Evidence for transforming community services

Rehabilitation services
Transforming community services requires partnership, determination and the courage to step outside the box. New approaches to rehabilitation are being trialled throughout the world. We identified more than 500 studies of good practice in community rehabilitation services, staff and systems that have the potential to transform the NHS.

Information in this document is drawn from a rapid evidence review. We searched 10 reference databases for systematic reviews, randomised trials and observational studies available as of January 2009. Studies were screened for relevance and validity and key themes were identified. This document provides a summary of only those interventions which are not widespread in the NHS and which have the potential to transform community services. It is not an exhaustive overview of all literature identified.
Top transformations

Ten important issues identified by the research evidence that may improve rehabilitation services in the community are:

- using rehabilitation with multiple components
- providing rehabilitation in community venues
- testing home based rehabilitation
- working in multidisciplinary teams
- encouraging self referral to services when needed
- teaching people to care for themselves
- providing extra support for carers
- working with care homes
- ensuring community ‘ownership’ of services
- using alert systems and other monitoring
Rehabilitation involves helping people recover their strength and independence during or after an illness or accident. Rehabilitation helps people relearn skills, recondition their muscles and practice activities in a supportive environment.

This rapid review provides examples of good practice that are not currently widely implemented in the NHS. A huge amount has been written about different types of physical and neurological rehabilitation following injury, operations or deterioration but this material is not presented here because it is already being applied in the NHS and has been used to inform national service frameworks and clinical guidelines. Summarising this evidence would add little to current knowledge.

Similarly, many of the examples of rehabilitation overlap with the other five priority care areas, particularly long term conditions. Therefore this material is not repeated here and it is hoped that readers will view the long term conditions review in conjunction with this one.

**What: service delivery**

**Provide rehabilitation in community venues**

There is good evidence to support providing rehabilitation as an outpatient service. For example, a systematic review of randomised trials of outpatient services including physiotherapy, occupational therapy, and multidisciplinary rehabilitation services for people recovering from stroke found that rehabilitation reduced deterioration and increased people’s ability to undertake daily activities compared to people recovering in hospital.\(^1\) There is no reason why these outpatient services could not be offered in community venues. Stroke sufferers who undertake therapy-based rehabilitation services in the community on an outpatient basis have significantly better outcomes after one year than stroke patients in hospital.
Over the past decade, community neurorehabilitation has gained popularity for people with stroke, Parkinson’s disease, brain injury and multiple sclerosis. The goal of community neurorehabilitation is to maximise functional ability and quality of life while a person is living in a home rather than in hospital. A systematic review found that important components of successful programmes included social support and involving carers, using physical therapy and occupational therapy, and ensuring good links between community services and hospital teams.\(^2\)

A randomised trial in the UK compared rehabilitation for 105 older people in a day hospital and in social services day centres with visiting therapists. The authors found that using centres in the community helped share skills and resources, but there were problems with the acceptability of facilities and attitudes of staff and regular attendees.\(^3\)

The implication is that while rehabilitation is feasible in the community and in specific community venues, it is not just a matter of transferring services to another location. Instead, rehabilitation services must be well organised, must include a multidisciplinary team and must ensure that whatever venues are used are acceptable and accessible to service users and staff.

**Multifaceted rehabilitation works best**

There are thousands of studies about the duration and style of rehabilitation that best suit people with different needs, such as stroke, COPD, brain injury, joint replacement and so on. While there is no consensus on what, where and for how long rehabilitation should be provided, there is more agreement on two issues. Firstly, it is agreed that rehabilitation should begin as soon as possible to speed recovery and that programmes which combine many different components are likely to be most effective.\(^4\)

A systematic review found that beginning rehabilitation after a year had no effect on people with stroke and numerous other reviews have found the same for other conditions.\(^5\)
When begun early, the most successful programmes combine individual care plans, physical and cognitive activities, regular practice, and proactive follow up. One successful programme for older people combined fitness training, interdisciplinary team management, patient-centred nursing care plans, early hospital discharge planning with links between community and hospital services, and regular reviews of medical care. For people with stroke, the programme created a stroke interdisciplinary team, evidence-based stroke orders and protocols, and a redesigned environment. While this is a hospital initiated programme, links with community services are essential and there is little reason why the entire programme could not be community based.

Often rehabilitation has been the domain of hospitals because this is where the programmes begins (in an effort to start rehabilitation as soon as possible), but this does not preclude moving rehabilitation services to community venues and more collaborative work between community teams and hospital rehabilitation specialists.

Cognitive rehabilitation has mixed results

Much literature focuses on physical rehabilitation but there are also studies about cognitive rehabilitation and other programmes for people with neurological impairments. One meta-analysis of 16 studies examined cognitive rehabilitation for people who suffered moderate to severe traumatic brain injury. Impairments persisted over time, suggesting that the best methods for cognitive rehabilitation remain uncertain.
Monitor vital signs and use alert systems

Part of the rehabilitation process includes learning to monitor wellbeing and seek help when needed. A range of telecare initiatives are available to help people monitor their vital signs. There are three broad types of telecare: services which focus on safety and security, for example community alerts or falls detectors; services which transmit clinical indicators for practitioners to review; and information and support provided via telephone and the internet.

A great deal has been written about using alert systems such as community alarms and fall detectors for the elderly. However, we identified no high quality studies that explicitly examined the effects of such alert systems on clinical outcomes or quality of life.

A case control study in the UK found that a home alert system for people with dementia may help people stay at home and have improved functional status. Another observational study in Scotland compared the costs of a home alert system and call centre for 170 people staying in their homes versus 170 care home places. The estimated cost saving was £1,689,970. Alert systems alone are not a form of rehabilitation but they may be an important part of a wider care package.

Telemonitoring involves using computer systems or telephone lines to transmit data about clinical indicators such as blood pressure or blood glucose. There are many different types of telemonitoring, but the most common involves automated data transfer. Data can be transmitted to community services or to hospital teams. Such telemonitoring has the potential to shift care significantly from hospital settings, by empowering service users to monitor their clinical readings at home and transmit them to professionals to check. However, findings about the benefits of automated monitoring are inconsistent.

Telephone support as part of a rehabilitation programme has been found to improve clinical outcomes or reduce symptoms in people with depression, heart disease, diabetes, asthma, and the frail elderly, amongst others. Most studies included weekly, fortnightly, or monthly telephone calls from nurses following hospital discharge. But there are divergent findings. One trial found no clinical improvements and another trial found no improvements in quality of life in people with diabetes receiving telephone support.
Use self referral to services when needed

Rehabilitation seeks to give people greater independence. Open access clinics have been trialled as a way to give people recovering from illness rapid access to care on a self referral basis. Open access or direct access clinics involve encouraging service users to visit community or outpatient services when they feel the need, rather than assigning them scheduled appointments. Usually these outpatient services are based in hospital, but they could be provided in community settings, in 'shifted outpatients' models.

A number of studies suggest that open access models could have scope to significantly reduce reliance on secondary care. For instance, a randomised trial in Wales assessed open access clinics for 180 adults with inflammatory bowel disease. Open access clinics were associated with fewer hospital day visits and outpatient visits, but some people had difficulty obtaining an urgent appointment. There were no significant differences in specific investigations undertaken, inpatient days, GP clinic or home visits, drugs prescribed, patient costs, or quality of life. The average total cost in secondary care was lower for open access patients, but when primary care and patient costs were added there were no significant differences in total NHS or societal costs. GPs and patients both preferred the open access model. The authors concluded that open access follow up of patients with chronic inflammatory bowel disease is more effective than routine booked appointments. Open access clinics use fewer acute sector resources, result in the same quality of life for patients, and are preferred by service users and GPs.29
In the UK, people with rheumatoid arthritis are traditionally seen regularly as outpatients, regardless of perceived need. During appointments people may receive rehabilitation support, medication review and a check of physical symptoms. A randomised trial compared routine outpatient review (usual care) versus no routine follow up, but access to rapid review on request (open access). There were no clinical differences between groups at two or four years. People in the self referral group had higher self efficacy and greater satisfaction and confidence than the usual care group.30

Direct access models may help people feel more in control of their care. Studies suggest that some people with cancer,31,32,33 inflammatory bowel disease,34,35,36,37,38 and rheumatoid arthritis39,40,41,42 may prefer patient-initiated follow up and that patient-initiated follow up may reduce outpatient attendances and overall costs. However, some people may prefer fixed appointment systems so they don't have to explicitly ask for help.43

This model may be difficult for the NHS to manage because the demand for services at any one time would be difficult to predict. The NHS aims to reduce waiting time and increase access to services, but open access clinics have the potential to ‘backfire’ because it may be difficult to judge the staff capacity required.

Where: location

Rehabilitation at home may improve outcomes

A number of studies have emphasised the value of providing rehabilitation and other services at home. Studies in Denmark and Sweden found that moving people out of institutional care and into the home, supported by home based rehabilitation and housing adaptations, could be less costly, improve patient satisfaction and increase independence.44

Another study found that elderly people receiving long term care at home fared better than those in hospital. Those at home had better quality of life with no evidence of greater stress upon their carers. There were increased costs for social services, but as a whole healthcare costs and costs to society were lower than the long stay hospital option. Case management and generic rehabilitation were integral to this approach.45
A randomised trial in Australia compared rehabilitation at home versus hospital outpatient rehabilitation among 229 people. Home based rehabilitation was just as effective for improving functioning. Carers of people receiving hospital based care reported higher levels of strain and those receiving hospital based care were also more likely to be readmitted to hospital. The authors suggested this might be due to increased access to admitting medical staff. Similar outcomes have been found specific to people with neurological conditions.

Not all evidence is positive, however. For instance, a randomised trial in Turkey compared stroke rehabilitation in hospital or at home. Those who received multidisciplinary care in hospital had better clinical outcomes than those who received care at home. Similarly, a trial in Australia found that while early hospital discharge plus home based rehabilitation reduced the length of stay from an average of 30 down to 15 days, this impacted negatively on the caregivers of people recovering from stroke.

The implications for the NHS are two-fold. Firstly there is evidence that rehabilitation can be successfully offered at home but further work is needed to understand whether this can be provided well by community teams. Such home based rehabilitation has implications for workforce capacity and training needs. Secondly, home based care may place strain on carers so it is essential to consider how to provide additional support for carers and regular respite care.
Some rehabilitation involves follow up and support rather than physical activities or cognitive exercises. There is evidence that multidisciplinary follow up after discharge can reduce reliance on hospital care, helping to shift care closer to home.\textsuperscript{51,52,53} For instance, two systematic reviews of multidisciplinary follow up programmes for people with heart failure included joint working by family doctors, heart specialists, nurses, pharmacists, dieticians, physical therapists, and social workers. Multidisciplinary follow up programmes reduced the use of hospital care.\textsuperscript{54,55}

The location of such multidisciplinary follow up may be important. A trial of a multidisciplinary programme for people with renal insufficiency in the US comprised consultations for primary care patients in a hospital outpatient clinic staffed by two nephrologists, a renal nurse, a renal dietician, and a social worker. There were no differences between groups in use of health services for up to five years. This suggests that specialist care based on hospital outpatients appointments may be no more effective than primary care alone.\textsuperscript{56}

NHS community mental health teams are multidisciplinary teams which include nurses, psychiatrists, psychologists, and social workers. These teams have been developed to replace some hospital based care for people with mental illness and offer a range of rehabilitative services. A Cochrane review comparing community mental health teams with conventional hospital based care found that community teams helped to reduce mortality rates, drop out rates, hospitalisations, and health service costs.\textsuperscript{57,58} A WHO review found that community mental health teams for working age adults increased user satisfaction and improved adherence to treatment, although there was no evidence of improvement in symptoms or social functioning compared to hospital based care.\textsuperscript{59} For people with mental health issues or cognitive impairment, work placements and education or employment orientated programmes can be an important part of rehabilitation but we found no strong evidence of the most effective types of initiatives.
An implication for NHS community teams is to spend more time building teams themselves. This involves not only ensuring that there are a variety of professionals involved, able to share different perspectives and skills, but also paying attention to the ways that teams work. Studies suggest that there are six factors which affect how well teams work together in healthcare: medium team size, multiprofessional composition, good organisational support and equipment, regular team meetings, clear goals and objectives, and regular audit and review.  

Self-care can support rehabilitation

Research suggests that supporting people to take responsibility for their rehabilitation and recovery is essential. Rehabilitation relies on people repeating exercises and practicing exercises in their own time, rather than only at rehabilitation appointments. There are a range of ways that health and social services can help people recover and manage their own conditions including providing written, verbal and online information; teaching people to manage their own care; and providing equipment to help people monitor and identify their symptoms.

A number of studies have examined the best ways to motivate and engage people in self care. For example, a great deal has been written about different ways to provide information to people in order to empower them to manage their own care. Merely providing information is not enough to ensure that people feel informed, ‘educated,’ and able to manage their own conditions. Information must be presented in a way that is easily accessible, inviting, and encourages people to apply it in practice.
A number of written materials to support self-management have been evaluated, including decision aids, guidebooks, and printed educational materials, although these are not all specific to rehabilitation. Systematic reviews and trials suggest that decision aids and educational materials may improve people’s knowledge, attitudes, and adherence to treatment, but used alone, they may have little effect on behaviours, health outcomes, or service use.\textsuperscript{62,63,64,65,66,67,68}

A randomised trial in the US examined providing individualised written materials during hospitalisation, one week after discharge, and one month after discharge for people with heart failure. Providing tailored messages changed people’s knowledge and beliefs, but had no effect on readmission rates.\textsuperscript{69}

On the other hand, a randomised trial of adults in Scotland compared posting four asthma education booklets personalised by computer versus conventional face-to-face education at outpatient or GP visits. The authors found that personalised booklets may reduce hospital admissions.\textsuperscript{70} Similarly, a randomised trial in Canada found that a mailed health promotion programme with individualised educational letters reduced the number of days in hospital for people with Parkinson’s disease.\textsuperscript{71}

Educational sessions to help people learn about how to undertake activities or manage their condition more effectively have gained increasing popularity in recent years.\textsuperscript{72,73} For instance, a randomised trial in six US hospitals examined self-management rehabilitation education for older women with heart disease. Days in hospital reduced by 46% and inpatient costs were 49% lower than usual care. Hospital cost savings exceeded the cost of self-management education by 5 to 1.

An implication for the NHS is that rehabilitation programmes need to explicitly focus on educating people to support themselves, rather than focusing predominantly on exercises and physical symptoms.
Supporting carers is essential

There is clear evidence that supporting carers can aid people’s recovery and rehabilitation. One systematic review found that proactively providing information to patients and carers after stroke improved knowledge and satisfaction and reduced depression. Although the best way to provide information remains unclear, there is some evidence that strategies that actively involve patients and carers and include planned follow up for clarification and reinforcement have a greater effect.\textsuperscript{74}

A UK trial recommended that carers should be built into the design of rehabilitation programmes. The study examined the effect of a hospital and home-based exercise intervention on burden, anxiety and depression in informal caregivers of people with heart failure compared to people who were not receiving rehabilitation. The authors found that the rehabilitation programme had no benefit for carers themselves and was associated with an increase in caregiver burden.\textsuperscript{75}

The best way to support carers remains uncertain, however. A UK trial of a family support organiser for people recovering from stroke and their carers found that support officers ensured people received social services care and were associated with increased patient and carer satisfaction compared to controls, particularly with information about recovery and feeling that someone had listened. However the effects were short-lived.\textsuperscript{76} While supporting carers is likely essential for transforming community services, the most effective methods need further investigation.
Ensure every service has a clear vision

Structural changes may enhance rehabilitation services in the community. Getting ‘back to basics’ and ensuring that every service has clear goals and strategy may be helpful. Specific tutorials and toolkits could help community services generate clear goals and plans.

There is evidence that vision is missing among some services. One study found that psychiatric rehabilitation units in the community tend to lack direction and purpose. Staff found it difficult to work with client groups who were often hard to engage and resistant to change. It was also difficult to meet intense multidisciplinary team working requirements.\(^77\)

Evidence-based care pathways are a tool to help provide more integrated and continuous care and to ensure that services have a shared vision. Care pathways aim to provide guidelines about how people can progress through health and social care systems, and what services and medications they should be accessing at various points along the ‘pathway.’ They also aim to help service providers work together using a ‘whole systems’ approach, often using specific guidelines.

Despite widespread use, there is little evidence about the impact of care pathways on quality of care. A randomised trial in the UK examined an integrated care pathway following stroke. The care pathway was a goal-orientated time-managed plan that aimed to facilitate interdisciplinary coordination, improve discharge planning, support rehabilitation and reduce length of hospital stay, but this care pathway had no benefits over usual care in a hospital unit.\(^78,79\)

There is inconsistent evidence about the effects of care pathways on clinical outcomes. A Cochrane review of ten studies assessed the effects of care pathways compared to standard medical care. Care pathways did not improve survival, dependency, or discharge destination over usual hospital care.\(^80\) Other studies suggest that simple care pathways can make a difference to people’s quality of life and the care they receive.\(^81,82,83,84\)

The implication is that organisations and teams may need support to implement broad strategic visions such as moving care closer to home. There is little evidence about the best way of ensuring that teams translate these broader principles into practice, but it has been identified as an area in need of further investigation particularly in the field of rehabilitation.
Local ‘ownership’ of services is beneficial

Local ownership and involvement may be fundamental to the success of community based rehabilitation programmes. It may be important for NHS and social care teams to work together to foster local involvement and buy in.

An example is Lambeth Community Care Centre which experimented with care delivering low intensity, acute medical care in primary care and offering rehabilitation at a level between that available in acute hospitals and care provided in the home. A sense of local community ownership and involvement underpinned the success of the centre. Evaluators suggested that this might significantly affect whether the model was transferable to other locations. The centre built local buy in through extensive consultation with local people, wide advertising of volunteering opportunities, holding regular community events, encouraging community groups to use the premises for other activities and recruiting staff from the local area.

Work with care homes

Partnership work between community and hospital services and between health and social care is important in providing seamless and robust rehabilitation. An area that is sometimes overlooked however, is the potential to work with care homes. One randomised trial assessed a rehabilitation service based in Social Services older people’s homes in the UK. Participants were elderly and disabled hospitalised patients who wished to go home but were at high risk of institutionalisation. The rehabilitation programme was associated with significantly fewer days in hospital over the next 12 months, but participants spent an average of 36 days in a care home rehabilitation facility.

A Cochrane review suggested that there is insufficient evidence to compare the effects of care home environments, hospital environments, and own home environments on rehabilitation in older people. Another Cochrane review found insufficient evidence to estimate the likely benefits, harms, and costs of institutional or at home care for functionally dependent older people. It appears that care homes might be a useful venue for the provision of rehabilitation services, offering a form of step down care when people no longer need to be in hospital but are not ready to go home. While care homes do not necessarily improve outcomes, they have not been found to reduce outcomes either.
Summary: what works?

This overview has briefly outlined lessons from research into providing rehabilitation services in the community, including rehabilitation for long term neurological conditions. More than 500 studies were screened to identify key themes. We focused not on examining individual services or models of care, but rather on potential high impact changes that cut across care delivery.

The priorities for further consideration are listed in the table.

Priorities for further consideration are based on an assessment of the amount of evidence available, the quality of evidence, the effect of interventions and the extent to which initiatives are already being implemented in the NHS. It is important to emphasise that not all possible interventions are listed here. Also, in many cases there is not a strong evidence base. This does not mean that an intervention does not work well; only that it has not been well researched. For this reason, the Department of Health used the evidence as just one of the components considered when developing high impact changes. Expert opinion, consensus workshops and other methods were used to form a well rounded picture, underpinned by this rapid evidence review.

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<th>Intervention</th>
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<td>Supporting self care</td>
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References


Pace AV, Dowson CM, Dawes PT. Self-referral of symptoms (SOS) follow-up system of appointments for patients with uncertain diagnoses in rheumatology out-patients. Rheumatol 2006; 45(2): 201-3.


