



Care closer to home

Narrative report

2012

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Executive summary

Shifting specialist care within particular specialties into community settings has been the focus of recent health policies in the UK. This is to provide more flexibility, accessibility and timely care closer to people's homes. The aim is to encourage people to live independently, and to give them greater choice and control over their health, as well as to reduce NHS costs and the increasing demand for hospital resources.

A literature review on 'Care closer to home' (CCH) was conducted on studies between 2000 and 2009. The types of models of care included in this review were practitioners with special interests (general practitioners with special interests and nurses with special interests), specialist outreach clinics, intermediate care (including 'Hospital at home') and telemedicine.

Twenty-three studies met the inclusion criteria for our literature review. The majority were small scale and not recent. It is therefore not possible to draw any definite conclusions about the safety and clinical effectiveness of CCH schemes.

One clear finding was that CCH services significantly improve patients' satisfaction with healthcare services, as well as improving their attitudes to and knowledge of their individual conditions and treatments. This was achieved through better access for patients, in terms of the travel distance needed to see a specialist, as well as reduced waiting times for a specialist appointment. However, although patient acceptability was generally high for many aspects of CCH, patients who were assigned to telemedicine (where they had their consultations via a videoconferencing link) would still have preferred a traditional face-to-face consultation, had they been given a choice.

The limited evidence does suggest that specialist care that has been transferred into community settings is as safe and clinically effective as conventional hospital care for the four CCH models that were explored. The cost effectiveness of CCH has not been thoroughly evaluated; hence there is no clear evidence to suggest that CCH services can produce any cost savings to the NHS. The research literature also suggests that the new services are probably context dependent. More up-to-date and rigorous research is therefore needed before a definite conclusion can be drawn.

The literature review attempted to find evidence about carers' and healthcare professionals' perceptions of CCH but again the evidence on these two aspects was thin. There was no evidence to suggest that CCH is better or worse from carers' and healthcare professionals' perspectives, although some healthcare professionals had a small amount of concern about the quality of specialist care in community settings.

Healthcare professionals are key to the successful implementation of CCH. As evidence on CCH from their perspective was missing, an online survey was developed for healthcare professionals providing CCH for services in specialist dermatology, geriatrics, diabetes and/or chronic obstructive pulmonary disease (COPD), to explore their perceptions about specialist care being provided in community settings, closer to home.

Healthcare professionals across the four specialties and professions reported similar views on CCH. The services were generally positively rated and many valued this new opportunity to provide conveniently accessible and integrated care to their patients. Many, particularly nurses, also looked forward to expanding their own area of expertise by working with and learning from hospital specialists and receiving education and training to provide the specialty care. However, lack of support and training for their new roles were reported. Moreover, little or no changes to their roles and healthcare settings have been noted since CCH initiatives were introduced. Further issues such as staffing, lack of funding, poor infrastructure

and management, as well as lack of integrated working were also of concern to healthcare professionals providing CCH.

From the existing evidence, the main challenge is for policy-makers to carefully address the above issues around CCH to ensure that effective and sustainable implementation is achieved. It is also important to note that there is no one model that could be generalised and applied to all CCH specialties. Policy-makers therefore need to ensure that what works in a particular context is implemented.

Key messages and recommendations

Key messages

- Patients like having care closer to home and appreciate many aspects of 'Care closer to home' (CCH).
- Patients like telemedicine, but many would still have preferred a face-to-face consultation at the start of their treatment.
- There is little evidence to suggest that CCH is better or worse than care that is provided in hospital.
- There is no clear evidence that CCH is more cost-effective than hospital-based care.
- Up-to-date, evidence-based published research is needed to evaluate different approaches for CCH.
- Larger-scale studies may provide different outcomes on best practice for CCH.
- One model does not fit all specialties for CCH.

Recommendations

- Outcome-focused studies should be commissioned to evaluate the clinical and economic benefits of 'Care closer to home' (CCH). Commissioned research by bodies such as the National Institute for Health Research should build on existing smaller-scale projects that are demonstrating change.
- Payment systems should support pilots on CCH, rather than placing obstacles in the path of research on new models of patient care.
- CCH must be commissioned to meet the technical requirements and specific needs of a specialty.
- Clinical leadership and professionalism should be encouraged for CCH schemes.
- Professional bodies, such as the medical royal colleges, should provide leadership and support to physicians in their role as healthcare professionals to constantly evaluate and improve the care that they deliver to patients.

1 Background

Policy context

'Care closer to home' (CCH) is not a novel concept. As far back as the National Beds Inquiry^{*} and the NHS Plan[†] in 2000, the health service was intended to be redesigned around the patient. A new range of intermediate care services were meant to build a bridge between hospital and home with more specialist care provided closer to people's homes, in response to changes in demographics, attitudes and technology. Rapid response and 'Hospital-at-home' teams were introduced to work on an integrated basis with GPs, community nurses, physiotherapists and social care staff to make sure that people received the active support they needed to remain independent at home.

The theme of CCH continued to be developed in subsequent years, with the aims of improving access and convenience for patients, and potentially reducing the high demands for hospital care in response to an ageing population and an increasing number of people with one or more long-term conditions. In England, the white paper, *Our health, our care, our say*,[‡] announced the launch of six 'Shifting care closer to home' demonstration sites[§] – focusing on trauma and orthopaedics, dermatology, urology, gynaecology, general surgery, and ear, nose and throat – to provide frontline evidence about moving services to community settings.

With the launch of *Delivering care closer to home* in 2008,^{**} the Department of Health (DH) further developed these ideas, outlining their vision of developing services that

*are more responsive and work with users, focusing on **their** priorities rather than service-defined outcomes ... [and with] a greater emphasis on managing and living with long-term needs, compared with the more traditional emphasis on curing disease entwined with a shift towards 'co-production'.*

This emphasis on bringing care closer to home is a key theme in the *NHS next stage review* which, amongst other things, proposed the introduction of personal budgets for patients with long-term conditions to support the concept of 'self care'.

These themes, including the introduction of personal health budgets, are developed further by the government's proposed reforms to the health service in England, set out in the Health and Social Care Bill 2011 and the various *Liberating the NHS* white papers (2010). The concept of giving patients greater choice and control over their care, and the need to develop new and innovative ways to deliver services away from traditional settings, are central to these proposals.

^{*} Department of Health. *Shaping the future NHS: Long term planning for hospitals and related services: Consultation document on the findings of the National Beds Inquiry*. London, DH, 2000.

[†] Department of Health. *The NHS Plan: A plan for investment, a plan for reform*. London, TSO, 2000.

[‡] Department of Health. *Our health, our care, our say: A new direction for community services*. London, TSO, 2006.

[§] Department of Health. *Shifting care closer to home: Care closer to home demonstration sites – report of the specialty subgroups*. London: DH, 2007.

^{**} Department of Health. *Shifting care closer to home*. London: DH, 2007.

Models of care

In recent years, several different models of care have evolved to address CCH. Some examples are listed below.

- 1 Shifting care from hospitals into the community, where care is either mainly managed by primary care practitioners, eg practitioners with special interests (PwSIs) (eg GPs with special interest (GPwSIs), nurses with special interest (NwSIs), pharmacist with special interest (PhwSIs)); or where care is still managed by hospital specialists who travel out to community settings to see patients, eg at specialist outpatient clinics. These have been developed with the intention of improving access for patients and encouraging interaction between specialists and GPs. They provide opportunities for GP education and also for telemedicine, where a specialist has a consultation with the patient via a videoconferencing link.
- 2 Intermediate care, which aims to prevent unnecessary admission to hospital, facilitate early discharge and improve the patient experience.
- 3 Pharmacy-led care, which provides an alternative care pathway, managing certain illnesses (eg COPD) for patients who would otherwise turn to their GP for appointments.
- 4 Polyclinics, which provide combined GP and conventional hospital care with a range of additional services including: extended urgent care and opening hours; healthy living services; community mental health services; social care; outpatient services; diagnostics; minor procedures; pharmacy services; interactive health information services and management of long-term conditions. Polyclinics may also include other healthcare professionals (HCPs) such as opticians and dentists. The aim is to provide a one-stop-shop for healthcare in community-based centres.

Overall, the evidence base for safety, clinical- and cost-effectiveness in transferring secondary care into the community is thin, but conversely there is no evidence base to suggest that specialist care is better delivered in hospital. There is currently no nationally agreed best practice guidance for CCH. Audit of national and local pilots has demonstrated some success, but much evidence is anecdotal. Paradoxically, at the same time as care is being transferred into the community, admissions to hospitals continue to rise.

We aimed to identify evidence of good practice in the delivery of four well-defined models of CCH and to provide guidance for its effective implementation. The chosen four models of care were identified in our initial scoping of the CCH literature:

- 1 *Practitioners with special interests* (PwSIs – GPwSIs and NwSIs). PwSIs are healthcare practitioners (eg consultants, GPs or nurses) who provide specialist services in a particular area of expertise (eg diabetes or COPD) in addition to their core professional role. They work mainly in community settings.
- 2 *Specialist outreach clinics*. Services provided in these clinics are by hospital specialists who travel out to community settings to see their patients. The aim of these outreach clinics is to make access to specialist care more convenient for patients.
- 3 *Telemedicine*. Telemedicine or telehealth is the use of information technologies to provide healthcare services and information at a distance.
- 4 *Intermediate care*. Examples of this are ‘Hospital at home’, ‘Early discharge’ and ‘Admission avoidance’ schemes, and nurse-led care in community hospitals. These schemes were developed to help avoid unnecessary admission to conventional hospital care as well as facilitate early discharge and improve the patient experience.

In addition, care for 15 common index diseases/conditions providing CCH were identified through the scoping review:

- 1 dermatology
- 2 rheumatology
- 3 orthopaedics
- 4 chronic obstructive pulmonary disease (COPD)
- 5 heart failure
- 6 stroke
- 7 anticoagulation
- 8 hypertension
- 9 diabetes
- 10 elderly care
- 11 mental health
- 12 asthma
- 13 inflammatory bowel disease
- 14 gastrointestinal disease
- 15 cholesterol management

2 Objectives

Phase 1: To undertake a comprehensive review of current UK literature to identify evidence of effectiveness and good practice in the delivery of CCH and to provide guidance for its effective implementation.

Phase 2: To develop and disseminate online surveys to HCPs who were providing CCH; to explore HCPs' perceptions about having care shifted and provided closer to home; to identify any barriers in implementation and means of overcoming those barriers; to explore HCPs' views on how to successfully implement CCH schemes.

The project was guided by a multi-professional steering group and we addressed the following questions:

- What is the evidence of CCH clinical effectiveness versus conventional (standard) hospital care?
- What is the evidence of CCH safety versus conventional (standard) hospital care?
- What is the evidence of CCH cost-effectiveness versus conventional (standard) hospital care?
- What are the patients'/families'/carers' perceptions of CCH versus conventional (standard) care?
- What are the main stakeholders' perceptions of CCH versus conventional (standard) hospital care?

3 Methods

Literature review

Studies were sought that addressed the research questions listed in section 2 above, and these were developed using the PICO (Population, Intervention, Comparison and Outcome) method (Appendix 1). The inclusion criteria for the studies were based on:

- studies carried out in the UK
- adults over 18 years of age
- studies carried out between 2000 and 2009.

Any research that was conducted before but published after the year 2000 was excluded.

Data sources and search strategy

The electronic databases searched, from year 2000 onwards, include MEDLINE, HMIC Health Management Information Consortium, EMBASE, CINAHL and Cochrane Library (CDSR, DARE and NHS Economic Evaluation Database).

Search terms included key words relating to care settings (primary healthcare, community care etc) combined with people delivering the care (general practitioner, practitioners with special interest, consultants, nurses etc), models of care (GPwSI, nurse-led care, specialist outreach, telemedicine, intermediate care) and outcomes relating to safety, clinical- and cost-effectiveness, patient outcomes and healthcare professionals' perceptions (Appendix 2). Only English language articles were included.

Study selection

To be eligible for inclusion, studies needed to:

- (1) relate to one of our four chosen models of care: PwSIs, specialist outreach clinics, telemedicine or intermediate care
- (2) relate to one of the project's 15 identified areas of diseases/conditions: dermatology, rheumatology, orthopaedics, COPD, heart failure, stroke, anticoagulation, hypertension, diabetes, elderly care, psychiatry, asthma, inflammatory bowel disease, gastrointestinal disease and/or cholesterol management
- (3) contain usable information about at least one outcome stated in our PICO questions relating to clinical- and cost-effectiveness, safety, patient outcomes and/or main stakeholders' perceptions.

All types of study design were eligible for inclusion. Where more than one publication was found relating to a single study, data from those publications were extracted together. Where a systematic review was

found, data from publications included within the review were not extracted individually and nor were the studies conducted from earlier than year 2000 in the review included.

Data extraction and assessment of validity

For each type of study, its quality was assessed and data extracted by one reviewer. A second reviewer double-checked and any disagreements were resolved by discussion with members of the project steering group. Data were extracted and presented in structured evidence tables as a narrative summary.

Online surveys

Surveys were designed for healthcare professionals (HCPs) who were or had been providing CCH. Questions in the surveys were developed based on the findings from the literature review. Four areas of specialist care appeared to dominate the literature: geriatrics, COPD, diabetes and dermatology. We therefore decided to focus the online surveys on HCPs who provided either one or more of these four specialist types of care closer to people's homes.

The online surveys were disseminated electronically to members of the Royal College of Physicians, Royal College of General Practitioners and Royal College of Nursing and the deadline for completion of the surveys was two weeks.

4 Results

Literature review

In total, 2,141 titles and abstracts were screened for relevance and full copies of 189 references were retrieved and assessed for eligibility. A total of 23 studies were included in the literature review:

- three systematic reviews and meta-analysis of randomised controlled trials
- seven randomised controlled trials
- one economic evaluation
- three mixed-method studies using both quantitative and qualitative methods
- two qualitative studies
- one case-mix study
- one case-control study using self-administered questionnaires
- one cohort study
- one evaluation of case studies
- three questionnaire studies.

Overall, the results which follow are based on:

- GPwSIs: three studies
- specialist outreach clinics: one study
- telemedicine: eight studies
- intermediate care: 11 studies (including four Cochrane reviews).

Practitioners with special interests

For PwSIs, a small number of publications were identified from 2000 onwards that met our inclusion criteria. Three publications on PwSIs were included in this review and illustrated a range of different service models including: orthopaedics; dermatology; ear, nose and throat medicine; general surgery; gynaecology and urology.

Clinical effectiveness

Only one study investigated the effectiveness of a PwSI service compared with a hospital clinic.¹ Salisbury *et al* (2005)¹ compared the outcomes of a PwSI service for skin problems compared with a hospital dermatology clinic and found no noticeable difference between the two groups ($p=0.88$). Another study compared the clinical effectiveness of treatment of patients with minor orthopaedic problems in practice-based clinics and in hospital-based clinics by the same PwSI.² Again, no significant differences between the two clinics were found in their clinical outcomes.

Cost effectiveness

The findings for cost effectiveness of PwSI services were mixed. Coast *et al* (2005) reported that costs to the NHS for patients attending a PwSI service in dermatology were much greater than conventional hospital outpatient care (£208 vs £118, almost 75% higher).³ However, Sibbald *et al* (2008) found cost savings of up to 52% to commissioners from economic case studies conducted at six demonstration sites in England.⁴ Highest savings in cost were found in dermatology services in the community, followed by urology (46%), orthopaedics (42%), general surgery (20%) and gynaecology (14%). Costs to patients and companions attending either the community or usual hospital outpatient care were also calculated in the Coast (2005) study, but the differences in costs were minimal (£48 vs £51, respectively).³

Patient outcomes

Three studies measured patient outcomes using either qualitative methods or a mixture of qualitative and quantitative methods.^{2,1,4} Waiting times, technical quality of care, overall satisfaction and access improved significantly ($p \leq 0.001$) for new services provided in the community compared to hospital services.⁴ Increased satisfaction with access to appointment ($p=0.623$) and information received ($p=0.031$) as well as reduced waiting times ($p=0.001$) were also seen in patients attending practice-based clinics with minor orthopaedic problems.² Similar positive results were demonstrated in the study by Salisbury (2005)¹ in which patients reported that the GPwSI clinic for dermatology care was more accessible ($p < 0.001$), with waiting times reduced by a mean of 40 days. At the end of the study, 61% of patients preferred the GPwSI care compared to standard hospital dermatology care.¹

Practitioner outcomes

No studies were found on the perceptions of PwSIs.

Specialist outreach clinics

Clinical effectiveness

Only one study was identified that had investigated specialist outreach clinics.⁵ This study reported that the benefits of the health status of patients attending the specialist outreach clinics compared with conventional outpatients' clinics at 6 months follow-up were relatively small. The statistical mean difference in change (p-value) for health perception, mental health, physical function, pain, social function and energy were $p=0.003$, $p=0.61$, $p=0.49$, $p=0.03$, $p=0.99$ and $p=0.39$, respectively.

Cost effectiveness

The findings reported by Bowling *et al* (2000, 2001) showed that the mean total NHS costs per patient were higher in the outreach clinic than for patients attending usual outpatients clinic (£149.59 vs £106.79; $p < 0.007$). From the patient's perspective, it was less costly for the patient to attend an outreach clinic than an outpatients clinic (£3.96 vs £8.40, $p < 0.001$, respectively). This was largely due to shorter distances with cheaper travel for patients attending the outreach clinic.

Patient outcomes

Levels of satisfaction among patients in the outreach clinics were significantly higher than those of patients in the outpatients' clinics. This was related to the convenience of the location, waiting area in the clinic, as well as length of the wait at the clinic ($p < 0.001$).

Practitioner outcomes

GPs and outreach specialists had positive views about the outreach clinic and felt it was worthwhile. Forty-two per cent of the specialists held education/training sessions with the GPs and more than half of these GPs felt that they had broadened their skills as a result of the outreach clinic.⁵

Telemedicine

Clinical effectiveness

Three studies reported on the clinical effectiveness of telemedicine (two in relation to dermatology;^{6,7} one in relation to minor injuries).⁸ Outcome measures were different for each study but one consistent finding was that telemedicine is unlikely to be completely safe or effective in diagnosing and managing certain types of conditions, especially in dermatology. Discrepancies and important over- and under-treatments were found in patients with minor injuries receiving telemedicine treatment plans.⁶ Another study showed that a store-and-forward type telemedicine system had limited diagnostic accuracy for skin lesions, with only 48% of teledermatology cases being consistent with conventional face-to-face consultations.⁷ In addition, only 55% of the total teledermatology management plans were appropriate.

Cost effectiveness

Only one study (a randomised control trial (RCT)) evaluated the cost effectiveness of telemedicine.⁹⁻¹¹ This study hypothesised that the virtual outreach (joint teleconsultation) would incur no additional costs to the NHS, would instead reduce costs to patients, and reduce absences from work by patients and their carers. Findings showed that cost and time savings, as well as lower loss of productivity time to patients in the virtual outreach group, were confirmed ($p < 0.0001$). However, the main hypothesis that the virtual outreach services would be cost neutral was disproved, with consultations per patients being more costly than conventional outpatient appointments (£724 vs £625, $p = 0.03$, respectively). The index consultation was found to account for this excess cost.

Patient outcomes

Three studies measured patients' perceptions of having a teleconsultation instead of a conventional face-to-face consultation.⁹⁻¹³ The technology of this consultation was generally acceptable, with patients finding it more convenient than outpatient care.^{12,13} However, despite the level of satisfaction and acceptability of telemedicine, patients would still have preferred to have a conventional face-to-face consultation.^{12,13}

Practitioner outcomes

Only one telemedicine study, using qualitative and quantitative methods, examined the views of healthcare professionals.^{14,15} The study was carried out in the remote and rural areas of Scotland. It was found that the use of computers and telemedicine was generally more acceptable among GPs than nurses. However, they would have preferred to use the equipment for videoconferencing to aid education rather than for clinical consultations. Interviews with GPs and nurses about the adoption of telemedicine revealed concerns about the quality of videoconferencing.¹⁵ Other important barriers reported in surveys include 'lack of suitable training' (55%), 'high cost of buying telemedicine equipment' (54%), and 'increase in workload' (43%).

Intermediate care

Clinical effectiveness

An RCT by Sridhar in 2008 investigated the effectiveness of a nurse-led intermediate care programme for 116 patients who had been hospitalised with an acute exacerbation of COPD.¹⁶ The programme involved providing patients with an intermediate care package containing pulmonary rehabilitation information, self-management education and a written COPD action plan with regular nurse contact. Outcomes suggest that patients managed by this type of intermediate care service were less likely to have unscheduled appointments with their GPs than patients admitted to conventional care (1.79 fewer unscheduled visits per intermediate care patient). A reduction in deaths due to COPD was also found but no difference in hospital readmission rates or exacerbation rates of COPD was found between the intermediate care and the hospital group.

Two studies compared post-acute care outcomes for elderly patients in community hospitals and general hospitals.^{17,18} One, a multicentre RCT, aimed to compare the effects of community hospital care on independence for older people needing rehabilitation with that of general hospital care.¹⁸ This large study involved seven community hospitals and five general hospitals in the Midlands and north of England, and had 490 participating patients who needed rehabilitation after hospital admission with an acute illness. The other, a prospective cohort study, aimed to compare elderly patient-based outcomes at 6 months following emergency admission to a district general hospital or community hospital.¹⁷ Round *et al* (2004) reported that the mortality rate was similar in both groups of patients.¹⁷ In the multicentre RCT (n=490) by Young and O'Reilly, independence at 6 months was greater in the community hospital group than in the general hospital group (p=0.03).^{18,19}

Cost effectiveness

Stewart *et al* (2002) and Ward *et al* (2005) reported that nurse-led intermediate care at home could be cost effective if early discharge and admission avoidance were supported.^{20,21} Savings in costs are then achieved by the reduced length of stay and bed utilisation in hospitals.

In terms of the costs per patient for health and social services resources in managing post-acute rehabilitation for older people between community hospital and general hospital, similar costs were reported (£8,946 SD £6,514 vs £8,226 SD £7,453, respectively).¹⁹

Patient outcomes

Significant difference was found in quality adjusted life year values from baseline to 6 months in community vs general hospital care (p=0.214).^{18,19} The quality of life of patients from Round's study (2004) who were either seen in a district hospital or a community hospital also showed an improvement at 6 months but only a small increase in both cohorts (p=0.97).¹⁷

Practitioner outcomes

Healthcare professionals' perceptions of intermediate care were evaluated in only one study and extremely high levels of job satisfaction were reported.²² Optimism about career development presented by intermediate care and the future growth of community-based care was also reported.

‘Hospital at home’

‘Hospital at home’ (HaH) is a specific subtype of intermediate care where healthcare professionals provide support and rehabilitation in the patient’s home for a limited period of time.

Clinical effectiveness

Four Cochrane reviews were found on HaH describing early discharge and admission avoidance services.^{23–26} Two reviews evaluated the efficacy of HaH compared to hospital inpatient care in acute exacerbations of COPD. Only four studies^{27–30} out of the 23 studies included in this review were from the UK, published from year 2000 onwards. The four UK interventions involved 475 patients, and evaluated services that provided care at home by a hospital-based outreach team (sometimes in conjunction with a primary care team), following an early discharge from hospital^{27,30} or a medical admissions unit (A&E).^{28,29}

Another Cochrane review aimed to determine, in the context of a systematic review and meta-analysis, the effectiveness and cost of managing patients with admission avoidance HaH compared with inpatient hospital care.²⁵ In this review, three^{28,31–33} out of ten studies from the UK included patients aged 18 years and over and published after year 2000. Patients from one intervention²⁸ were discharged from hospital to home care and the other two interventions^{31–33} were referred to the HaH scheme by their primary care practitioners. Care provided at home was by either a mixture of outreach and community staff^{28,31,33} or by a general practitioner (GP) and community nursing staff.³² In total, 646 elderly patients with a medical condition (COPD and stroke) were included in the three studies and contributed data for the meta-analysis.

The final Cochrane review,²⁶ investigated the effectiveness and cost of managing patients with early discharge HaH compared with inpatient hospital care. Seven out of 26 interventions in this review were from the UK on patients aged 18 years and over and published after year 2000. Three^{27,29,30} out of the seven UK studies had already been included in the previous Cochrane review²⁴ which evaluated the efficacy of HaH compared to hospital inpatient care in COPD. We will therefore only focus on the remaining four UK studies.^{34–37} These recruited 640 patients for early discharge to HaH, either following coronary artery bypass grafting;³⁵ a total knee replacement;³⁴ recovering from a stroke;³⁷ or elderly patients with a mixture of conditions.³⁶

Patients from three studies had care provided by a hospital outreach service^{34,35,37} and patients from the remaining study had their care provided by community services.³⁶

In all, eleven UK studies from year 2000 onwards were found in the four systematic reviews from an international literature including 55 studies. There was no evidence from the UK-based studies to suggest that HaH services produced outcomes that were different from hospital inpatient care.

Cost effectiveness

The four Cochrane reviews on HaH services found insufficient evidence to suggest that HaH services are a cheaper alternative to inpatient care.^{23–26}

Patient outcomes

Patients preferred care at home to inpatient care.^{21,23–26,38–40}

Online surveys

A total 562 survey responses were received. 313 responders indicated that they did not provide specialist CCH; five provided specialist CCH in specialties not related to geriatrics, COPD, dermatology and diabetes; 244 responded that they provided specialist CCH in geriatrics (n=97), COPD (n=37), diabetes (n=33) or dermatology (n=50); and 27 indicated that they provided specialist CCH in more than one of the four specialties in question. From the 244 responses, 106 surveys had all the relevant fields completed.

With regard to healthcare profession, those who responded as providing specialist CCH were as follows:

- Geriatrics (n=97): 81 consultants, 3 community nurses, 1 intermediate care team; 1 nurse consultant; 1 nurse with special interest (NwSI), 1 practice nurse, 1 senior lecturer; 8 not specified.
- COPD (n=37): 30 consultants, 1 community matron, 2 general practitioners (GPs), 1 senior lecturer, 3 not specified.
- Diabetes (n=33): 26 consultants, 1 NwSI, 1 practice nurse, 1 GP, 4 not specified.
- Dermatology (n=50): 47 consultants, 1 practice nurse, 2 not specified.
- HCPs providing specialist care in more than one specialty (geriatrics COPD, diabetes and/or dermatology) (n=27).

It is not possible to give a precise response rate for the online surveys because it is not known exactly how many online surveys were sent out by the Royal College of Physicians, Royal College of General Practitioners and Royal College of Nursing.

Answers to each survey question are presented and illustrated below.

1 Knowledge of what specialist services are available in local hospitals and community settings

HCPs were asked to rate their individual level of knowledge of what specialist services in their specialist area of care were available in their local and community setting.

Local hospital

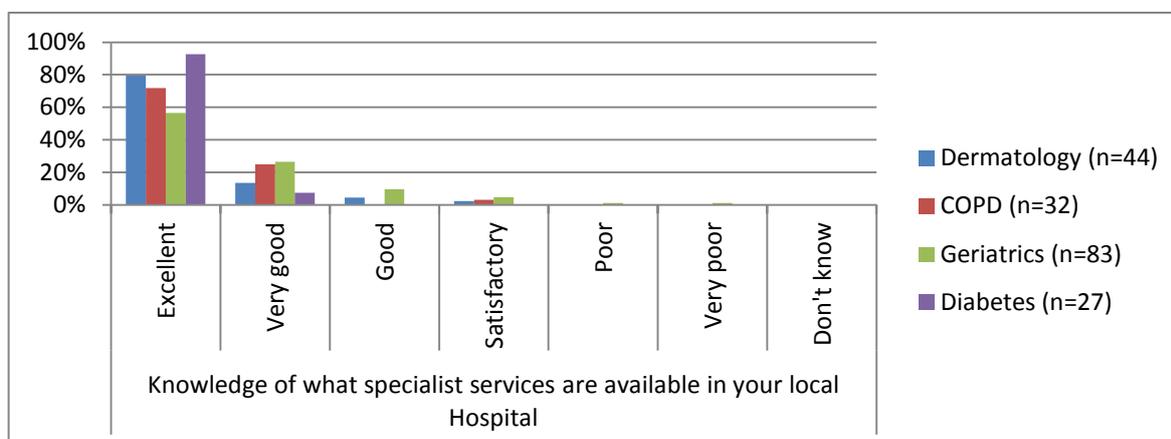


Fig 1 Knowledge of specialist services available in the local hospital.

The data suggest that the majority of HCPs are aware of and have excellent knowledge (geriatrics 56.6%; COPD 71.9%; dermatology 79.5%; diabetes 92.6%) of what specialist services are available for their patients in their local hospital. Only a limited number of nurses (n=2) had poor or very poor knowledge of what specialist services were available for the older people they cared for.

Local community setting

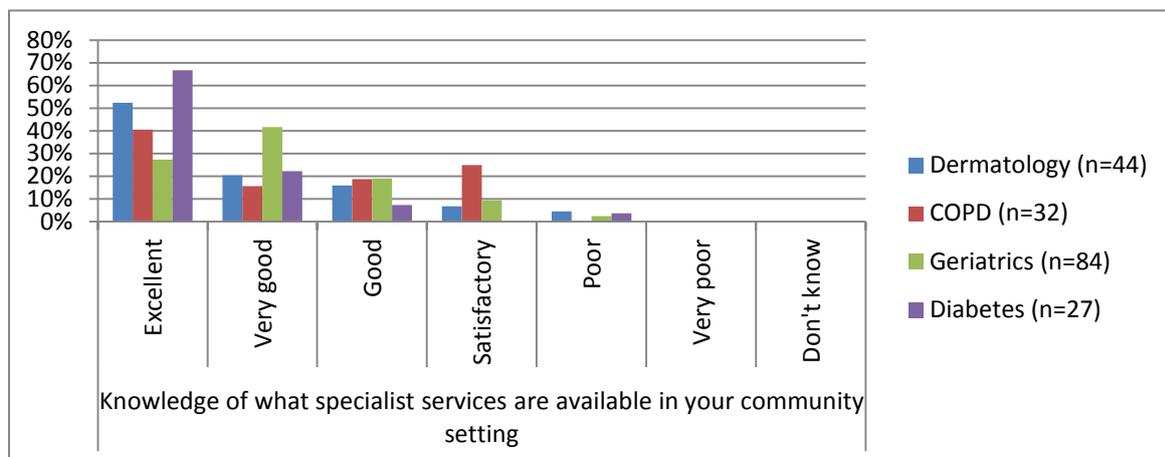


Fig 2 Knowledge of specialist services available in the local community.

The data for individual level of knowledge of what specialist services are available in local community settings are similar to that of local hospitals, with majority of HCPs rating their knowledge as satisfactory to excellent. Only a small number (n=5) of HCPs in dermatology (n=2; one consultant and one nurse), geriatrics (n=2; two consultants) and diabetes care (n=1; consultant) rated their knowledge to be poor.

The main reasons given for the excellent knowledge of what specialist services are available in local hospital and community settings are because the HCPs are involved in the running and setting up of the specialist services.

2 Quality of the specialist services available in local hospitals and local community settings

HCPs were then asked to rate the quality of the available specialist services.

Local hospital

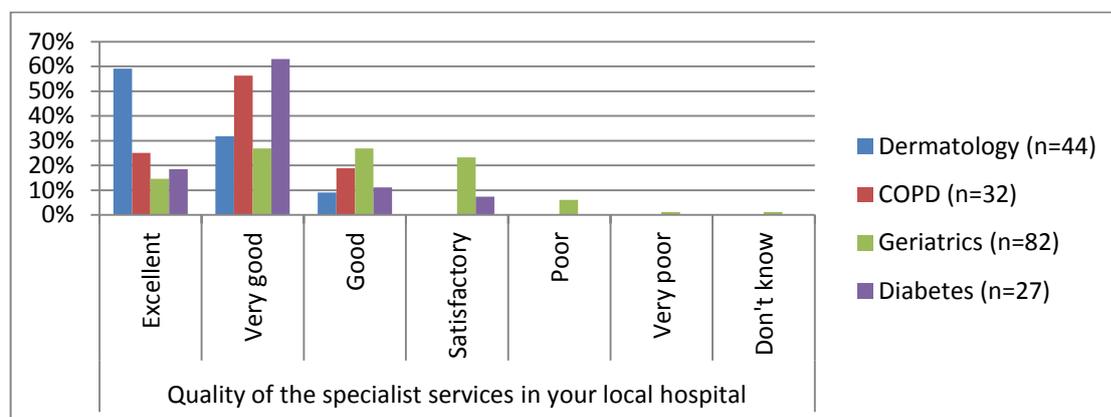


Fig 3 Quality of specialist services available in the local hospital.

Specialist geriatrics care in local hospitals was rated as between ‘satisfactory’ and ‘excellent’ by 91.4% of all geriatrics HCPs, and the remaining 8.6% of HCPs (n=7) rated the service as ‘poor’ (n=5), ‘very poor’ (n=1) and ‘do not know’ (n=1). Examples of reasons given for the poor ratings included: ‘overstretched, significant delays in discharges, wide dispersal of patients across non-specialist wards and regular moves between hospitals for non-medical reasons, understaffed, especially in therapy areas’; ‘under-resourced medical department with competing interest from medical take, poor ward planning, minimal discharge facilities’; ‘funding and staff issues’; ‘service has deteriorated due to increasing pressure on fewer beds’.

From those who provide specialist COPD care, all responses indicated that the quality of COPD services in their local hospitals was either ‘good’ (18.8%), ‘very good’ (56.3%) or ‘excellent’ (25%). Examples of comments received included: ‘would be good to add some rehab for multiple pathology patients and early rehab within hospitals; all rehab are currently in the community’; ‘the specialist services are good but the hospital does not organise itself to ensure that patients are appropriately triaged to specialist teams’; ‘seamless co-operation between primary and secondary care’.

The quality of specialist dermatology and diabetes services in local hospitals was positively rated, like that of COPD services. All dermatology responses indicated either ‘good’ (9.1%), ‘very good’ (31.8), or ‘excellent’ (59.1%) service. For diabetes, responses ranged from ‘satisfactory’ (7.4%), ‘good’ (11.1%), ‘very good’ (63%) to ‘excellent’ (18.5%). Reasons and comments given for the diabetes responses include: ‘joint working has improved consistency of care’; ‘good feedback from patients and audit programme’; and ‘multidisciplinary working’. Some of the less positive comments included: ‘inadequate commissioned capacity’; ‘some under-resourcing’ and ‘poor acute care’.

Comments provided from HCPs in dermatology include: ‘excellent colleagues’; ‘personal involvement’; ‘long established service’; ‘have good access to both general and specialised clinics and surgery’; ‘comprehensive service with subspecialties’. Negative comments included: ‘need to develop more single discipline clinics’; ‘poor buildings and infrastructure’; ‘limited facilities’.

Local community setting

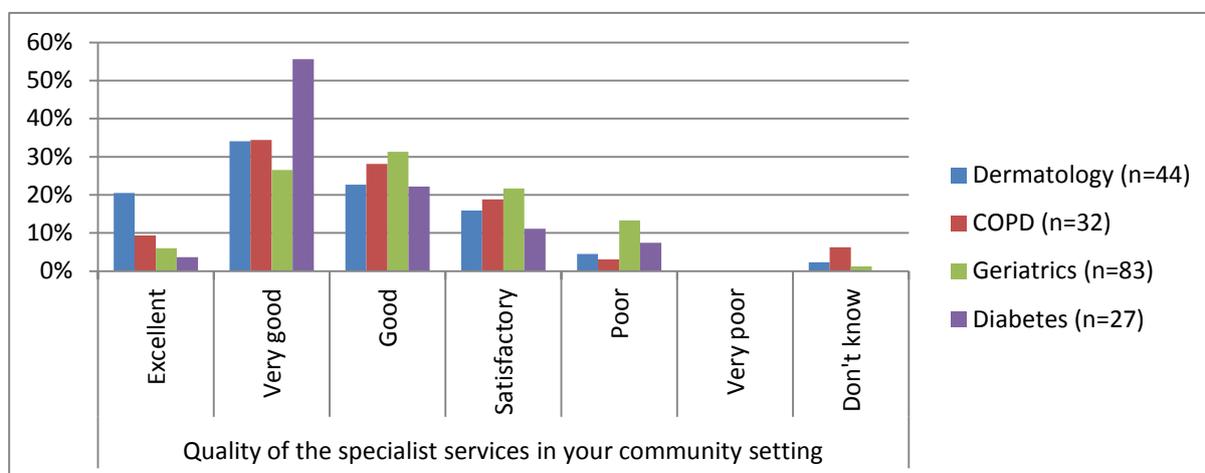


Fig 4 Quality of specialist services available in the local community.

The majority of HCPs from the four specialties (geriatrics, COPD, dermatology and diabetes) rated the quality of specialist care in local community settings as ‘satisfactory’ and ‘very good’ and a small number of HCPs rated the service as ‘excellent’ quality (geriatrics n=5; COPD n=3; dermatology n=9; diabetes n=1).

However, as shown on the graph, several HCPs also believed that the specialist service in community settings was ‘poor’ (geriatrics n=11; COPD n=1; dermatology n=2; diabetes n=2) and some were not even aware of how good the specialist services are in terms of quality (n=4). Comments received for the poor ratings include: ‘changes in management/personnel are very frequent, no formal audit, and links with secondary care are patchy and non-standardised’ (diabetes); ‘no nurse input and some under-resourcing’ (diabetes); ‘limited specialist service’ (dermatology).

Geriatrics had the highest number of ‘poor’ ratings (n=11) and examples of reasons given are: ‘continuing difficulty in patient discharges’; ‘needs much more expansion’; ‘patchy provision due to funding shortages’. Other comments include ‘under-staffed’, ‘unrealistic top-down targets’, as well as ‘lack of senior clinical leadership’ and lack of communication and liaison between services.

3 Ease of access (distance) to specialist community services

The ease of access for patients, in terms of distance between home and specialist community services, was also measured. Overall, the ease of access ratings were promising, with the majority of HCPs in the four specialties rating the ease of access to their specialist services as ‘good’ to ‘excellent’ (geriatrics 65.1%; COPD 71.4%; dermatology 69.8%; diabetes 73.1%). However, some HCPs also rated the access as ‘poor’ (geriatrics 8.8%; COPD 3.6%; dermatology 7%; diabetes 7.7%) and ‘don’t know’ (geriatrics 5%; dermatology 4.7%). The comments received varied widely, with some indicating an ‘excellent/good’ ease of access because some services/clinics were specifically set up within a 10-mile radius of patients’ homes; some clinics were held across localities and home visits were available by specialist nurses if required. For those who selected ‘poor’ access, the main reasons given were because of poor public transport and less parking availability but also because ease of access largely depended on where the patient lived.

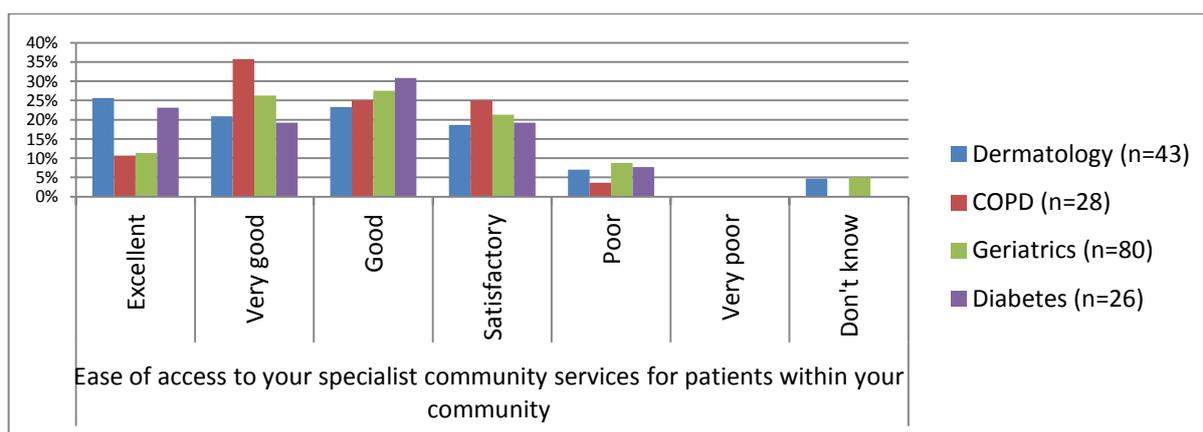


Fig 5 Distance to specialist community services.

4 Tele-consultations in community settings

The responses about tele-consultation provision clearly showed that this type of service is limited. The graph below shows that the majority (geriatrics 83.8%; COPD 66.7%; dermatology 77.5%; diabetes 60%) of HCPs do not practise telemedicine in community settings. The small number of HCPs (geriatrics n=12; COPD n=9; dermatology n=9; diabetes n=10) who do practise telemedicine do it via telephone communication; the service was rated evenly between ‘excellent’ to ‘very poor’ and ‘don’t know’. Examples of comments

received for the 'poor/very poor' practice included 'poor equipment', 'not cost-effective' and 'time-consuming'.

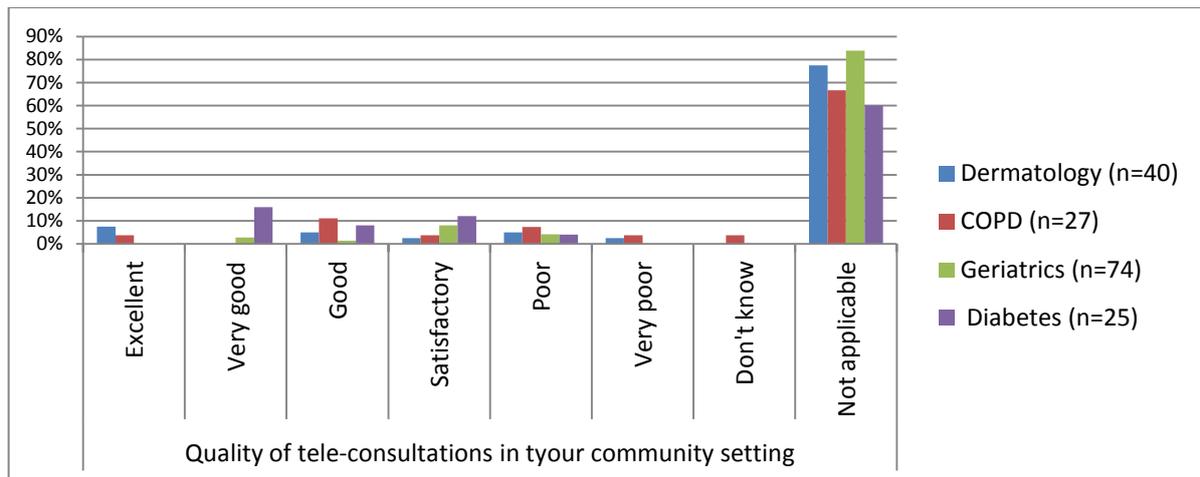


Fig 6 Quality of tele-consultation in community.

5 Support from colleagues in providing specialist services

Out of 177 who responded to the question about the level of support they received from colleagues in providing specialist services, the main response was 'very good' from all four specialties (geriatrics 30%; COPD 25%; dermatology 28.6%; diabetes 26.9%). However, there were a few HCPs who reported the support as 'poor' (geriatrics n=9; COPD n=4; dermatology n=2; diabetes n= 5), 'very poor' (geriatrics n=1; COPD n=1; dermatology n=1) or 'none received' (geriatrics n=1; dermatology n=1; diabetes n=2). These HCPs felt that there was limited input and interest from primary care practitioners to support CCH. Other examples of comments received included: 'Cultural barrier to cross-boundary working – I believe because trust sees such work as financially unproductive for trust budget, and PCT perceives consultant-led services as expensive, as well as with a potential to develop in unpredictable directions' (COPD); 'very much feel as though I work in isolation'; and 'consultant colleagues happy to give verbal support but do not want to get involved in helping to deliver community clinics themselves' (dermatology).

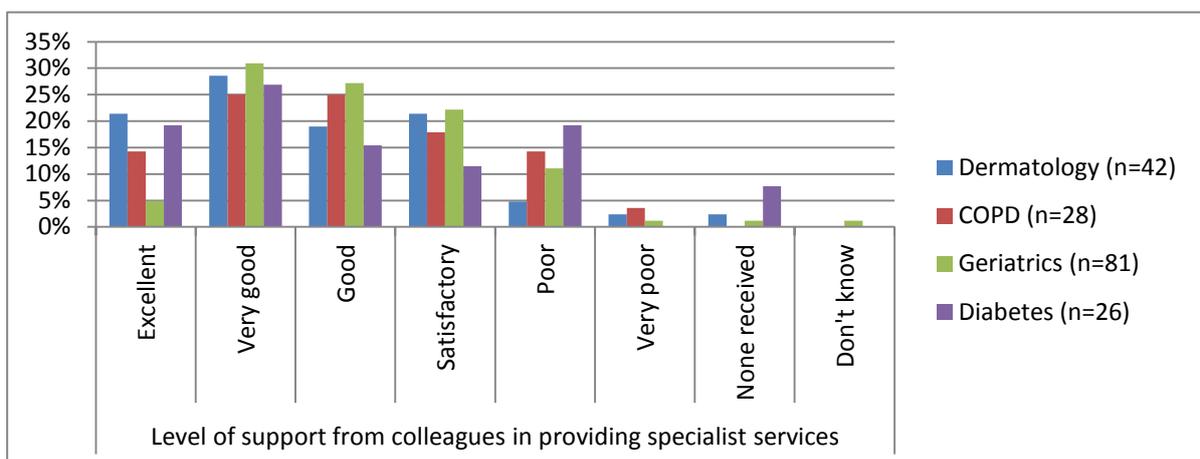


Fig 7 Support from colleagues in specialist service provision.

6 Education training in providing specialist services

The training given to HCPs to provide specialist services efficiently was rated as good, with the majority of HCPs from the four specialties indicating the training as ‘satisfactory’ to ‘excellent’. However, the graph below shows that ‘poor’, ‘very poor’ or ‘none received’ training for HCPs in providing specialist services are also present (geriatrics 6.3%; COPD 10.7%; dermatology 19.8%; diabetes 11.5%).

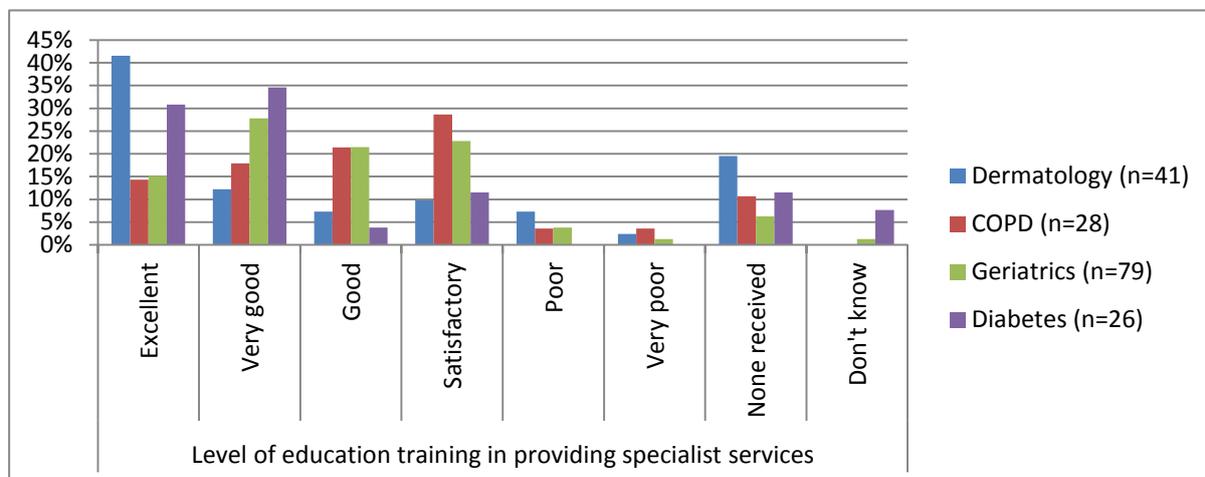


Fig 8 Education training in specialist service provision.

With regard to the quality of the education training received, the main responses received from HCPs in geriatrics and COPD were ‘good’ (33.8% and 32.1%, respectively), ‘very good’ from diabetes HCPs (34.6%) and ‘excellent’ from dermatology HCPs (36.8%).

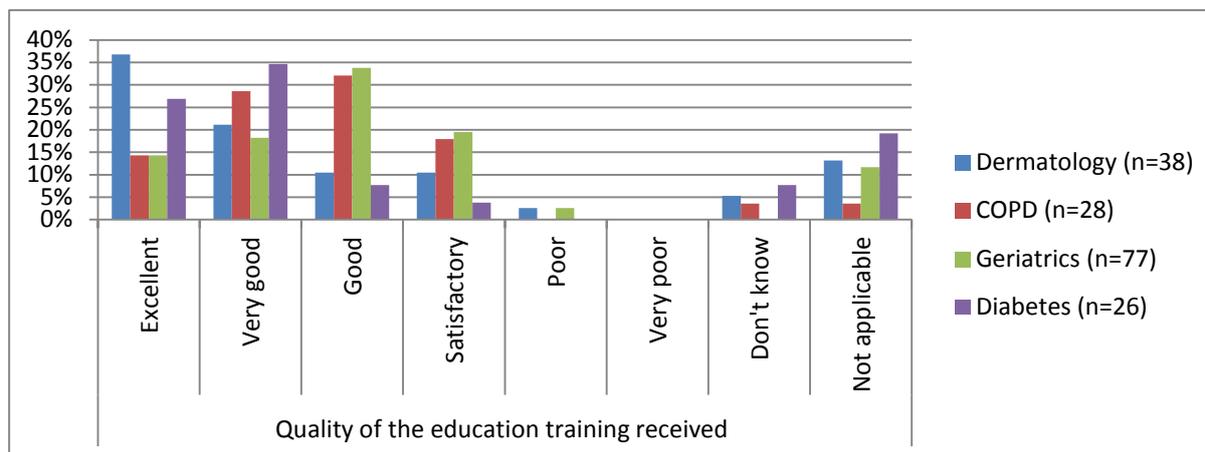


Fig 9 Quality of education training.

7 Direct access to hospital services from community settings

The survey asked what level of direct access to hospital services (eg diagnostic tests/investigations) HCPs have without needing the patient to attend an outpatient appointment with a hospital specialist before referral. Responses indicate mostly ‘good’ access for all four specialties (geriatrics 37.2%; COPD 32.1%; dermatology 29.3%; diabetes 19.2%). Some HCPs even rated the access as ‘excellent’ (geriatrics 12.8%;

COPD 21.4%; dermatology 31.7%; diabetes 23.1%) and 'very good' (geriatrics 24.4%; COPD 21.4%; dermatology 19.5%; diabetes 23.1%). Only a few HCPs in the specialties of COPD, diabetes and geriatrics rated the access as 'poor' (geriatrics 1.3%; COPD 7.1%; diabetes 7.7%) or 'none' available (geriatrics 2.6%; dermatology 4.9%; diabetes 3.8%).

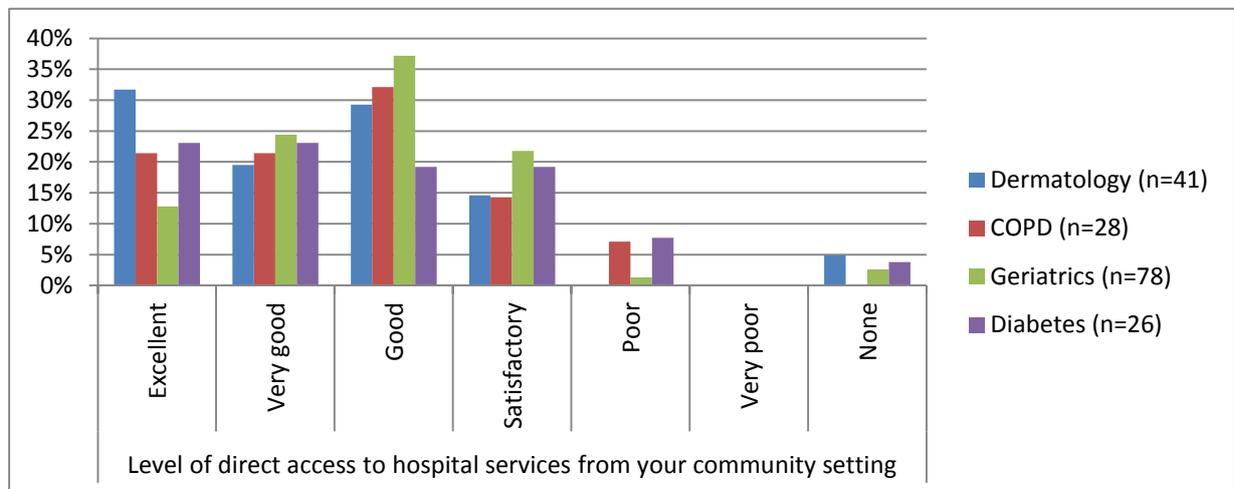


Fig 10 Direct access from community to hospital services.

8 Patient self-management education

The quality of patient self-management education was rated as generally 'good'. However, there were a few HCPs in the specialties of dermatology (7.3%), COPD (13%) and diabetes (7%) who rated the quality of patient self-management education as 'poor' and even 'very poor' for geriatrics (2.6%). In addition, a large number of HCPs (geriatrics 15.6%; COPD 3.6%; dermatology 22%; diabetes 7.7%) also indicated that there was no self-management education available for patients in their healthcare setting.

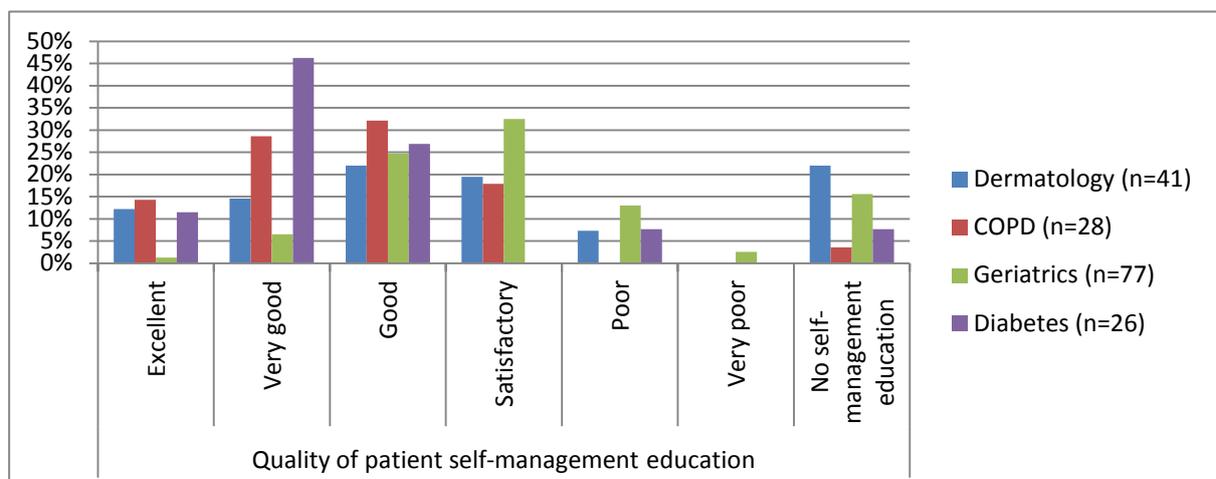


Fig 11 Quality of patient self-management education.

9 Changes since the shift of services closer to home

The survey also aimed to identify any noticeable changes to (a) HCPs' personally (b) HCPs' role and (c) HCPs' healthcare setting after having specialist services shifted closer to home.

(a) Individual changes were small, with most HCPs indicating 'no change' or 'poor' change to them personally (geriatrics 42.1%; COPD 48.1%; dermatology 69.2%; diabetes 29.2%).

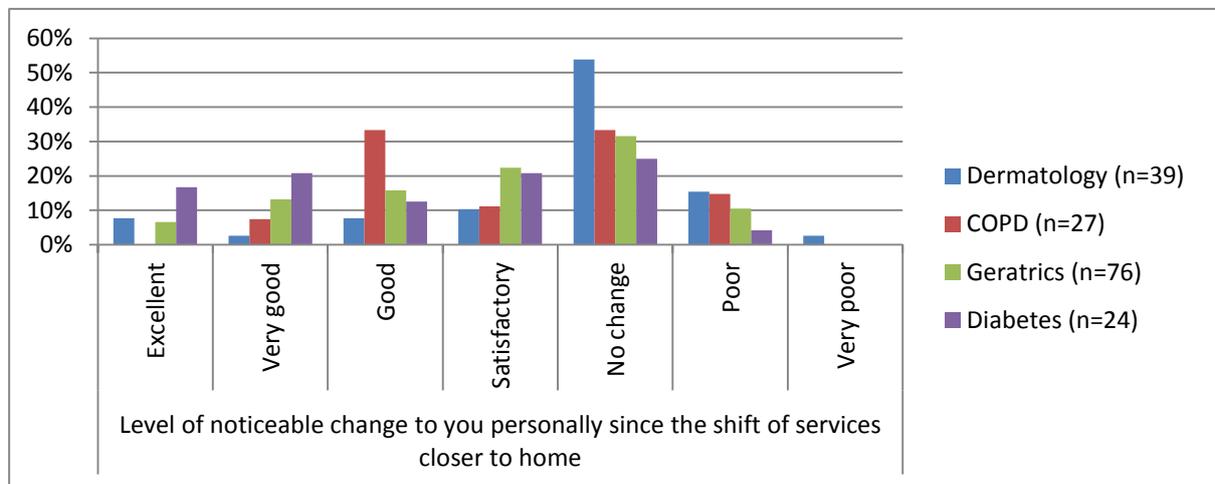


Fig 12 Noticeable change of service provision since shift to closer to home.

(b) Changes to roles were reported to be generally small and poor across the four specialties (geriatrics 36.9%; COPD 33.3%; dermatology 71%; diabetes 26.1%). However, more than half of the responses from COPD HCPs (55.5%) indicated 'good' to 'excellent' changes to their roles. This was due to increased opportunities being given to them when new services were introduced.

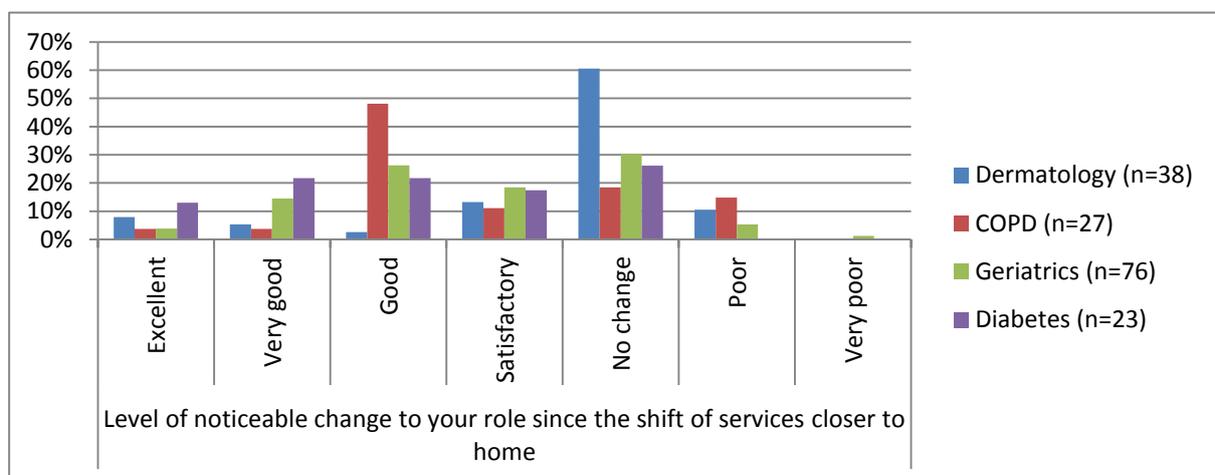


Fig 13 Noticeable change to role since shift to services closer to home.

(c) Changes to healthcare settings again were small, where the majority of HCPs rated no noticeable changes (geriatrics 31.1%, COPD 44%; dermatology 50%; diabetes 34.8%).

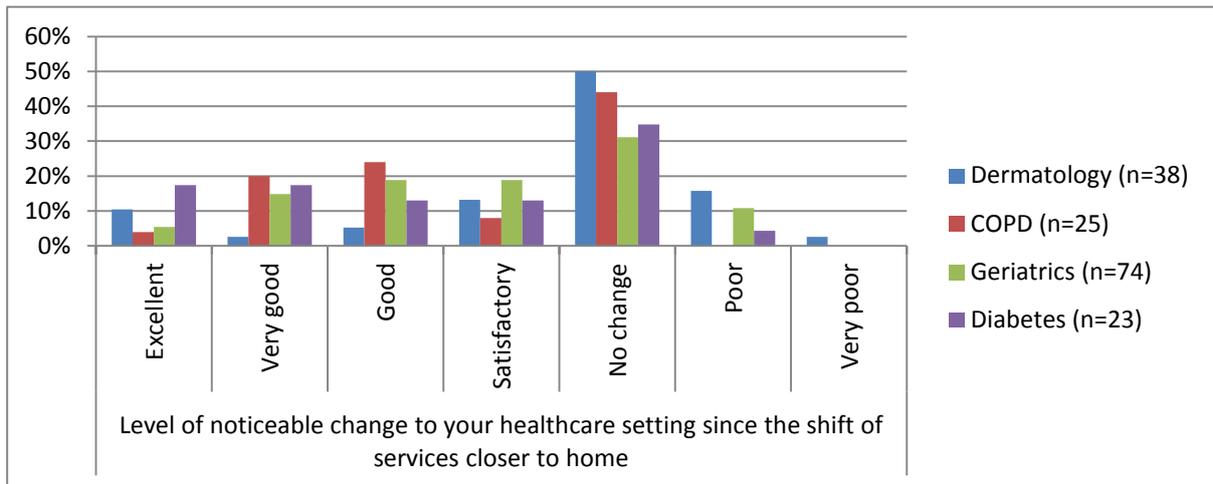


Fig 14 Noticeable change to healthcare setting since shift of services.

10 Improvements in services after the introduction of 'Care closer to home'

HCPs were asked to rate the level of improvement after shifting care closer to home in terms of (a) their own satisfaction, (b) patient outcomes, (c) cost-effectiveness of care and (d) service delivery.

(a) Shifting specialist 'Care closer to home' appeared to improve HCPs' satisfaction to a 'satisfactory/good' level for all four specialties. However, a relatively large proportion of HCPs in all four specialties, particularly dermatologists (22.5%), reported 'poor', 'very poor' or 'don't know' level of improvement. The reasons for this included: 'increased burden', 'extra unnecessary work' and 'feels as if it's being downgraded – more isolated from peers' (dermatology).

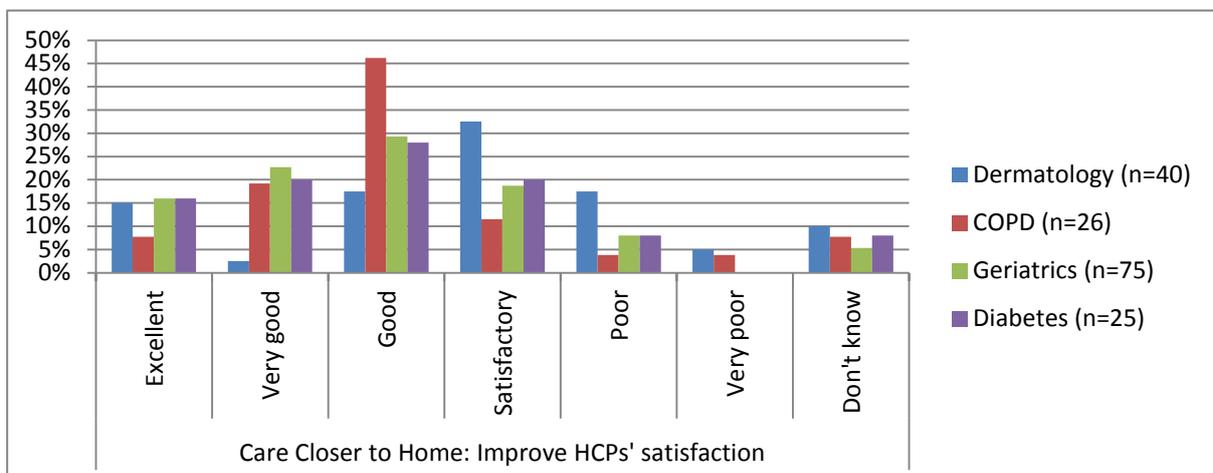


Fig 15 Improvement in service provision since care closer to home.

(b) With regard to patient outcomes, the largest proportion of HCPs across all four specialties reported that CCH improved patient outcomes to a ‘satisfactory’, ‘good’ or ‘very good’ level (geriatrics 73.4%; COPD 61.6%; dermatology 65%; diabetes 76%). However, a small proportion of HCPs also reported that CCH improved patient outcomes ‘poorly’ (geriatrics 4%; COPD 3.8%; dermatology 7.5%; diabetes 12%). One HCP from dermatology care even reported that the shift improved patient outcomes ‘very poorly’, giving the reason that GPwSI are only able to manage simple health conditions. Staffing issues, more appointments needed, as well as issues with information transfer between settings (eg notes access and communication of test results) were also reported.

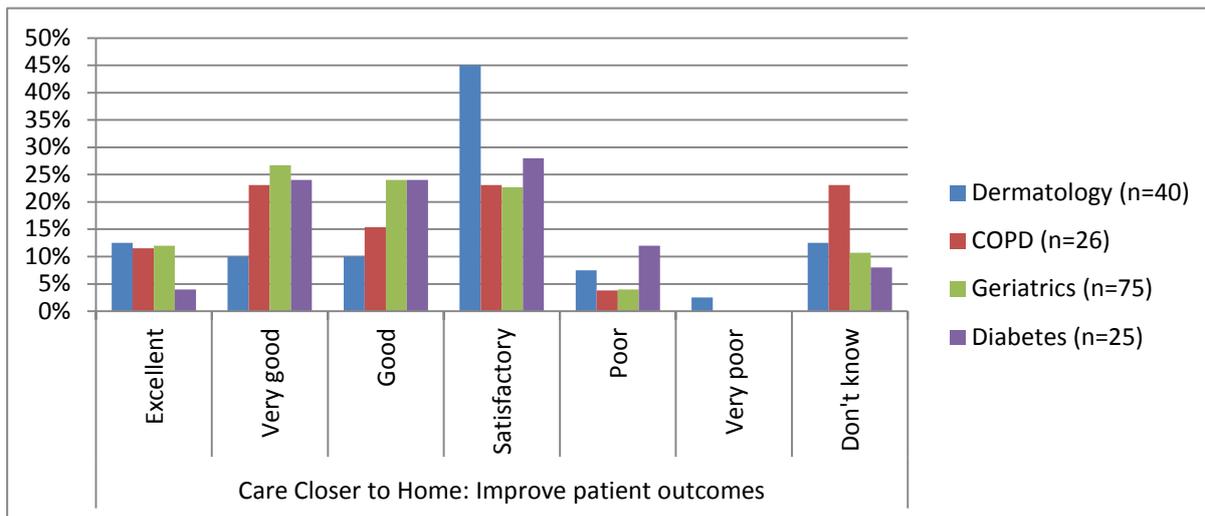


Fig 16 Improvement in patient outcomes since care closer to home.

(c) The majority of HCPs were unsure about the cost-effectiveness of CCH. The most common responses received were ‘not sure’; ‘I cannot see it being cost-effective’; ‘no information available but I doubt it is cheaper’ and ‘I suspect (do not know) costs more’. The graph below shows that the majority of HCPs selected the ‘poor’ (geriatrics 5.4%; COPD 15.4%; dermatology 33.3%; diabetes 24%) and ‘don’t know’ (geriatrics 29.7%; COPD 23.1%; dermatology 23.1%; diabetes 20%) options.

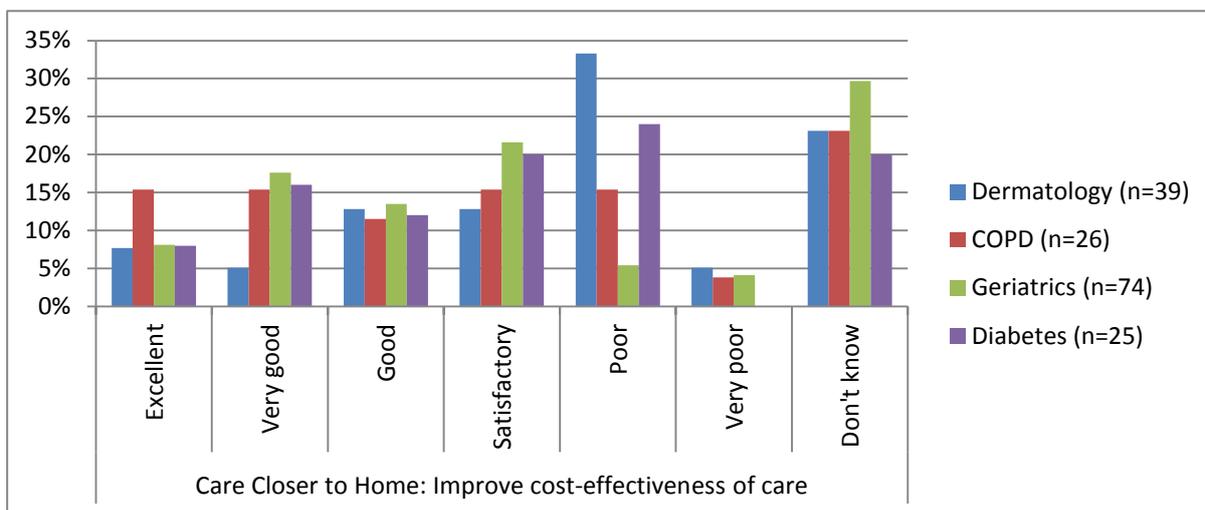


Fig 17 Improvement to cost-effectiveness of care.

(d) Service delivery was rated as having improved (between ‘satisfactory’ and ‘excellent’) by more than half of the HCPs (geriatrics 79.8%; COPD 80.7%; dermatology 61.5%; diabetes 76%) who responded. The main reasons given were: high patient satisfaction; convenient location; shorter waiting times and better use of right person at first visits as well as ‘it can provide a one-stop shop whereas this is no longer possible at the hospital’. However, although the main responses were positive, there were still a few HCPs who thought less (‘poor/very poor’) of the delivery of CCH services. The main reasons given were: ‘increased workload’; ‘only improve convenience not quality’; ‘less efficient - no improvement to care’ and ‘suits some patients but not all’ as well as ‘difficult to measure in short term’.

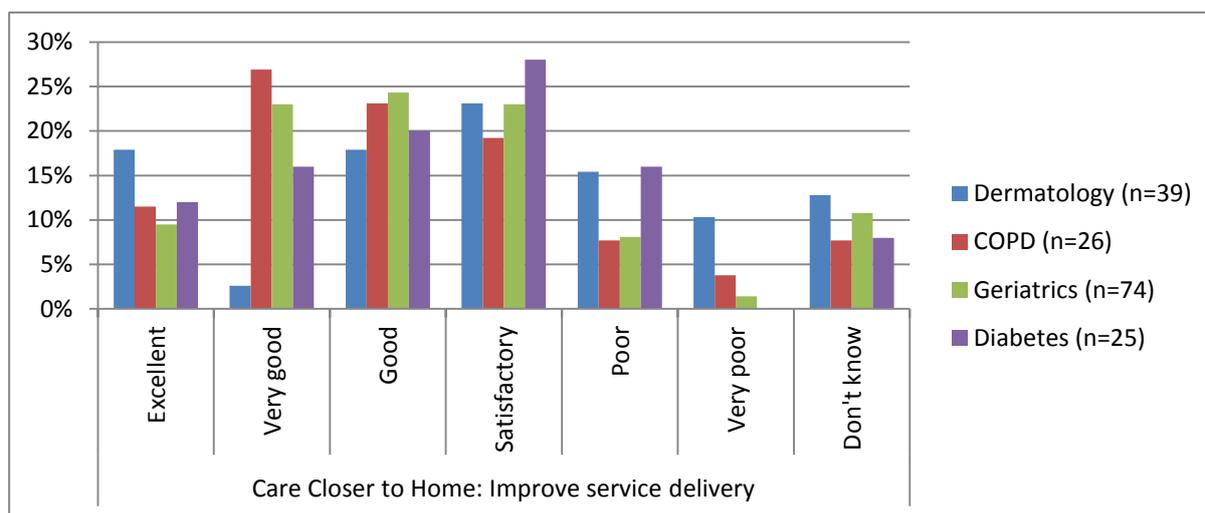


Fig 18 Improvement to service delivery.

11 Best thing about ‘Care closer to home’

When HCPs were asked what the best thing was about CCH schemes, the responses received across the four specialties were similar. From the patients’ perspectives, HCPs believed that CCH: increases patient satisfaction by providing easier, faster and more local access to specialist care; reduces stress and transport costs for patients; allows patients to focus more on their clinical consultation rather than the journey and travel time; and the surroundings/environment in community sites are believed to be preferred to hospital sites by the patients.

From the HCPs’ perspectives, they found CCH schemes allowed: effective and efficient multidisciplinary team working; seamless cooperation between primary and secondary care; less working pressure; less duplication and better communication between HCPs; and the possibility of preventing unnecessary hospital admission.

12 Worst thing about ‘Care closer to home’

Although positive comments were received about CCH schemes, issues and disadvantages of this change were also reported. HCPs across all four specialties again highlighted common issues with shifting ‘care closer to home’. These included: lack of infrastructure; poor coordination; limited facilities; lack of support, time and resources to provide the specialist services; increased workload; lack of understanding by

commissioners; and additional time needed for HCPs to travel to a distant site. Some HCPs also reported the lack of multidisciplinary team working and that they often felt they were working in isolation in a variety of healthcare settings. A concern about the lack of appropriate clinical expertise was also raised.

13 Main barriers when implementing 'Care closer to home'

The main barriers identified across the four specialties were: reluctance to change (mainly from hospital colleagues); lack of funding; lack of time and manpower, particularly from consultants and specialist nurses; lack of IT access to hospital systems; lack of joint planning and commissioning; and lack of management.

Finance appeared to be the greatest barrier, followed by management, staffing and time. One of the responses about finance was: 'Finances dictate rather than patient care; too much reorganisation is occurring resulting in insufficient time for the directors to understand and get to grips with the service they are meant to manage and for us as clinicians; even when there are engagement decisions about service development, they get ignored due to affordability'.

14 Healthcare professionals' views on how to improve 'Care closer to home' services

The way to improve CCH, according to the HCPs who responded, was by addressing the worst things about CCH schemes and the main barriers for implementation. These were mainly: stabilising commissioning; more support and input from specialist consultants and nurses; investment in rooms, IT and surgical equipment; introduction of out-of hours service; better public transport links to specialist clinics; increased manpower and training for primary care staff; promotion and support for integrated care; and lastly better planning and structure of care.

5 Conclusion

Literature review

In the literature review, 23 studies investigated four CCH service types (PrwSI, specialist outreach clinics, telemedicine and intermediate care) compared to conventional (standard) hospital care.

For **practitioners with a special interest**, on the basis of limited evidence we were unable to draw any conclusions in terms of the *clinical- and cost-effectiveness* of GPwSI(s) care compared to standard outpatient care. Only two studies investigated the clinical effectiveness of GPwSI services but found no difference when compared to standard outpatient care.^{1,2} The cost effectiveness of the service was also inconclusive, with one study reporting cost savings in GPwSI service,⁴ but another reporting the service being more costly than standard outpatient care.³ This suggests that although the clinical effectiveness of GPwSI services may be the same as standard outpatient care, it may not to be as cost effective. It is, however, very likely that costs are context-dependent, as factors such as the location of clinic, type of specialty provided, service provider (eg GPwSI or hospital consultant) and the overall demand for care are likely to influence the costs needed to provide the specialist services.

The overall *patient satisfaction* levels were, however, high for GPwSI services. This was largely due to improved access and shorter waiting times for GPwSI compared to outpatient services.

With regard to **specialist outreach clinics**, only one study met the inclusion criteria for the literature review from year 2000 onwards.^{5,41} Although we were not able to find any additional and relevant studies on specialist outreach clinics, there were several systematic reviews and Cochrane reviews on studies published before year 2000.^{42,43} However, despite the limited evidence from year 2000 onwards, findings from a large case-control study, comparing 38 outreach clinics with 38 matched outpatient clinics inside London and in England, showed similar results to those reported in previous studies, including a systematic review.⁴² The finding was that there was no difference in health outcomes between patients seen in specialist outreach clinics and those seen in outpatient clinics.^{5,41} However, as care was being provided by the same practitioners but in this case they travelled out to primary care settings to see their patients, the health outcomes were expected to be the same.

Although the findings from the included large study^{5,41} support previous research evidence,⁴² no definite conclusion could be drawn about the *clinical effectiveness* of specialist outreach clinics from year 2000 onwards due to the limited evidence available.

Patient satisfaction with outreach clinics was, however, high, mainly due to improved access and shorter waiting times.⁵ But the costs of specialist outreach clinics appeared to be substantially higher than outpatient clinics.⁵ This conclusion is further supported by previous reviews,^{42,43} suggesting that the benefit of having specialist outreach clinics is small considering that it is not cost-effective and has no additional benefits to health outcomes compared to standard outpatient clinics.

In addition, an anticipated benefit of having specialist outreach clinics was that it may encourage the interaction between specialists and GPs and provide an opportunity for GPs to broaden their knowledge and skills. However, available evidence suggests that this is not always the case.⁴³

Although the safety and clinical effectiveness of GPwSI and outreach services was inconclusive, a worrying consistent finding emerged about the safety and accuracy of diagnoses made in **telemedicine** consultations. Two out of three interventions reported inaccuracies in treatment plans^{6,7} and diagnoses,⁷ suggesting that telemedicine may not be as safe as conventional face-to-face consultations. Further research is therefore needed to determine the *safety and clinical effectiveness of telemedicine*.

The *cost effectiveness* of telemedicine is also unknown. We only managed to find one intervention that hypothesised that joint telemedicine was cost neutral compared to conventional outpatient consultations.^{9–11} But this hypothesis was rejected. Earlier research evidence on the cost effectiveness of telemedicine also indicated that the findings were inconclusive.⁴⁴ In addition, telemedicine consultations were reported as taking more than double the time of onsite consultations,⁶ suggesting that it was more time consuming as well as costly.

The acceptability of telemedicine consultations to patients was generally good, although in some cases patients would have preferred a face-to-face consultation.^{12,13} The reasons behind this were because some patients felt that they were unable to speak freely,¹² some expressed a sense of alienation, and others were experiencing problems with doctor–patient communication.¹³

Practitioners' perception of the use of technology was also mixed although they generally found it acceptable.^{6,14,15} Several barriers such as 'insufficient training', 'increase workload' and concerns about the accuracy in diagnoses using the technology were identified among the practitioners.

With regard to **intermediate care**, the nurse-led intervention where patients were provided with an intermediate care package supporting self-management education and personalised action plan appeared to *improve health outcomes* and reduce unscheduled primary care consultations.¹⁶ This supports previous research findings,^{45,46} suggesting that empowering patients with self-management can improve their individual health outcomes.

The other two interventions that compared post-acute outcomes for elderly patients in community hospitals vs general hospitals found no difference in the mortality rate from baseline to 6 months.^{17–19} However, independence at 6 months was found to be greater in patients treated in the community hospital ($p=0.003$).¹⁸ This suggests that post-acute community hospital rehabilitation care for older people is associated with greater functional independence.

A *cost-effectiveness analysis* over 6 months was also conducted within the multicentre RCT using the intention-to-treat principle.¹⁹ Findings were similar between the two groups in terms of both quality-adjusted life-year values and resource use. The community hospital care was found to be slightly more costly, with an estimated additional mean cost of £720 over 6 months of follow-up per patient, but this was not significantly different to general hospital care. This suggests that post-acute community hospital rehabilitation care for older people could be associated with both greater independence and be as cost-effective as a general hospital.

In addition to the above intermediate care interventions, we also found four Cochrane reviews of **intermediate care – 'Hospital at home'**. In terms of the *clinical effectiveness* of these interventions, some of which were in the UK, there were no differences in hospital readmission and mortality rates between patients who were discharged to 'Hospital at home' schemes and to inpatient care.^{23,25} This may be because interventions included in the meta-analysis (which included interventions published before year 2000 and trials from abroad) were small, and therefore under-powered to detect any differences. It is therefore not possible to draw any conclusion about readmission and mortality rates for 'Hospital at home' schemes. In addition, no differences were found between the two groups in terms of functional ability or quality of life but a significant reduced risk of death at 6 months follow-up was seen in patients admitted to 'Hospital at

home'.²⁵ Findings suggest that 'Hospital at home' services increase *patient satisfaction*.^{29,30,33} The limited available information on carers' perceptions on having to take on the responsibilities associated with 'Hospital at home' also seemed to be acceptable when compared with hospital care.³⁰ However, it is unknown what aspects led to higher satisfaction and preference for the care provided at home among patients and carers.

With regard to the *cost effectiveness* of 'Hospital at home' schemes, there is no evidence to suggest that such services produce any cost savings to the NHS. The findings are inconsistent in terms of resources used and costs compared to conventional hospital care.^{25,47} One of the interventions based their calculations on the financial year 1997–8,²⁹ and another did not include the costs of informal care.³³

'Hospital at home' may be seen as a substitute for hospital care and a good way to free acute hospital beds but further research is needed, particularly on its cost effectiveness and carers' perceptions of 'Hospital at home' schemes, before a definite conclusion could be drawn on its overall effectiveness (care and cost).

In conclusion, the quantity and quality of research varied widely across individual interventions. It was hard to find more than one high-quality research report in any one area of disease and model of care using similar outcome measures and thus with the potential to compare like with like. It is therefore not possible to draw any firm conclusions due to the limited research available from the year 2000 onwards on the four models of CCH services.

At present, the knowledge base from the literature review appears to suggest that any initiatives for CCH are driven more by policy than evidence. The majority of the available research seems to only assess the policy objectives to investigate whether the new initiatives for CCH have been successful. In addition, little attention has been given to exploring the overall impact on demand for care and on allied health sectors, as well as healthcare professionals' perceptions on shifting care into community and local settings.

This literature review attempted to collect evidence on the *safety, clinical and cost effectiveness* of a range of services being shifted into community settings, but the findings are inconclusive. However, from the knowledge base on the four models of care presented in the literature review, we can suggest that CCH services are likely to *improve accessibility*, and *patient acceptability* seems to be high. But it is not yet possible to draw conclusions as to whether CCH services are able to produce clinical outcomes that are as good as those produced by hospital outpatient care or whether the services are cost effective. More rigorous research is needed.

There are limitations in the methodology of the literature review because of time constraints; only one reviewer was involved in the literature search, screening process and all data extraction. A second reviewer was only brought in when there were uncertainties on whether to include an article or not.

However, despite these limitations, we are confident that this literature review is sufficiently robust to conclude that there is insufficient research to identify evidence of good practice in the delivery of CCH and to provide guidance for its effective implementation.

Online surveys

Findings from the online surveys of HCPs showed no strong variation between the four specialties and across professions with regard to perceptions on CCH.

The key findings are as follows:

- HCPs have good knowledge of what specialist services are available in their local hospital and community setting. The quality of these services is also generally very good.
- Ease of access to specialty services has improved since the introduction of CCH schemes.
- Telemedicine is not widely implemented across specialty care in community settings.
- Lack of support and training needed to provide specialty care are noteworthy.
- A notable proportion of specialty cares in community settings are not empowering patients with self-management education.
- No major changes were found to HCPs personally, their roles and healthcare setting since shifting 'Care closer to home'.
- CCH services were not found to be superior to conventional hospital care in improving patient outcomes.
- Cost effectiveness of CCH was found to be an unknown factor to HCPs.
- HCPs believed that issues such as staffing, increased funding, improved infrastructure and management as well as promotion of integrated working across HCPs, are required to successfully implement CCH schemes.

The overall narrative message received from the online surveys indicates that CCH schemes for dermatology, COPD, geriatrics and diabetes are in general positively rated and accepted by the majority of HCPs. However, it is worth noting that this positive response may represent a bias. Those who responded to the survey are very likely to be the ones who are doing well.

Appendix 1: PICOs

PICO 1 Table			
Question: What is the clinical effectiveness of 'Care closer to home' (CCH) versus conventional (standard) hospital care?			
Population	Intervention	Comparison	Outcome
<p>Adults over 18, UK population</p> <p>1 GPwSI/nurse-led care – dermatology, elderly care, COPD, heart failure, diabetes, and rheumatology.</p> <p>2 Specialist outreach clinics (OP) – diabetes, rheumatology, dermatology, congestive cardiac failure (CCF), heart failure and orthopaedics.</p> <p>3 Telemedicine – diabetes, COPD, anticoagulation, hypertension.</p> <p>4 Intermediate care – fragile elderly falls (elderly care), stroke, dementia, CCF, COPD, psychiatry.</p> <p>5 Integrated care pathways – all of the above.</p>	<p>1 GPwSI and nurse-led care</p> <p>2 Specialist outreach clinics (OP)</p> <p>3 Telemedicine</p> <p>4 Intermediate care</p> <p>5 Integrated care pathways</p> <p>6 Pharmacy-led services</p>	<p>Standard care:</p> <p>1 Dermatology</p> <p>2 Rheumatology</p> <p>3 Orthopaedics</p> <p>4 COPD</p> <p>5 Heart Failure</p> <p>6 Stroke</p> <p>7 Anticoagulation</p> <p>8 Hypertension</p> <p>9 Diabetes</p> <p>10 Elderly care (fragile elderly falls, dementia)</p> <p>11 Psychiatry</p> <p>12 Asthma</p> <p>13 Inflammatory bowel disease</p> <p>14 Gastrointestinal disease</p> <p>15 Cholesterol</p> <p>16 Alcohol</p>	<p>1 Hospital readmission rates?</p> <p>2 Days in hospital?</p> <p>3 Review appointments?</p> <p>4 Re-referral rates?</p> <p>5 Waiting times?</p> <p>6 Recovery times?</p> <p>7 Infection rates?</p> <p>8 Pain?</p> <p>9 Accuracy?</p> <p>10 PROM</p> <p>11 ADL (activities of daily living)</p> <p>12 Admission to institutional care</p>

<p>6 Pharmacy-led services – cholesterol, COPD, anticoagulation, hypertension and diabetes</p> <p>Excludes: Ante-, intra- and post-partum care Support group interventions, eg Abdominal Aortic Aneurism (AAA) Substance misuse care packages</p>			
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PICO 2 Table

Question: **What is the safety of CCH versus conventional (standard) hospital care?**

Population	Intervention	Comparison	Outcome
<p>Adults over 18 UK population</p> <p>1 GPwSI/nurse-led care – dermatology, elderly care, COPD, heart failure, diabetes, and rheumatology.</p> <p>2 Specialist outreach clinics (OP) – diabetes, rheumatology, dermatology, CCF, heart failure and orthopaedics.</p> <p>3 Telemedicine – diabetes, COPD, anticoagulation, hypertension.</p> <p>4 Intermediate care – fragile elderly falls (elderly care), stroke,</p>	<p>1 GPwSI and nurse-led care</p> <p>2 Specialist outreach clinics (OP)</p> <p>3 Telemedicine</p> <p>4 Intermediate care</p> <p>5 Integrated care pathways</p> <p>6 Pharmacy-led services</p>	<p>Standard care:</p> <p>1 Dermatology 2 Rheumatology 3 Orthopaedics 4 COPD 5 Heart Failure 6 Stroke 7 Anticoagulation 8 Hypertension 9 Diabetes 10 Elderly care (fragile elderly falls, dementia) 11 Psychiatry 12 Asthma 13 Inflammatory bowel disease 14 Gastrointestinal disease 15 Cholesterol 16 Alcohol</p>	<p>Safety:</p> <p>1 Death rates</p> <p>2 Morbidity – disability</p> <p>3 Infection rates</p> <p>4 Accuracy</p>

<p>dementia, CCF, COPD, psychiatry.</p> <p>5 Integrated care pathways – all of the above.</p> <p>6 Pharmacy-led services – cholesterol, COPD, anticoagulation, hypertension and diabetes</p> <p>Excludes: Ante-, intra- and post-partum care Support group interventions, eg AAA Substance misuse care packages</p>			
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PICO 3 Table

Question: **What is the cost- effectiveness of CCH versus conventional (standard) hospital care**

Population	Intervention	Comparison	Outcome
<p>Adults over 18, UK population</p> <p>1 GPwSI/nurse-led care – dermatology, elderly care, COPD, heart failure, diabetes, and rheumatology.</p> <p>2 Specialist outreach clinics (OP) – diabetes, rheumatology, dermatology, CCF, heart failure & orthopaedics.</p>	<p>1 GPwSI and nurse-led care</p> <p>2 Specialist outreach clinics (OP)</p> <p>3 Telemedicine</p> <p>4 Intermediate care</p> <p>5 Integrated care pathways</p> <p>6 Pharmacy-led services</p>	<p>Standard care:</p> <p>1 Dermatology</p> <p>2 Rheumatology</p> <p>3 Orthopaedics</p> <p>4 COPD</p> <p>5 Heart Failure</p> <p>6 Stroke</p> <p>7 Anticoagulation</p> <p>8 Hypertension</p> <p>9 Diabetes</p> <p>10 Elderly care (fragile elderly falls, dementia)</p> <p>11 Psychiatry</p> <p>12 Asthma</p> <p>13 Inflammatory bowel disease</p> <p>14 Gastrointestinal disease</p>	<p>Cost (define)</p> <p>1 Societal cost</p> <p>2 NHS cost</p> <p>3 Patient cost (travel)</p> <p>4 Social services</p> <p>5 ‘Other services’</p> <p>6 Efficiency</p>

<p>3 Telemedicine – diabetes, COPD, anticoagulation, hypertension.</p> <p>4 Intermediate care – fragile elderly falls (elderly care), stroke, dementia, CCF, COPD, psychiatry.</p> <p>5 Integrated care pathways - All of the above.</p> <p>6 Pharmacy-led services – cholesterol, COPD, anticoagulation, hypertension and diabetes</p> <p>Excludes: Ante-, intra- and post-partum care Support group interventions, eg AAA Substance misuse care packages</p>		<p>15 Cholesterol 16 Alcohol</p>	
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PICO 4 Table

Question: **What is the patients' (including their family/carer's) views/satisfaction/PROM of CCH versus conventional (standard) hospital care?**

Population	Intervention	Comparison	Outcome
Adults over 18, UK population – Patients who had	Patients who had attended one or more	Standard care:	1 Referral rates?

<p>attended one or more of the below clinics or received one or more of the below services:</p> <p>1 GPwSI/nurse-led care – dermatology, elderly care, COPD, heart failure, diabetes, and rheumatology.</p> <p>2 Specialist outreach clinics (OP) – diabetes, rheumatology, dermatology, CCF, heart failure and orthopaedics.</p> <p>3 Telemedicine – diabetes, COPD, anticoagulation, hypertension.</p> <p>4 Intermediate care – fragile elderly falls (elderly care), stroke, dementia, CCF, COPD, psychiatry.</p> <p>5 Integrated care pathways – all of the above.</p> <p>6 Pharmacy-led services – cholesterol, COPD, anticoagulation, hypertension and diabetes</p> <p>Excludes: Ante-, intra- and post-partum care Support group interventions, eg AAA Substance misuse care packages</p>	<p>of the below clinics or received one or more of the below services:</p> <p>1 GPwSI and nurse-led care</p> <p>2 Specialist outreach clinics (OP)</p> <p>3 Telemedicine</p> <p>4 Intermediate care</p> <p>5 Integrated care pathways</p> <p>6 Pharmacy-led services</p>	<p>1 Dermatology</p> <p>2 Rheumatology</p> <p>3 Orthopaedics</p> <p>4 COPD</p> <p>5 Heart failure</p> <p>6 Stroke</p> <p>7 Anticoagulation</p> <p>8 Hypertension</p> <p>9 Diabetes</p> <p>10 Elderly care (fragile elderly falls, dementia)</p> <p>11 Psychiatry</p> <p>12 Asthma</p> <p>13 Inflammatory bowel disease</p> <p>14 Gastrointestinal disease</p> <p>15 Cholesterol</p> <p>16 Alcohol</p>	<p>2 Waiting times?</p> <p>3 Access/ travel time/cost</p> <p>4 Pain/ symptom relief?</p> <p>5 Effectiveness in treatment/care?</p> <p>6 QoL /HRQOL (health related quality of life – biological functioning, psychological functioning and social functioning).</p> <p>7 Assurance?</p> <p>8 Helpfulness?</p> <p>9 Early discharge?</p> <p>10 Self-management confidence/knowledge of their condition/ clarity?</p> <p>11 Preference (primary/secondary care)?</p>
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PICO 5 Table

Question: What are the **multidisciplinary team's views** of CCH versus conventional (standard) hospital care?

Population	Intervention	Comparison	Outcome
<p>Adults over 18 UK population</p> <p>1 Health service managers 2 General practice registrars 3 General practitioners 4 GPs with no special clinical interests 5 PGs with special clinical interests 6 Consultants (from specialties with or without PGSCIs) 7 Specialist nurses</p> <p>Excludes: Ante-, intra- and post-partum care Support group interventions, eg AAA Substance misuse care packages</p>	<p>1 GPwSI and nurse-led care 2 Specialist outreach clinics (OP) 3 Telemedicine 4 Intermediate care 5 Integrated care pathways 6 Pharmacy-led services</p>	<p>Standard care:</p> <p>1 Dermatology 2 Rheumatology 3 Orthopaedics 4 COPD 5 Heart failure 6 Stroke 7 Anticoagulation 8 Hypertension 9 Diabetes 10 Elderly care (fragile elderly falls, dementia) 11 Psychiatry 12 Asthma 13 Inflammatory bowel disease 14 Gastrointestinal disease 15 Cholesterol 16 Alcohol</p>	<p>1 Attitude towards CCH? 2 Confidence? 3 Work load (primary and secondary care)? 4 Referrals? 5 Effectiveness in treatment/care? 6 GP education? 7 Time use? 8 Enjoy?</p>

Appendix 2: Literature search strategy

Care setting

1. primary health care/
2. primary health care.ti,ab.
3. physicians, family/
4. primary care.ti,ab.
5. general practice\$.ti,ab.
6. general practitioner\$.ti,ab.
7. primary care practitioner\$.ti,ab.
8. community.ti,ab.
9. ((social or society) adj2 care).ti,ab.
10. pharmac\$.ti,ab.

People delivering the care

11. (gp or gps).ti,ab.
12. consultant\$.ti,ab.
13. nurse\$.ti,ab.
14. gpwsi\$.ti,ab.
15. ((gp\$ or practitioner\$ or nurse\$) adj2 special adj2 interest\$).ti,ab.
16. community mental health team\$.ti,ab.
17. assertive outreach team\$.ti,ab.
18. **or/1-17**

Models of care

19. ((outreach or specialist\$ or satellite) adj clinic\$).ti,ab.
20. telemedicine.ti,ab.
21. (intermediate adj2 care).ti,ab.
22. (integrated adj2 care).ti,ab.
23. pharmacy-led.ti,ab.
24. shared care.ti,ab.
25. ((primary or gp or gps) adj3 secondary care).ti,ab.
26. (discharge adj (guideline\$ or procedure\$ or arrangement\$ or routine\$)).ti,ab.
27. ('model of care' or 'models of care').ti,ab.
28. outpatients/
29. outpatient clinics/
30. outpatient clinics, hospital/
31. outpatient\$.ti,ab.
32. **or/19-31**
33. **18 and 32**

Outcomes

34. consultation\$.ti,ab.
35. referral\$.ti,ab.
36. (recovery adj (time or times)).ti,ab.
37. waiting lists/
38. (waiting adj (time or times or list or lists)).ti,ab.
39. (infection adj (rate or rates)).ti,ab.
40. pain\$.ti,ab.
41. (activities adj3 daily adj2 living).ti,ab.
42. appointment\$.ti,ab.

- 43. patient admission/
- 44. admission\$.ti,ab.
- 45. (institutional adj2 care).ti,ab.
- 46. (death adj (rate or rates)).ti,ab.
- 47. morbidity.ti,ab.
- 48. (morbidity adj (rate or rates)).ti,ab.
- 49. disability.ti,ab.
- 50. (disability adj (rate or rates)).ti,ab.
- 51. (infection adj (rate or rates)).ti,ab.
- 52. (admission\$ adj to adj institutional care).ti,ab.
- 53. or/34-52**
- 54. 33 and 53**

Cost

- 55. economics/
- 56. exp 'costs and cost analysis'/
- 57. economic value of life/
- 58. exp economics, hospital/
- 59. exp economics, medical/
- 60. economics, nursing/
- 61. economics, pharmaceutical/
- 62. exp models, economic/
- 63. exp 'fees and charges'/
- 64. exp budgets/
- 65. (economic\$ adj2 evaluation\$).ti,ab.
- 66. (cost or costs or costed or costly or costin\$).ti,ab.
- 67. (economic\$ or pharmacoeconomic\$ or price\$ or pricing).ti,ab.
- 68. (budget\$ or (cost\$ adj2 (benefit\$ or utilit\$ or effective\$ or model\$))).ti,ab.
- 69. (value adj2 money).ti,ab.
- 70. QALY.ti,ab

- 71. or/55-70**

- 72. ((metabolic or energy or oxygen) adj2 (expenditure or cost\$)).ti,ab.

- 73. 71 not 72**
- 74. 33 or 73 (models and settings/people or econ)**
- 75. or/54-74**

- 76. exp Great Britain/
- 77. exp United Kingdom/
- 78. exp Scotland/
- 79. exp England/
- 80. exp Wales/
- 81. exp Ireland/
- 82. exp London/
- 83. or/76-82
- 84. exp Geographic locations/
- 85. 84 not 83
- 86. **75 not 85** (my search, limit to UK or no country)

- 87. limit 86 to (English language and yr=2000-current)
- 88. letter.pt.
- 89. letter/
- 90. letter\$

91. editorial.pt.
92. historical article.pt.
93. anecdote.pt.
94. commentary.pt.
95. note.pt.
96. case report/
97. exp animal/ not human/
98. nonhuman/
99. Animals, Laboratory/
- 100.experimental animal/
- 101.exp animal experiment/
- 102.exp animal model/
- 103.exp Rodentia/
- 104.exp rodents/
- 105. or/88-104**
- 106. 87 not 105**

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