechild R, Pryce K. All dressed up but nowhere to go? Delayed hospital discharges and older people. J Health Serv Res Policy. 2006;11(1)

OBJECTIVE: Delayed hospital discharges are a key concern in a number of industrialized nations and are the subject of a range of government initiatives in the English National Health Service. The aim of this paper was to review the UK literature on delayed hospital discharges and older people in order to identify and explore the rate and causes of delayed hospital discharges, together with policies and practices that may reduce delayed discharges and improve the experiences of older people.
METHODS: Literature review based on searches of major health/social-care databases. Sources which explore the rate and cause of delayed discharges in the UK were included. Relevant documents were categorized using the research hierarchy set out in the National Service Framework for Older People and analysed according to criteria for appraising the quality of qualitative research proposed by Mays et al.
RESULTS: The review identified 21 studies, which suggest very different rates and causes of delayed discharge in different settings. The studies reveal the importance of rehabilitation services to reduce the rate of delayed discharge,the prevalence of delayed discharges caused by internal hospital factors, and the complex and multi-faceted nature of the factors contributing to delayed discharge. Despite this, the studies have a number of methodological flaws and often fail to include a patient perspective or to consider detailed policies and approaches to reduce the number of delayed discharges. There is also a failure to consider the needs of older people with mental health problems or people from minority ethnic communities.
CONCLUSION: The evidence, as it currently stands, raises a number of issues about current hospital discharge policy, supporting some aspects of the current government agenda in England, but questioning other aspects.

Baumann M, Evans S, Perkins MC, L, Netten A, Fernandez J, Huxley P. Organisation and features of hospital, intermediate care and social services in English sites with low rates of delayed discharge. Health Soc Care Community. 2007;15(4):295-305

In recent years, there has been significant concern, and policy activity, in relation to the problem of delayed discharges from hospital. Key elements of policy to tackle delays include new investment, the establishment of the Health and Social Care Change Agent Team, and the implementation of the Community Care (Delayed Discharge) Act 2003. Whilst the problem of delays has been widespread, some authorities have managed to tackle delays successfully. The aim of the qualitative study reported here was to investigate discharge practice and the organisation of services at sites with consistently low rates of delay, in order to identify factors supporting such good performance. Six 'high performing 'English sites (each including a hospital trust, a local authority, and a primary care trust) were identified using a statistical model, and 42 interviews wereundertaken with health and social services staff involved in discharge arrangements. Additionally, the authors set out to investigate the experiences of patients in the sites to examine whether there was a cost to patient care and outcomes of discharge arrangements in these sites, but unfortunately, it was not possible to secure sufficient patient participation. Whilst acknowledging the lack of patient experience and outcome data, a range of service elements was identified at the sites that contribute to the avoidance of delays, either through supporting efficiency within individual agencies or enabling more efficient joint working. Sites still struggling with delays should benefit from knowledge of this range. The government's reimbursement scheme appears to have been largely helpful in the study sites, prompting efficiency-driven changes to the organisation of services and discharge systems, but further focused research is required to provide clear evidence of its impact nationally, and in particular, how it impacts on staff, and patients and their families.

Swinkels A, Mitchell T. Delayed transfer from hospital to community settings: the older person's perspective. Health Soc Care Community. 2009;17(1):45-53.

Prevention and management of delayed transfer of older people from hospital to community settings is an enduring issue in industrialised societies and is the subject of many recent policies in the United Kingdom. A deeper, evidence-based understanding of the complex organizational and inter-professional issues which contribute to delays in transfer has emerged in recent years. Despite this, and the relative success of recent policies, two recent reviews of the area highlight the lack of studies on patients' perspectives. We sought to address this deficit by using conversational interviews and a phenomenological approach to explore and interpret participants' perceptions of delayed transfer from hospital into the community. A purposive sampling strategy was employed to incorporate participants from different categories of delay identified on weekly

Situation Reports. Participants aged 65 years and over (mean age 82 +/- 5.4 years) and with a mean delay of 32 days (+/- 26) were recruited from three hospitals based in two NHS Trusts in the South of England. This paper focuses on their perceptions of the effects of delayed transfer into the community, their involvement in discharge planning and future community care needs. Our findings show that participants actively or passively relinquished their involvement in the processes of discharge planning because of the perceived expertise of others and also feelings of disempowerment secondary to poor health, low mood, dependency, lack of information and the intricacies of discharge planning processes for complex community care needs. Participants expressed a longing for continuity, emphasised the importance of social contact and sometimes appeared unrealistic about their future care needs. While current policies may have helped reduce overall numbers of delayed patients in the UK, our study suggests that there is scope for improvement in the involvement of delayed patients in planning their discharge into the community.

References:

1. Department of Health. Services for Older People 2002-2003 - Data Definitions.
2. National Audit Office. Ensuring the effective discharge of older people from NHS aute hospitals. 2003.
3. Glasby J, Littlechild R, Pryce K. All dressed up but nowhere to go? Delayed hospital discharges and older people. J Health Serv Res Policy. 2006;11(1).
4. Bryan K. Policies for reducing delayed discharge from hospital. Br Med Bull. 2010;95:33-46.
5. Jasinarachchi K, Ibrahim I, keegan B, mathialagan R, McGourty J, Phillips J, et al. Delayed transfer of care from NHS secondary care to primary care in England: its determinants, effect on hospital bed days, prevalence of acute medical conditions and deaths during delay, in older adults aged 65 years and over. BMC Geriatr. 2009;9:4.
6. Gaughan J, Gravelle H, Siciliani L. Testing the bed-blocking hypothesis: Does higher supply of nursing and care homes reduce delayed hospital discharges. York: 2014.
7. Fernandez J, Forder J. Consequences of local variations in social care on the performance of the ccute health care sector. Applied Economics. 2008;12:1503-18.
8. Baumann M, Evans S, Perkins M, Curtis L, Netten A, Fernandez J, et al. Organisation and features of hospital, intermediate care and social services in English sites with low rates of delayed discharge. Health Soc Care Community. 2007;15(4):295-305.
9. Shepperd S, Lannin N, Clemson L, McCluskey A, Cameron I, Barras S. Discharge planning from hospital to home. Cochrane Database of Systematic Reviews. 2013;Issue 1(Art. No.: CD000313):DOI: 10.1002/14651858.CD000313.pub4.
10. Kydd A. The patient experience of being a delayed discharge. J Nurs Manag. 2008;16(2):121-6.
11. Swinkels A, Mitchell T. Delayed transfer from hospital to community sessings: the older person's perspective. Health Soc Care Community. 2009;17(1):45-53.