Evidence for transforming community services

Services for long term conditions
Transforming community services is about trying something new, building on the old and putting the very best available research into practice. We analysed more than 10,000 studies to identify innovative community solutions for long term conditions. Here we present the changes to services, staff and systems that are not yet common practice, but have the potential to transform the NHS.

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Information in this document is drawn from a rapid evidence review. We searched 10 electronic 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.
Ten important issues identified by the research evidence that may improve community services for people with long term conditions are:

- proactive telephone support, perhaps offered by nurses
- visiting people at home with a view to reducing admissions
- using technology to transmit data about symptoms
- encouraging self monitoring so people know when to seek help
- substituting telephone calls for some clinic visits
- providing care based on people’s level of need
- seeing service users as part of the healthcare team
- including specialist nurses as part of community teams
- seeking partnerships with community groups
- considering ways to integrate health and social care
Transforming community services for people with long term conditions requires a focus on the services themselves, the teams that deliver them and the systems that support them. Long term conditions now account for the greatest proportion of service use and health service costs, so there has been extensive research about potential innovations. Here we selectively outline initiatives that are not yet widespread throughout the UK.

Who: targeting services

Target those with mid and high level needs

Segmentation involves categorising people, often in terms of their behaviours, clinical characteristics, or service use history, in order to provide them with different services or care pathways. Segmentation identifies patients with similar needs and/or preferences, and groups them together so that a specific pathway can be designed for them and specific resources can be allocated to them. For example, a person with mild disease could be offered a disease specific education programme or expert patient programme to help with self care. A patient with more severe disease or multiple diseases might be offered one to one support in the community to avoid crisis and prevent hospital admission. While there are a number of descriptions of segmentation approaches, there is little high quality evidence about the impact of targeting people in this way.
Registries are one way of segmenting people, according to their specific condition. There is some evidence that disease registries, whereby information is compiled centrally and used to identify and track people at high risk of hospitalisation, may have positive impacts on quality of care and clinical outcomes.\textsuperscript{2,3,4,5} Registry data may also be used to send reminders to service users and physicians about routine check-ups or medication reviews. Registries are now common in the UK but are not useful unless they are proactively used to target and follow up people.

A Kings Fund assessment of five ‘high performing’ organisations running managed care programmes in the US found that four out of five organisations used risk stratification techniques to identify people at high risk and targeted these people for intensive case management (nurse-led follow up).\textsuperscript{6}

In order to identify people most at risk of clinical deterioration and hospitalisation, routine monitoring and data collection strategies are needed in community care. An example is the PRA, which is one of the most widely used screening tools for older adults at risk of increased healthcare use in the US. A large cohort study of older adults in the US found that using screening tools can help predict people at high risk of service use and hospitalisation.\textsuperscript{7}

In England, the Department of Health has funded several investigations of monitoring tools and risk stratification methods,\textsuperscript{8,9} including the development of new indicators and assessment techniques such as the PARR tools for people with long term conditions.

While there are numerous descriptions of monitoring and data collection strategies and of system assessment tools,\textsuperscript{10,11} we found limited comparative evidence about the effects of different routine monitoring systems.

Regardless of the tools used to identify people at high risk of service use, there is consistent evidence that such targeting is beneficial. What is often overlooked is that those at medium risk should also be a priority because without proactive intervention these people may readily move into the high risk category.\textsuperscript{12,13,14,15}

There is also some evidence that targeting people at risk and offering enhanced care in the community can change the use of hospital services. For example, one randomised trial assessed whether focusing services on people at ‘high risk’ would make services more effective in the US. The trial found that targeting services such as case management towards those at highest risk of repeated service use made a significant difference to hospital use.\textsuperscript{16} Another study in the US found that predictive modelling and simple databases could improve the quality and integration of care for people with diabetes.\textsuperscript{17}
A small randomised trial in the US assessed the benefits of providing case managers with information about the risks and potential benefits of different types of care for their patients. The authors concluded that providing case managers with risk assessment tools can improve targeting of services for people long term conditions.\textsuperscript{18}

In England, a health centre in Cheshire has trialled a case management approach targeting high risk people over the age of 65 years. People were visited at home by a nurse for an initial assessment. The nurse then coordinated care and facilitated patient education. There was a 15% reduction in admissions and 31% reduction in length of hospital stay.\textsuperscript{19}

Evaluation of a programme developed in the US for ‘high cost’ patients found a 60% reduction in total hospitalisations, a 15% increase in functional status, and a 55% decrease in total costs among 1915 people with heart failure over a 13 month period. The programme used standardised, disease-specific protocols and case managers to support self management.\textsuperscript{20}

A cost analysis emphasised the importance of adequate screening when providing services. The authors found that using screening tools, even those with low predictive value, can help to ensure services are correctly targeted and more cost-effective.\textsuperscript{21}

Similarly, a cost-effectiveness analysis found that people at high risk of clinical deterioration or hospitalisation were most likely to benefit from disease management programmes\textsuperscript{22} and an analysis of eye examinations in people with diabetes also found that targeting people at high risk may be most cost-effective.\textsuperscript{23}

It appears that segmenting people into groups according to different levels of need, when done as part of a multifaceted approach,\textsuperscript{24} has the potential to help identify those whose would most benefit from care in the community; more intensive care; and specific services to avoid reliance on hospital services.
Self monitoring is where people monitor their symptoms in order to track their progress, modify their behaviours or medications accordingly, and assess when to seek help from health professionals. People monitor their own vital signs or symptoms, but do not transfer this data to health professionals.

Self monitoring of factors such as blood pressure and blood glucose may improve clinical indicators in people with high blood pressure, diabetes, and asthma.\textsuperscript{25,26,27,28,29,30,31} One case control study in Australia found that early identification of adverse trends in clinical signs recorded electronically at home may help avoid hospital readmission and reduce the length of hospital stay in people with long term conditions.\textsuperscript{32} A cost analysis in the US found that self monitoring and self care significantly reduced monthly Medicare expenditures over a one year period.\textsuperscript{33}
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 using modems or phone lines. Data can also be submitted by telephone or text messages and sent to community services or to hospital teams. Telemonitoring can empower 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.

A number of studies have found no significant difference in clinical outcomes following teletransmission of blood glucose measurements in people with diabetes. However, other trials found that transmitting clinical data via telephone lines and receiving feedback from professionals was associated with significantly improved clinical indicators in people with diabetes. Similarly, some trials suggest that automated telemonitoring improves medication adherence and blood pressure control in people with hypertension.

Other trials found that telemonitoring was associated with improved quality of life and reduced mortality for people with heart failure. However, another trial found that automated telephone monitoring improved adherence but had no impact on quality of life for people with heart failure.

A key success factor appears to be reviewing the data and receiving feedback. Proactive approaches are more useful than merely monitoring clinical indicators automatically. When proactive feedback was used, automatically transmitting clinical readings using a telephone line appears to be at least as efficient as usual care and may reduce the use of health services. For instance, one trial found that transmitting blood glucose measurements saved time and money for people with diabetes and the professionals caring for them.

Another trial found that monitoring vital signs and sending alerts to nurses for values outside the normal range reduced days in hospital and emergency department visits for the elderly and people with heart failure, diabetes, and chronic lung disease.
Similarly, transmitting monitoring data and telephone follow up was associated with reduced healthcare costs and fewer admissions and days spent in hospital for people with heart failure\(^54,55,56,57,58,59,60,61,62\) and COPD.\(^63\)

We found limited evidence about the effect of monitoring clinical signs via internet and email. One trial in people with asthma found that internet based monitoring improved quality of life and clinical outcomes more than routine monitoring by specialists or GPs.\(^64\)

Regardless of the specific type of telemonitoring involved, the set up costs are usually minimal but the NHS would need to ensure that clinical staff are on hand to monitor data and provide regular feedback if values exceed normal ranges. Research suggests that telemonitoring is most beneficial when coupled with telephone follow up from a professional to discuss readings with participants, rather than merely transmitting data to clinicians. Without this checking function, the monitoring data has little value.

Proactive telephone support reduces service use

Telephone support or case management by telephone has been found to improve clinical outcomes or reduce symptoms in people with depression,\(^65,66,67,68,69\) heart disease,\(^70,71\) diabetes,\(^72,73,74,75,76,77\) asthma,\(^78\) and the frail elderly,\(^79\) amongst others. Most studies included weekly, fortnightly, or monthly telephone calls from nurses following hospital discharge.

There is good evidence that providing information and following up people by telephone may reduce health service use. For example, regular telephone calls from nurses have reduced hospital admissions or delayed subsequent health care encounters in people with heart disease,\(^80,81,82,83,84\) asthma,\(^85\) and diabetes.\(^86\)

But there are divergent findings. One trial found no clinical improvements\(^87\) and another trial found no improvements in quality of life in people with diabetes receiving telephone support.\(^88\)
The most effective frequency of telephone support remains uncertain. An observational study found that people with diabetes receiving daily telephone contact had reduced healthcare service use, but people who received weekly follow up had increased service use. Other studies found that daily telephone support reduced rehospitalisation and improved quality of life in elderly people and in those with various long term conditions including diabetes and heart failure.

The support provided needs to be proactive in order to be most effective. A trial found that sending educational text messages to mobile phones did not improve treatment adherence in people with hypertension. Another trial found no significant improvements in functional status or quality of life among people with heart failure receiving education through an automated hand held device.

Scheduling consultations by telephone in people's homes is an area worth exploring further. One large observational study found that teleconsulting, based in people's homes, could reduce costs for individuals.

A randomised trial assessed clinician-initiated telephone calls instead of selected primary care visits for men in the US. Over a two year period, men receiving telephone calls had fewer hospital admissions, shorter stays in hospital, and fewer intensive care unit days. Healthcare expenditure was 28% less for men receiving telephone care over the two year period. Savings were greatest for men with poorer health at the beginning of the study.

Another trial found that telephone consultations enable a greater proportion of people with asthma to be reviewed at no additional cost to the health service.

However, one trial found that substituting telephone consultations for same-day appointments saved time initially, but may have been offset by higher re-consultation rates in a general population sample.
A trial of nurse telephone consultations using decision support software for out of hours primary care found that telephone support did not affect unplanned hospital admissions in a general population group. However, an economic analysis suggested that the number of admissions avoided made out of hours nurse telephone support cost-effective overall.

The evidence is not overwhelmingly positive but this area warrants further investigation because it has the potential to provide convenient high quality care for patients, save staff time (in travel and visits), and may even reduce service use and save costs. The set up costs are minimal, but there would need to be enough team capacity to provide proactive and reactive support. Another workforce implication is that staff would need to be trained to provide information and support by telephone. This requires different skills than face to face consultations and may include motivational interviewing, enhanced listening skills and enhanced verbal communication skills to be able to get messages across clearly and concisely over the telephone.

There are inconsistent findings about the benefits of providing information and support via the internet. There are some positive findings. For instance, a randomised trial found that email and egroups were associated with improved symptoms in people with heart disease. Another trial found that internet support was associated with improved self management in people with diabetes. An observational study found that people with depression who used internet support groups frequently were more likely to have resolved depression compared to those who used the groups less frequently. In contrast, another trial found no significant improvements in quality of life for women with diabetes receiving internet support.

There is inconsistent evidence about the effects on service use of internet education. Two trials in general population samples found that an internet system or secure messaging to facilitate contact between patients and providers may reduce clinic visits. On the other hand, a trial in people with chronic back pain found no significant differences in clinic visits or hospitalisations following email support.
Systematic reviews suggest visiting elderly people at home, either as a preventative measure or as follow up after hospital discharge, has positive effects on physical, social, and mental health, knowledge, and service use. There may also be benefits for unplanned admissions. Most of these studies involved home visiting as an ‘extra’ service rather than substituting home visits for care in other locations.

For instance, a systematic review found that nurse home visits were associated with positive effects on physical, mental and social health, knowledge, and service use. Another meta-analysis of 22 studies assessed the impact of home visits on days in hospital among elderly chronically ill and terminally ill people. Home visits were associated with a significant reduction in days in hospital, with a trend towards reduced overall healthcare costs.

A randomised trial in the UK assessed a community support scheme for 903 people aged over 75 years. The intervention involved support and practical help from care attendants on the first day following hospital discharge and for up to 12 hours a week for two weeks. Three months after initial discharge, there were no significant differences between groups in physical independence, morale, or death. However, hospital readmission rates within 18 months of discharge were significantly less in the group who received home care. Benefits were particularly high among people living alone. The authors concluded that if home care was provided to everyone discharged from hospital over the age of 75 living alone, an average health district might expect to save about 23 hospital beds at a net annual saving of £220,000 in the short-term.

A similar trial with people with heart disease in the UK assessed nurse home visits at 1-2 and 6-8 weeks after hospital discharge. Compared to those receiving usual care, people visited at home by nurses had fewer hospital readmissions and an average of two fewer days of hospitalisation after initial discharge.
Other studies have found that nurse home visits may help improve clinical outcomes in people with moderate chronic airways disease,\textsuperscript{114} prevent functional decline in older people,\textsuperscript{115} and reduce admissions in people with heart failure\textsuperscript{116,117} and mental illness.\textsuperscript{118} The more frequently home visits occur, the greater the benefits.\textsuperscript{119}

Home visits may also reduce other types of institutionalisation. For instance, in Denmark, people aged 75 or older discharged from hospital were randomly assigned to usual care or a home visit from a district nurse on the day after discharge and a home visit from their GP two weeks later. After one year, those receiving home visits were less likely to be admitted to a nursing home and spent fewer days in institutions.\textsuperscript{120}

But not all evidence is supportive. In Australia, a randomised trial evaluated nurse home visits for people with chronic obstructive pulmonary disease discharged from hospital. There were no differences in GP visits or hospital admissions.\textsuperscript{121} Another similar trial in Australia with people with severe chronic obstructive pulmonary disease found that home visits did not improve hospital admissions, length of stay, or the number of outpatient or emergency department visits.\textsuperscript{122}
View service users as part of the community team

A great deal has been written about workforce issues in caring for people with long term conditions. However to transform community services patients themselves may need to be considered as part of the workforce – both in terms of supporting their own care, but also regarding the support they can offer others. This is important because about three quarters of people with long term conditions do not need specialist one-to-one management from health and social care professionals on an ongoing basis. Instead, they manage their conditions themselves, perhaps with annual reviews from their GP.\(^{123}\)

There is already a significant focus in the UK on supporting self care for people with long term conditions. This includes providing accessible information, self management education, self monitoring, patient-held records, and direct access to outpatient care. A transformational approach would support service users as an essential component of the community team, providing the bulk of their own care.

There is good evidence that involving service users in healthcare decision-making may encourage people and their families to take more responsibility for their care,\(^ {124,125,126,127,128}\) help people feel more in control,\(^ {129,130,131}\) encourage health professionals to follow recommended care protocols,\(^ {132,133}\) and have some impacts on quality of life.\(^ {134}\)

The extensive evidence about the pros and cons of individual and group education sessions for service users but this is not summarised here because such interventions are already widespread in England, with the Expert Patient Programme and other condition-specific courses. The provision of education and support through other media is less established. Education and self management support can be delivered through video, computers, and the mass media. Some studies have suggested that these strategies improve care processes and people’s experiences.\(^ {135,136,137,138,139,140,141}\)
There is good evidence that service users, as well as caring for themselves, can support others. For instance, peer-led self-management programmes have been found to improve health outcomes and help people feel more confident in managing their own care.\textsuperscript{142,143,144} A number of studies suggest that using community-based volunteers to support service users can be beneficial. For instance, a randomised trial in London found that volunteers ‘befriending’ women with chronic depression improved clinical outcomes.\textsuperscript{145}

There is also preliminary evidence from the United States that people with mental health issues can act effectively as case managers for other service users.\textsuperscript{146,147} One analysis of eight literature reviews concluded that case management by paraprofessionals and peers may improve health outcomes, but that further research is required.\textsuperscript{148}

Don’t rely on written plans or patient-held records

Written care plans, held by service users, have been used to help empower people to manage their own care. There is evidence that written plans can help people better adhere to treatment and may improve some health outcomes but this alone is unlikely to transform community services.\textsuperscript{149,150,151,152}

A Cochrane review concluded that programmes that enable people to adjust their medication using a written action plan appear to be more effective than other forms of asthma self-management.\textsuperscript{153} However, another review found no strong evidence that written plans improved outcomes for people with asthma. One type of plan was not consistently more effective than another. The reviewers suggested that no firm conclusions can be drawn about the benefits of including written self-management plans in comprehensive asthma care programmes.\textsuperscript{154}

Similarly, other trials have found that individualised care plans do not help shift the focus of care from secondary care to community services for frequent users of the emergency department\textsuperscript{155} or people with COPD.\textsuperscript{156} A Cochrane review of hospital discharge plans found that written discharge plans had no effect on length of hospital stay or readmission rates.\textsuperscript{157}
Sometimes service users are given their medical records to keep and bring to each consultation. The aim is to empower people to retain ownership of their information and care. Some studies suggest that patient-held records can improve clinical outcomes in people with diabetes and in preventive care. But a Cochrane review with eight trials found no overall positive or negative effects from patient-held records. Computerised systems did not improve clinical outcomes.

A randomised trial in 28 general practices in the UK found that patient-held records did not improve health service use for people with long term mental illness. Similarly, a US trial of patient-held records for people who had suffered stroke found that while participants were pleased to have a copy of their records, took them when they visited doctors, and reported learning more about their stroke, there was no difference in health practices or behaviours compared to usual care. Other studies report similar findings for people with a range of conditions including stroke, cancer, and mental illness.

The available evidence suggests that a focus on written care plans and patient held records may have some benefits, but should not be a high priority for the NHS given conflicting evidence and small scale effects.

**Specialist nurses can be part of community teams**

Adding specialist nurses to community teams, rather than substituting them for other staff or having them work alongside rather than within teams, have potential. For instance, a randomised trial found that specialist asthma nurses placed in UK general practices reduced unscheduled visits for asthma compared to usual care.

A number of countries have begun using nurse-led clinics to help manage long term conditions and other illnesses in primary care. Reviews and randomised trials suggest that nurse-led clinics may improve the quality of care. Research from Sweden, The Netherlands, and the UK suggests that nurse-led clinics are effective for managing chronic obstructive airways disease and asthma, heart failure, diabetes, and people receiving anticoagulant therapy.

One study found that Advanced Practice Nurses may reduce rehospitalisation for people with heart failure. The nurses had advanced knowledge of cardiac disease and evidence based care for heart failure. They provided discharge planning in hospital and then home based follow up for three months period.
The NHS already benefits from specialist nurses, but an implication from the literature is that these nurses should be integrated with community teams and form part of a broader multidisciplinary team.

**Not enough is known about GPs with special interests**

'GPs with special interests' are family doctors who specialise in specific clinical areas. Most have undertaken continuing medical education in their field of interest and provide specialist GP care in a range of settings, including their own clinics, acute hospitals, and community hospitals and trusts. There is considerable variation in how GPs with special interests are trained, accredited, receive referrals, manage service users, and receive support and supervision. Few empirical studies have been conducted in this area.

GPs with special interests are often involved in specialist community based clinics. There is some evidence that service users in the fields of musculoskeletal problems, dermatology, and ear, nose and throat problems are more satisfied with these types of clinics compared to usual care. Easy access, shorter waiting times, and a less clinical atmosphere may all contribute to levels of satisfaction.

Generally, waiting times for appointments with GPs with special interests are lower than for hospital outpatients, especially when clinics are located in the community rather than in hospital.

However, care from GPs with special interests does not seem to improve health outcomes. This may be because a lack of equipment, expert support, and inability to request diagnostic tests limits the scope of what GPs with special interests can do.

Offering services from GPs with special interests tends to increase referral rates (in terms of other GPs referring more people to them for care). This may be due to a lowering of the referral threshold. One study found that 30% of referring GPs saw GPs with special interests as an addition to hospital outpatient care rather than as a substitute.

The cost of GP with special interest services varies a great deal, depending on the type of service provided. One study found that the cost to the NHS ranged from £35 to £94 per patient. Another study estimated that costs were £30 to £40 per consultation compared with hospital costs of £60 to £80 per outpatient. However hospital costs included overheads which were not included in the costings for GPs with special interests. When all costs are taken into account, overall costs may be lower in outpatient clinics compared to GP with special interest clinics.
Transforming systems

Partnerships with community groups have potential

Transforming community services involves a wider range of organisations than the NHS alone. Of potential is working with community organisations or delivering services in community (non health) venues. A number of authors have suggested advantages with this approach or described their attempts to use community centres, schools, churches, and voluntary organisations to deliver health care.\textsuperscript{200,201,202,203,204,205,206,207,208,209} However, few randomised trials or systematic reviews have investigated the effects of partnerships with the voluntary sector on shifting the use of hospital services.

One randomised trial found that providing services in community venues may reduce unplanned admissions. The initiative involved running a disability prevention and self management programme at a community seniors centre in the US with eight nurse-led sessions over a one year period.\textsuperscript{210}

Other trials have found that co-ordinating care between community groups and healthcare providers can improve service use and increase satisfaction. The US Alzheimer’s Association integrated their care consultation service with the services offered by a managed care system for people with dementia and their caregivers resulting in improved access to services.\textsuperscript{211}

Working alongside community organisations requires organisation and a change in mindset. The voluntary sector often works in a different way to health services and so it will be important to educate NHS teams about the culture and working practices of other organisations to avoid misunderstandings. Clear commissioning arrangements which reimburse organisations promptly and in full are also required. Often community organisations may undercost services or operate on less than full cost recovery. While this makes the services attractive from a cost containment point of view, a reliance on volunteers and low paid staff with little infrastructure is ultimately unsustainable.
Integrating social care and healthcare has potential

Wider system change may also be essential in transforming community services for people with long term conditions. It is widely acknowledged that health and social care should work together to support the ‘whole person.’ However there is limited research about best practice strategies for integrating social and healthcare.

In Italy a randomised trial found that integrated social and medical care for frail elderly people living in the community was associated with fewer admissions to hospital or nursing homes. The estimated financial savings were about £1125 per year of follow up.212

Another controlled study of elderly people with long term conditions in the US compared usual care from a GP versus shared care between GPs, nurses, and social workers. Over a one year period, people receiving shared social and healthcare had fewer unplanned hospital admissions than those receiving usual care.213

But few studies outline the pros and cons of working jointly with social care, whether it is best to have social care staff situated within primary care teams or social services providing linked but separate services within community venues, or undertaking joint training with healthcare teams. There are many options for joint work and integration, and this may be something worth exploring further.
This overview has briefly outlined lessons from research about community services for people with long term conditions. More than 10,000 studies were screened so we have included just a selection of illustrative examples of key points. We focused not on examining individual services or models of care, but rather potential high impact changes that cut across all pathways.

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.

Summary: what works?
References

9 www.natpact.nhs.uk/uploads/cdm_matrix_selfassessment
19 www.hda-online.org.uk/hdt/1101/local.html
20 http://www.ralinmed.com

31 Staessen JA, Den Hond E, Celis H et al. Antihypertensive treatment based on blood pressure measurement at home or in the physician’s office: a randomized controlled trial. JAMA 2004; 291(8): 955-64.


92 Marquez Contreras E, de la Figuera von Wichmann M et al. Effectiveness of an intervention to provide information to patients with hypertension as short text messages and reminders sent to their mobile phone (HFA-Alert). Alten Primaria 2004; 34(6): 399-405.


Sanderson D. To the ENT degree. HSJ 2003; 113: 26-7.


