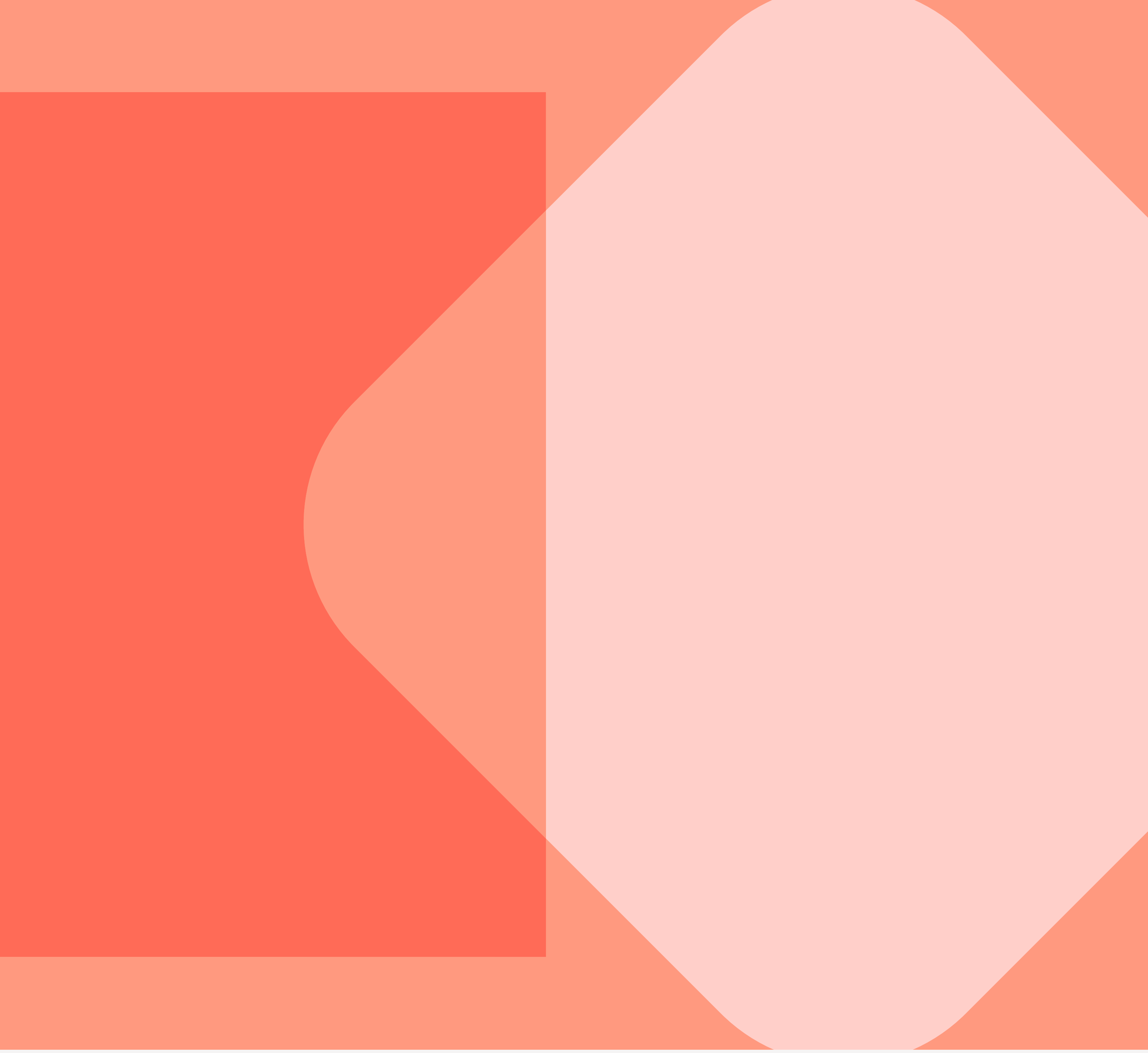

Research report March 2017

Shifting the balance of care

Great expectations

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About the report

This report forms part of our work programme on new models of care, and also contributes to our ongoing work on Sustainability and Transformation Plans (STPs). We have a long track record in analysing the evidence base surrounding out-of-hospital care and, with the need to move care from hospital into the community a core part of STP plans across the country, a review of the evidence is both timely and necessary.

This research draws on an extensive literature review to assess the realism of the narrative that moving care out of hospital will save money. It sets the context of this through analysis of hospital activity data over ten years. The literature review focuses on initiatives that were expected to impact on hospital care, as this is what STPs predominantly focus on. We explore these by looking at five key areas: elective care, urgent and emergency care, admission avoidance and easier discharge, at risk populations, and self-care.

This report aims to inform the development of STPs to ensure that they are drawing on the best available evidence. It also seeks to dispel some widely held myths about the 'magic bullet' of shifting care into the community.

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1 Key messages

- Demographic and other drivers create an imperative to shift the balance of care from hospital to community. The NHS plans to undertake this transition while demand rises and it experiences the longest period of funding constraint in its history.

- There is widespread hope – both within the NHS and amongst national policy-makers – that moving care out of hospital will deliver the 'triple aim' of improving population health and the quality of patient care, while reducing costs. This has long been a goal for health policy in England, and is a key element of many of the Sustainability and Transformation Plans (STPs) currently being developed across the country.

- Our analysis suggests that some STPs are targeting up to 30 per cent reductions in some areas of hospital activity, including outpatient care, A&E attendances and emergency inpatient care over the next four years. Yet this is being planned in the face of steady growth in all areas of hospital activity – for example a doubling of elective care over the last 30 years.

- This report provides insight from evidence on initiatives that plan to support this shift in care. Drawing on a review of the STPs and an in-depth literature review of 27 initiatives to move care out of hospital, we look at what their impact has been, particularly on cost, and what has contributed to their success or otherwise.

- Many of the initiatives outlined in this report have the potential to improve patient outcomes and experience. Some were able to demonstrate overall cost savings, but others deliver no net savings and some may increase overall costs.

- Where schemes have been most successful, they have: targeted particular patient populations (such as those in nursing homes or the end of life); improved access to specialist expertise in the community; provided active support to patients including continuity of care; appropriately supported and trained staff; and addressed a gap in services rather than duplicating existing work.

- Nonetheless, in the context of long-term trends of rising demand, our analysis suggests that the falls in hospital activity projected in many STPs will be extremely difficult to realise. A significant shift in care will require additional supporting facilities in the community, appropriate workforce and strong analytical capacity. These are frequently lacking and rely heavily on additional investment, which is not available.

- We argue that NHS bodies frequently overstate the economic benefits of initiatives intended to shift the balance of care. For example, they may use prices to calculate savings rather than actual costs and can therefore wrongly assume that overhead or fixed costs can be fully taken out. Similarly, many underestimate the potential that community-based schemes may have for revealing unmet need and fuelling underlying demand.

- The implementation challenges involved in shifting care out of hospital are considerable and even initiatives with great potential can fail. This is often because those responsible for planning and implementing them do not take into account the wide range of system, organisational and individual factors that impact upon their feasibility and effectiveness. Many schemes rely on models to identify ‘at risk’ groups that are often deficient and fail to adequately identify patients genuinely at risk of increased hospitalisation.

- Many initiatives we examine place additional responsibilities upon primary and community care, at a time when they are struggling with rising vacancies in both medical and nursing staff, and an increasing number of GP practices are closing. Addressing these issues is a necessary precursor to success.

- It is possible that many of the initiatives explored in this report have been too small and haven't been supported by wider system interventions and incentives, and have therefore failed to shift the balance of care and deliver net savings. A more radical approach to the design and scale of the models being used might be required, but this will take time and resources to support the transition.

- While out-of-hospital care may be better for patients, it is not likely to be cheaper for the NHS in the short to medium term – and certainly not within the tight timescales under which the STPs are expected to deliver change. The wider problem remains: more patient-centred, efficient and appropriate models of care require more investment than is likely to be possible given the current funding envelope.

2 Executive summary

The NHS is undertaking a journey of transformation while experiencing the longest period of funding constraint in its history. It needs to close a £22 billion gap in its finances by 2020/21. At the same time, the underpinning fabric of social care is being dismantled, and a range of demographic and other factors are fuelling demand for NHS services. It is a herculean, and some might say impossible, task – made all the more difficult by the small amounts of available transformation funding now being used to prop up a system that is going further into the red.

The goal of delivering health care closer to people's homes is not a new one and has been an aspiration of numerous policy initiatives within the NHS for many years. In its most recent incarnation, 44 STPs, published in October 2016, describe how local areas aim to bridge the gap in NHS finances while delivering the vision set out in the Five Year Forward View. The plans need to find credible ways of coping with rising demand with no equivalent rise in funding. Many areas hope that moving care out of hospital will deliver the 'triple aim' of improving population health and the quality of care for patients, while reducing costs.

This report provides insights from the available evidence to help inform these local strategies. It aims to help local planners ensure that their assumptions are credible – currently the STPs include widely differing assumptions about the net impact on activity and cost. It also aims to help areas identify the initiatives that may deliver the greatest benefits locally and the key contributors to successful implementation.

We have grouped the evidence on the initiatives into five areas (although these are not mutually exclusive):

1 Changes in the elective care pathway.

2 Changes in the urgent and emergency care pathway.

3 Time-limited initiatives aimed at avoiding admission or facilitating discharge from hospital.

4 Managing ‘at risk’ populations including end-of-life care and support for people in nursing homes.

5 Support for patients to care for themselves and access community resources.

We reviewed a large body of academic and grey literature, with a particular focus on robust evidence from randomised controlled trials (RCTs), Cochrane reviews and other systematic reviews, in order to draw on the most reliable evidence available. However, the quality of evidence on which we were able to call was mixed, and often reliant on poorly constructed evaluations.

We focused on initiatives that were expected to impact most on areas targeted by STPs and those most frequently measured in research papers. The list of initiatives is long, but not fully comprehensive. Initiatives were selected based on a review of STPs and our knowledge of what health care organisations are implementing across the country. We put the initiatives into four categories: those where there is robust evidence to suggest an initiative improved care and was cost effective; those where there is emerging positive evidence; those where there is contradictory evidence; and those that have poor evidence or where there is evidence of increased costs.

Context – underlying activity trends

Rising patterns of hospital activity

We lay the evidence on initiatives to shift care out of hospital alongside analysis of the underlying trends in hospital activity, as well as other factors that would influence the implementation and impact of these initiatives.

Seasonal fluctuations aside, the last eight years have seen steady growth in all areas of hospital activity. Emergency admissions have risen by 14 per cent since 2008/09. For planned care, growth has been even sharper: elective admissions are up 22 per cent, while both GP referrals and first outpatient appointments have risen 26 per cent. This continues a longer-term trend of growth stretching back to the creation of the NHS.

These trends are likely to be magnified in future by demographic and epidemiological pressures. For example, the population of England is expected to grow by 4.4 million (7 per cent) and the number of people over the age of 85 by 0.5 million (33 per cent) between 2014 and 2024. Over a similar time period, the number of people living with dementia is expected to grow from 700,000 in 2014 to around 1.3 million in 2025.

STP assumptions on reducing hospital activity

Currently the STPs include widely differing assumptions about the impact that their local strategy will have on hospital activity and their underlying assumptions are often far from clear.

With this caveat, our interpretation of the material in the public domain is that in 2020/21 the STPs are predicting activity to be less than forecast (based on current trends) by the following amounts:

- 15.5 per cent fewer outpatient attendances (range 7–30 per cent)
- 9.6 per cent less elective inpatient activity (range 1.4–16 per cent)
- 17 per cent fewer A&E attendances (range 6–30 per cent)
- 15.6 per cent fewer non-elective inpatient admissions (range 3–30 per cent).

Only two thirds of STPs included an explicit risk assessment of these assumptions.

Summary of the evidence

Overview of initiatives

Relative strength of evidence of reduction in activity and whole-system costs	Initiative
Most positive evidence	• Improved GP access to specialist expertise • Ambulance/paramedic triage to the community • Condition-specific rehabilitation • Additional clinical support to people in nursing and care homes • Improved end-of-life care in the community • Remote monitoring of people with certain long-term conditions • Support for self-care
Emerging positive evidence	• Patients experiencing GP continuity of care • Extensivist model of care for high risk patients • Social prescribing • Senior assessment in A&E • Rapid access clinics for urgent specialist assessment
Mixed evidence, particularly on overall cost reduction	• Peer review and audit of GP referrals • Shared decision-making to support treatment choices • Shared care models for the management of chronic disease • Direct access to diagnostics for GPs • Intermediate care: rapid response services • Intermediate care: bed-based services • Hospital at Home • Case management and care coordination • Virtual ward
Evidence of potential to increase overall costs	• Extending GP opening hours • NHS 111 • Urgent care centres including minor injury units (not co-located with A&E) • Consultant clinics in the community • Specialist support from a GP with a special interest • Referral management centres

Redesigning elective care pathways

Relative strength of evidence of reduction in activity and whole-system costs	Initiative
Most positive evidence	• Improved GP access to specialist expertise
Mixed evidence, particularly on overall cost reduction	• Peer review and audit of GP referrals • Shared decision-making to support treatment choices • Shared care models for the management of chronic disease • Direct access to diagnostics for GPs
Evidence of potential to increase overall costs	• Consultant clinics in the community • Specialist support from a GP with a special interest • Referral management centres

There are a number of initiatives that aim to better manage elective care, the most promising of which is enabling GPs to access specialist opinion to help them manage patients in the community and avoid unnecessary referrals to outpatient services.

Peer review and audit of GPs' referral patterns can improve the quality of referrals and may reduce the overall number of referrals to outpatient services. Shared decision-making, shared care models and direct access to diagnostics for GPs have well-evidenced benefits for patients and professionals, but less conclusive findings on their capacity to reduce hospital activity and deliver savings. There are also initiatives where the evidence suggests that they may *increase* overall costs. These include consultants working in the community, referral to a GP with a special interest and the use of referral management centres.

Any strategy to redesign elective care does so in the context of sharply rising outpatient attendances, sharply rising day case activity and slowly falling elective inpatient activity (as care shifts from inpatient care to day case and outpatient procedures). In addition, many of the initiatives that have shown promise to date bring new expectations of GPs; nearly all require

GP training or support. However, we believe there is significant scope in the medium to long term to redesign the elective pathway and deliver a more integrated model of elective care, with much more outpatient care delivered in primary care. A much more radical redesign of elective care underpinned by technology, including clinical decision support, and adoption of shared decision-making could yield savings.

Redesigning urgent and emergency care pathways

Relative strength of evidence of reduction in activity and whole-system costs	Initiative
Most positive evidence	• Ambulance/paramedic triage to the community
Emerging positive evidence	• Patients experiencing GP continuity of care
Evidence of potential to increase overall costs	• Extending GP opening hours • NHS 111 • Urgent care centres including minor injury units (not co-located with A&E)

A range of initiatives aim to reduce attendance at accident and emergency (A&E) departments, with some also helping to avoid subsequent hospital admission. Our review of the evidence suggests that, of the approaches reviewed, ambulance/paramedic triage to the community has the strongest evidence to support it.

The effective implementation of schemes designed to reduce emergency hospital care is dependent on capacity in primary care and improved data-sharing between sectors. The schemes that require staff working in different ways will need to ensure that individuals are sufficiently trained and working within their sphere of competency, particularly where decisions about referrals are made. However, other initiatives have the complex task of trying to influence patients' behaviour prior to their contact with urgent or emergency services, or to prevent further use of services (i.e. extending GP opening hours, NHS 111 and urgent care centres which are not co-located). Successfully changing patterns of service use requires access to appropriate and timely primary care, as well as high levels of trust in these alternative services.

Trends in use of A&E, and the significant increase in attendances in 2003 following the introduction of minor injury and specialist services, highlight an important consequence of the initiatives described in this section: supply-induced demand. Many of the initiatives we looked at increased contacts with the NHS without equivalent reductions in the use of A&E. In some cases, this has increased overall costs.

Avoiding hospital admission and accelerating discharge

Relative strength of evidence of reduction in activity and whole-system costs	Initiative
Most positive evidence	• Condition-specific rehabilitation
Emerging positive evidence	• Senior assessment in A&E • Rapid access clinics for urgent specialist assessment
Mixed evidence, particularly on overall cost reduction	• Intermediate care: rapid response services • Intermediate care: bed-based services • Hospital at Home

Over the last 30 years the number of hospital beds has more than halved. At the same time, hospital admissions have been rising, particularly for older people. Bed reductions have been possible because of a reduction in length of stay and a shift from inpatient care to day case and outpatient care. Despite these bed reductions, some estimates suggest that up to 50 per cent of beds are occupied by people who could be cared for in community settings.

Of the evidence reviewed, the initiatives with the most positive outcomes are those for condition-specific rehabilitation. Pulmonary and cardiac rehabilitation improve quality of life and reduce hospital admissions, and have been shown to be cost effective. There is emerging positive evidence for rapid access clinics and senior decision-makers in A&E, but further research is needed, particularly around their economic impact.

Evaluation of rapid response teams and the use of intermediate care beds shows much more mixed results, suggesting that local implementation and context play a large part in their success. Clear referral criteria and good integrated working across health and social care appear to be important. Hospital at Home schemes successfully provide a safe alternative to hospital, but there is little evidence that they deliver net savings.

Absence of evidence is not necessarily a sign that a particular initiative would not work if introduced in an appropriate context. What is clear is that to avoid hospital admissions and accelerate discharges, there must be sufficient capacity and funding of alternative forms of care in the community. Without this investment, analysis suggests that the NHS will need to expand, not contract, its bed capacity.

Managing 'at risk' populations

Relative strength of evidence of reduction in activity and whole-system costs	Initiative
Most positive evidence	• Additional clinical support to people in nursing and care homes • Improved end-of-life care in the community • Remote monitoring of people with certain long-term conditions
Emerging positive evidence	• Extensivist model of care for high risk patients
Mixed evidence, particularly on overall cost reduction	• Case management and care coordination • Virtual ward

A large number of diverse initiatives over the last two decades have aimed to better manage 'at risk' populations, but while services are highly valued by patients, very few have successfully reduced hospital activity. The strongest evidence relates to those initiatives that target well-defined groups; that is, those in nursing and residential homes, and those at the end of life. There is growing evidence for initiatives that monitor people at home, particularly for some conditions such as heart failure. The extensivist model, which provides holistic care for those at greatest risk, has promising evidence from its use in the US, but its benefits have yet to be formally demonstrated in England. The initiatives which have the greatest challenge in demonstrating impact on hospital activity, but have other positive benefits for patients and their experience, are more general attempts to case manage those deemed to be at highest risk of admission, including the use of virtual wards.

There are several reasons for this lack of impact or cost savings. First, efforts to coordinate care involve initiatives to correct underuse and ensure timely access to care. In isolation, these efforts tend to increase the use of care, at least partially negating any reductions in preventable or unnecessary care resulting from coordination. Second, for every costly complication prevented, a care coordination programme must manage multiple patients at risk of such a complication, even if it selectively targets high-risk patients. And third, care coordination is costly. The cost of staff and other resources can offset the savings from the hospital care avoided.

Maximising impact on hospital use requires accurately targeting initiatives at the groups most likely to benefit, and where a reduction in admission will have most impact on resource use. Risk stratification tools still struggle to identify ‘at risk’ individuals at the point before they deteriorate.

Trends in life expectancy and the number of people with multi-morbidities suggest that the number of ‘at risk’ people will continue to rise, making it an even greater imperative to manage this group better. The lesson from the evidence is that significant attention needs to be paid to the accurate targeting of initiatives, while moderating expectations of their capacity to reduce overall cost.

Support for patients to care for themselves and access community resources

Relative strength of evidence of reduction in activity and whole-system costs	Initiative
Most positive evidence	• Support for self-care
Emerging positive evidence	• Social prescribing

There are 15 million people living with long-term conditions and over two million with multiple long-term conditions. Together they account for 55 per cent of GP appointments and 77 per cent of inpatient bed days. Receiving support to help them manage their conditions may result in reduced crisis points and less costly care. However, despite the positive evidence for self-care, there remains a lack of clarity about which elements are most effective. Assessing the impact of social prescribing presents significant challenges as it encompasses highly diverse initiatives for a wide range of needs, and its benefits go beyond reduced resource use. But the growing evidence base is positive.

Both support for self-care and access to community resources require behaviour change on the part of patients and professionals; moving from a model in which the patient is a passive recipient in the traditional medical model, to a treatment programme that is based around engagement and active participation. Self-care requires significant infrastructure and professional support to improve health and digital literacy, as well as encourage engagement. Programmes that are well-supported, funded and given sufficient time to develop are most likely to demonstrate benefits. Given the many millions of people managing one or more long-term condition, the scale of what is required to realise the full potential in this area is considerable.

Implementation and other challenges

The challenges in implementing the sorts of initiatives we have analysed are considerable and even those with great potential can fail. This is often because the wide range of system, organisational and individual factors that impact feasibility and effectiveness are not taken into account. The proposed shift in care cannot be achieved without significantly increasing capacity and capability in primary and community care, and solving some of the prevailing social care problems.

A major challenge is workforce. The NHS is trying to grow services where clinical workforce numbers have fallen and disinvest in services where clinical workforce numbers have grown. For example, between 2006 and 2013, the number of consultants in hospital and community services grew by 27 per cent, while the total GP workforce rose by only 4 per cent and the number of GPs per capita fell. Between 2010 and 2015, the number of district nurses fell by 35 per cent.

There are large and growing gaps in the clinical workforce, particularly in the services facing some of the most acute demand pressures. A third of GP practices have a vacancy for at least one GP partner. There are vacancy levels of over 21 per cent for district nurses. It is questionable whether there is the workforce – in terms of numbers, skills and behaviour – needed to deliver these initiatives.

Many of the models being used within the NHS to identify ‘at risk’ groups (such as people who are frequently admitted to hospital) are frequently deficient and those using them are often too optimistic in their assumptions about the impact of targeting high-risk groups.

The NHS as a whole also has a tendency to view problems through the lens of a single condition (e.g. diabetes). The complexity that stems from multi-morbidity is frequently not well understood or addressed. This lack of understanding of a person’s entire health and social care needs, and service use, leads to unrealistic assumptions being made about the potential impact of an initiative.

There are particular challenges in delivering economic benefits. A number of factors inhibit the delivery of system-wide savings. The use of prices to calculate savings rather than actual costs and a tendency in modelling the costs of services to assume all the overhead or fixed costs can be fully taken out, can mean that real-world savings are significantly over-estimated. There is also the risk of supply-induced demand; any strategy that aims to reduce over-use is also likely to identify under-use and unmet need.

The challenge of demonstrating economic benefits is part of the broader issue of the way in which success is measured. While initiatives may not deliver savings, they may increase ‘value’ by addressing unmet need, or encouraging need to be met in ways that deliver better outcomes for people. Bundles of initiatives and multifaceted programmes targeting high-risk populations are likely to be more effective than those involving single approaches, yet single initiatives are most often implemented and measured.

Also, initiatives are not given long enough to take effect. A key feature of so-called ‘transformational’ change is the length of time it takes. Yet policy-makers frequently want instant results. The STP process is a case in point here – one of the biggest shifts in how the NHS delivers care for a generation is expected to be completed within five years.

A further complicating factor is that in-hospital and out-of-hospital care are not on an equal footing when it comes to investment in staffing, infrastructure and the elusive but important issue of prestige. And despite the considerable pressures they are facing, hospitals have the infrastructure and payment systems to enable continued investment, while the same cannot be said for care out of hospital. This makes the goal of transferring care out of hospital all the more challenging.

Finally, a vital facilitator of all of the above is strong analytics and shared data. This is essential if the problems are to be correctly diagnosed, the solutions appropriately targeted and their impact evaluated.

Conclusion

Our research has shown that despite the potential of initiatives aimed at shifting the balance of care, it seems unlikely that falls in hospital activity will be realised unless significant additional investment is made in out-of-hospital alternatives.

Where schemes have been most successful, they have: targeted particular patient populations (such as those in nursing homes or the end of life); improved access to specialist expertise in the community; provided active support to patients including continuity of care; appropriately supported and trained staff; addressed a gap in services rather than duplicating existing work.

Implementation and contextual factors cannot be underestimated, and there needs to be realistic expectations, especially around the economic benefit of new care models. If STPs continue to work towards undeliverable expectations, there is a significant risk to staff morale, schemes may be stopped before they have had a chance to demonstrate success, and gains in other outcome measures such as patient experience may be lost.

There are a number of areas where STPs can learn from previous initiatives:

- Measures should be taken to really understand patient needs and what adds value, rather than using activity as a proxy for demand.
- More effective risk stratification and linked data should be used to identify genuinely high-risk patients and avoid ‘regression to the mean’ (whereby patients identified as high risk at a point in time do not meet this characteristic when analysed over a longer time period).
- Robust data and analytics to support change are essential.
- Staff need improvement methods that they can use, and support in implementing changes. Support from frontline managers, as well as leadership from the top, is vital.
- A workforce strategy is needed to ensure that staff are equipped with the competences required by the new models.
- A whole-system perspective needs to be taken when assessing the cost effectiveness of initiatives, including a realistic assessment of the capacity to disinvest in hospital and other services.

None of the above detracts from a significant challenge that this work poses to local and national planning assumptions. Shifting the balance of care from the hospital to the community has many advantages for patients, but is unlikely to be cheaper, certainly in the short to medium term. These findings echo the National Audit Office’s recent conclusion that current attempts at integrating services provide no evidence that integration will save money and reduce hospital activity.

Any shift will also require appropriate analytical capacity, workforce and supporting facilities in the community. Currently these are lacking. And the wider problem remains: more patient-centred, efficient and appropriate models of care require more investment than is likely to be possible given the current funding envelope.

3 Introduction

By 2020/21 the NHS faces a £22 billion funding gap that must be tackled by its current period of transformation. The 44 regional STPs, published in October 2016, describe how local areas aim to bridge the gap in NHS finances while delivering the vision set out in the Five Year Forward View. This vision anticipates a shift in the balance of care from the hospital to the community, with the aim of helping people to improve their health and better manage long-term conditions, and services being integrated around the patient.

At the same time, the underpinning fabric of social care is being dismantled (Humphries and others, 2016) and a range of other factors are fuelling demand for NHS services. Not only will there be increasing demand from a rapidly ageing population, carrying a significantly larger burden of chronic disease, but medical advances will continue to increase the capacity to treat these conditions. In addition, the requirement to hit national targets, including the drive towards 24/7 consultant-delivered care and the current activity-based payment models, all serve to strengthen the gravitational pull of the hospital. These are powerful forces to overcome if the balance of care is to be successfully shifted from the hospital to the community.

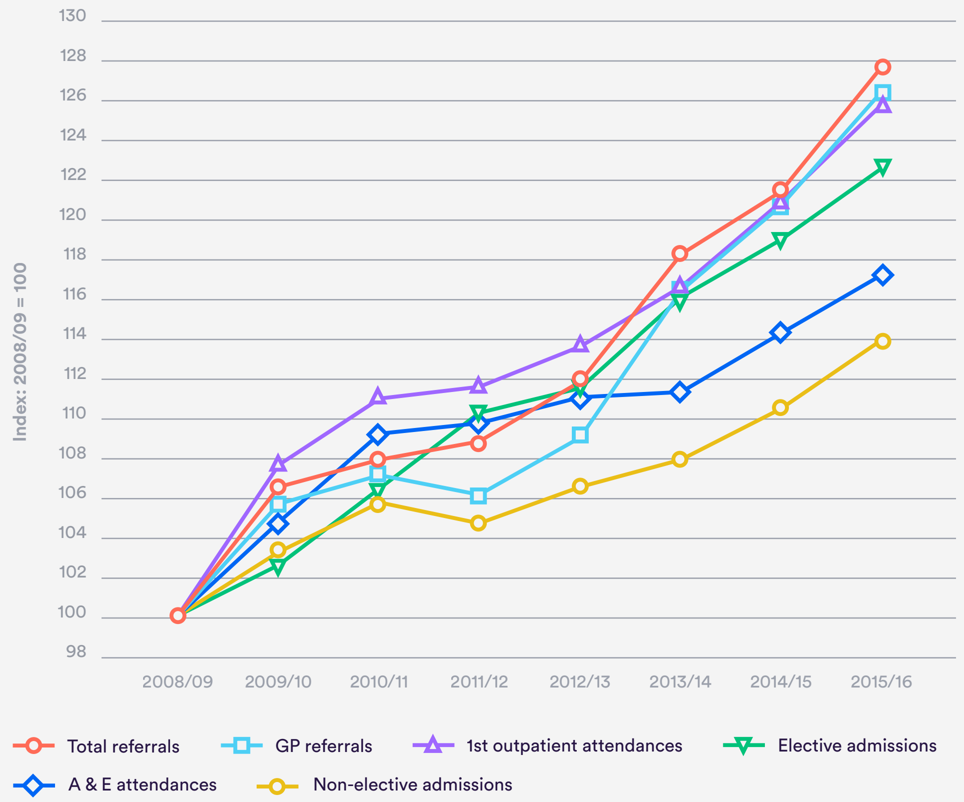
STPs need to find a credible way of coping with rising demand, but no equivalent rise in funding. Many areas hope that moving care out of hospital will deliver the ‘triple aim’ of improving the quality of experience and outcomes for patients, while reducing costs. This has been the great hope of generations of NHS plans and policy initiatives. The NHS Plan of 2000 talked of more cooperation with social care to help keep older people out of hospital, and to help them leave as soon as was appropriate. The Better Care Fund more recently pooled billions of pounds between the NHS and social care with similar aims. Succeeding where so many past initiatives have not is a herculean task, and will be made all the more difficult in the coming years by the small amounts of available transformation funding now being used to prop up a system that is going further into the red (Gainsbury, 2016).

This report aims to provide insights from the available evidence to inform those local strategies, and to help local planners ensure that their assumptions are underpinned by evidence and that appropriate attention is paid to the complex journey of transformation. We also hope it will inform planning at a national level.

We reviewed academic and grey literature, with a particular focus on robust evidence from randomised controlled trials (RCTs), Cochrane reviews and other systematic reviews. We have sought to find the most reliable evidence available. However, as others have highlighted (Simmonds and others, 2012; Purdy, 2010), the evidence base on which we were able to call was generally of poor quality. There is little rigorous quantitative evidence available, particularly on efficacy and cost effectiveness. Literature was analysed with a particular focus on how initiatives have impacted on activity and cost. Where initiatives have resulted in other outcomes (e.g. improved patient satisfaction), we have noted it, but have not explored it further. Where evidence is stronger, we have tried to pull out what contributes to success and provide examples, based on the literature. On the basis of the evidence, we put the initiatives into four categories: those where there is robust evidence to suggest an initiative improved care and was cost effective; those where there is emerging positive evidence; those where there is contradictory evidence; and those that have poor evidence or where there is evidence of increased costs.

We lay this evidence alongside a picture of the trends in growth in hospital activity. As Figure 1 shows, seasonal fluctuations aside, the last eight years has seen steady growth in all areas of hospital activity; continuing the longer-term trend of growth.

Figure 1: Summary of recent hospital activity trends, 2008–2016 (indexed at 2008)



Source: NHS England, 2017

Note: The Health and Social Care Information Centre (now NHS Digital) warns that since the introduction of Payment by Results in 2006/07, the recording of activity information has improved and is likely have contributed to some of the growth in activity observed (Health and Social Care Information Centre, 2012).

Future demographic and epidemiological pressures are also considerable and are likely to magnify these underlying trends (see Box 1).

Box 1: Future pressures on demand

- Between 2014 and 2024, the population of England is expected to grow by 4.4 million (7 per cent) and the number of people over the age of 85 by 0.5 million to two million (33 per cent growth; ONS, 2015).
- By 2030, the number of older people needing help with activities of daily living is predicted to be 4.1 million, a growth of 61 per cent from 2010 (Snell and others, 2011).
- The number of people living with dementia is expected to grow from 700,000 in 2014 to around 1.3 million in 2025 (Lewis and others, 2014).
- The number of people living with cancer is expected to grow from 2.5 million in 2015 to four million by 2030 (Macmillan Cancer Support, 2013).

We end this report with a set of reflections on why it has proved so difficult to deliver the long-standing ambition to reduce hospital activity and make bottom-line savings from many of these initiatives. We begin with an overview of the assumptions currently being made within the STPs about reductions in hospital activity.

Overview of STP assumptions

Currently the STPs include widely differing assumptions about the impact that their local strategy will have on hospital activity (see Table 1 on page 24), and their underlying assumptions are often far from clear. With this caveat, our interpretation of the material in the public domain is that in 2020/21 the STPs are predicting activity to be less than forecast (based on current trends) by the following amounts:

- 15.5 per cent fewer outpatient attendances (range 7–30 per cent)
- 9.6 per cent less elective inpatient activity (range 1.4–16 per cent)
- 17 per cent fewer A&E attendances (range 6–30 per cent)
- 15.6 per cent fewer non-elective inpatient admissions (range 3–30 per cent).

While some of these reductions seem large, they are against a pattern of underlying growth, reductions against current activity are much smaller. A recent analysis of 11 STPs identified average reductions of 0.77 per cent in A&E attendances and 4.13 per cent in non-elective admissions when compared to 2016/17 figures (West, 2017).

Only two thirds of STPs included an explicit risk assessment, although they vary in detail. Common potential risks expressed included:

- lack of workforce capacity, especially in primary care, that may limit the amount of hospital activity that can be moved into the community
- lack of engagement with the public and clinicians, leading to dissatisfaction with the plans
- failure to implement changes in the timescale with the desired savings
- demand for services is not reduced to the degree estimated.

Table 1: STP assumptions about reductions in hospital activity

	N(%) of STPs that describe degree of impact	Min reduction in %	Max reduction in %	Mean average reduction in %
Outpatient	20 (45%)	7	30	15.5
Outpatient/inpatient – Condition specific	5 (11%)			
Elective inpatient	23 (52%)	1.4	16	9.6
A&E attendances	27 (61%)	6	30	17
Non-elective inpatient	31 (70%)	3	30	15.6

Overview of the evidence

In this section we explore what the evidence tells us about the success, or otherwise, of a wide range of initiatives that feature in the STPs, and what contributed to their success.

We have grouped the initiatives into five categories, as a way of marshalling the evidence, but we are conscious that the categories are not mutually exclusive:

- changes in the elective care pathway
- changes in the urgent and emergency care pathway
- time-limited initiatives aimed at avoiding admission or facilitating discharge from hospital
- managing 'at risk' populations including end-of-life care and clinical support for people in nursing homes
- support for patients to care for themselves and access community resources.

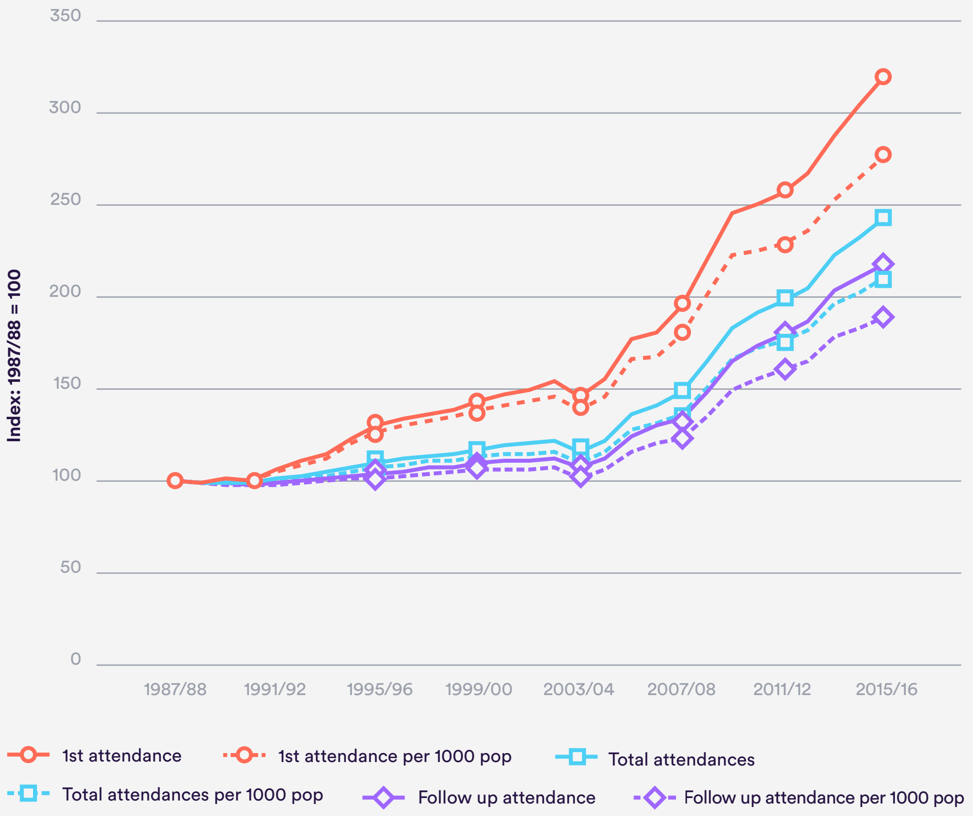
The list of initiatives we looked at is long but not fully comprehensive. Initiatives were selected based on a review of STPs and our knowledge of what health care organisations are implementing across the country. We have not covered initiatives primarily aimed at reducing activity in primary care, diagnostics or social care. We have also excluded public health. We are conscious that this is a key feature of many STPs, but feel that the evidence base is well covered elsewhere (Public Health England, 2016a).

4 Elective care

Context

Elective care in hospital has seen one of the steepest rates of growth in activity in the last 30 years. Since 1987/88, total outpatient attendances have more than doubled, from around 37 million to nearly 89 million in 2015/16 – an average annual growth of 3.2 per cent a year (4.2 per cent for first attendance and 2.8 per cent for follow up). There is a notable change in the historic trend in outpatient attendances at around 2003/04, with increases in total attendances up to that date averaging 1.3 per cent per annum, and after, 6.4 per cent. In part this is due to a break in the data series in 2003/04, but the persistence of the new trend suggests other factors at work.

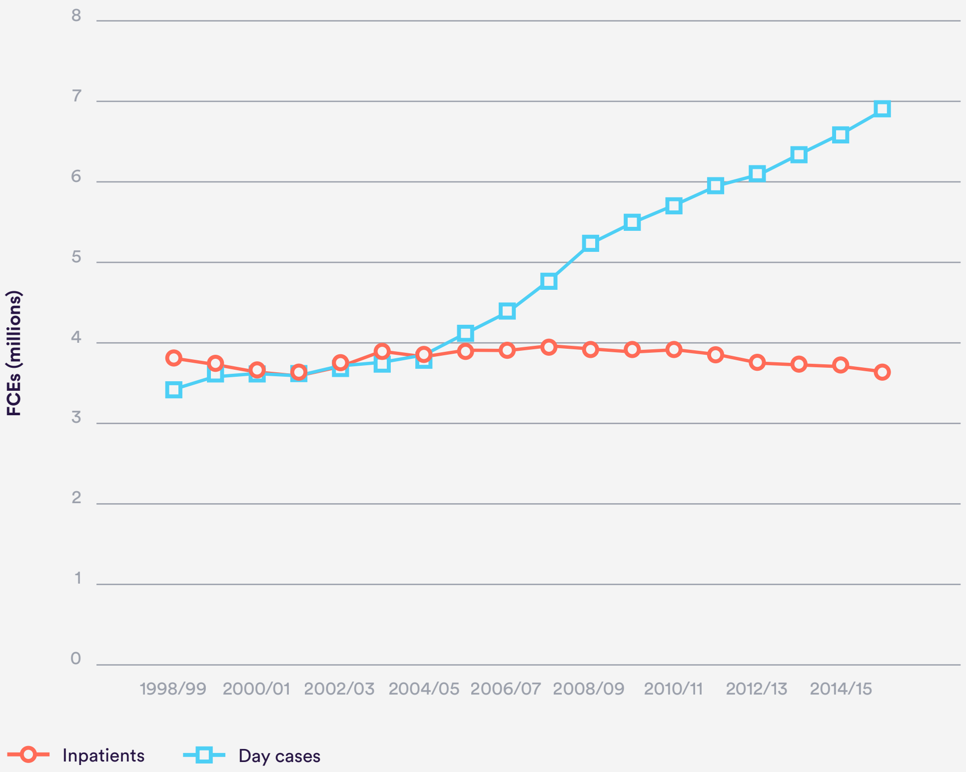
Figure 2: Outpatient activity



Source: NHS Digital, 2017

Between 1998/99 and 2015/16, planned (elective general and acute) activity grew by 45 per cent in total and 30 per cent relative to the growth in population. This overall growth in activity masks two different trends: a very marked rise in planned day case activity of over 100 per cent and a 4 per cent reduction in elective inpatient activity. Also notable is the acceleration in the amount of day case activity from 2005/06 onwards, growing nearly 75 per cent by 2015/16 (see Figure 3).

Figure 3: Trends in elective admissions, inpatients and day cases, 1998/99 to 2015/16



Source: NHS Digital, 2017

Table 2: Changes in elective activity 1998/99 – 2015/16

	Activity				Activity per 1000 population			
	1998/ 1999	2015/ 2016	Per cent change	Average annual change	1998/ 1999	2015/ 2016	Per cent change	Average annual change
Day	3,420,795	6,866,301	101%	4.2%	70.1	125.7	79%	3.5%
Inpatient	3,810,903	3,639,597	-4%	-0.3%	78.1	66.6	-15%	-0.9%
Electives	7,231,698	10,505,898	45%	2.2%	148.1	192.4	30%	1.5%

The rise in elective care activity is likely to have been driven by both supply side and system factors. Waiting time targets, the growth in capacity as the result of the new privately run treatment centres, as well as the shift from inpatient treatment to day and outpatient care, are likely to have been important drivers (Health and Social Care Information Centre, 2012). As with emergency care, the reductions in length of stay enable more activity to flow through the same capacity. The shift to less invasive surgical techniques also widens the potential pool of patients that can be treated.

The rise in GP referrals may also be linked to national targets, particularly the two-week cancer wait. But there is likely to be much more at play. There can be up to a ten-fold variation in the rate of referral between different GP practices (Imison and Naylor, 2010) and, while some of this variation will be explained by differences in patient need, much is not. Many studies have explored variation in referral practice and found that, in addition to patient factors, GP factors (for example GPs' tolerance of risk, their age, gender, experience and training) play a major part, as do structural factors (for example the distance to a specialist, the availability of alternatives, and the duration of the consultation between the GP and the patient) (Foot and others, 2010). The workload pressures within general practice (Hobbs and others, 2016) could also be contributing to higher rates of referral.

Overview of initiatives

We reviewed eight initiatives designed to avoid use of hospitals for elective care, and in particular hospital outpatient activity. These include:

- improved GP access to specialist expertise (including electronic referral)
- peer review and audit of GP referrals
- shared decision-making to support treatment choices
- shared care models for the management of chronic disease – specialist and GP
- direct access to diagnostics for GPs
- consultant clinics in the community
- specialist support from a GP with a special interest
- referral management centres.

Improved GP access to specialist expertise (including electronic referral)

Enabling GPs to access specialist opinion can help them manage patients in primary care and avoid unnecessary referrals to outpatient services. GPs are using email, telephone or in some cases video calls to contact specialists. To date, email has shown the greatest promise. Not only can it be used to send images and test results, it is also easier for specialists to work into their daily routine.

There is a growing evidence base to support the use of electronic referrals, particularly if embedded within a shared electronic record. They have been shown to reduce inappropriate referrals and improve the quality of diagnosis (Blank and others, 2014). For example, a recent review of an e-referral scheme for rheumatology in the US found that e-referral and subsequent electronic communication between GPs and consultants could avoid the need for outpatient attendance for 25 per cent of all referrals and improved the quality of information to support diagnosis (Scheibe and others, 2015). The current challenge to implementation in England is that few areas have the necessary electronic infrastructure to support this.

Teledermatology services provide a good example of accessing specialist opinion to aid clinical decisions. It enables GPs to email images of skin or skin appendages, together with a patient's medical history, to a dermatologist for advice. The evidence from the use of teledermatology suggests it is safe (Winpenny and others, 2016; Warshaw and others, 2015), and can reduce outpatient referrals and waiting times (Whited and others, 2013; Piette and others, 2016). However, it should be noted that teledermatology may be less effective for suspected skin cancer (Winpenny and others, 2016). There is a small but growing body of evidence that teledermatology can be cost effective, particularly when it is used to triage patients or when patients have to travel long distances to access dermatology services (Snoswell and others, 2016; Datta and others, 2015).

Box 2: Teledermatology in the South Bristol Consortium

GPs take images of the skin complaint and, along with clinical information, upload them to the teledermatology system. A consultant dermatologist then returns a diagnosis and recommended management plan within 72 hours – either for management in primary care or for a secondary care referral. An evaluation after nine months of the pilot found:

- net savings of £45,784 based on referral avoidance
- that of the 347 patients referred via teledermatology in the nine months, 68 per cent were managed in primary care
- improved quality due to the high number of patients receiving timely care
- high GP satisfaction
- improved patient satisfaction due to reduced anxiety and timely care.

Implementation challenges and issues

Specialists need dedicated time in their schedules to support this activity, and funding mechanisms need to support this. The patient pathway needs to avoid duplication and unnecessary appointments. Building communication into an existing electronic health record can help integrate it into existing workflows and improve ease of use. Training for GPs is important, particularly if they are required to undertake new activities such as uploading images for assessment (Lasierra and others, 2012). Building in feedback and case reviews enables ideas and lessons to be shared between consultants and GPs, and offers an opportunity to educate GPs. Securing clinical buy-in is important. A dedicated project manager can improve buy-in through regular communication with practices.

Sources of further evidence and information

- Snoswell C, Finnane A, Janda M and others (2016) *Cost-effectiveness of Store-and-Forward Teledermatology: A systematic review*
- NICE (2012) *Quality and Productivity Case Study: Teledermatology*
- Vimalananda VG, Gupte G, Seraj SM and others (2015) *Electronic consultations (e-consults) to improve access to specialty care: A systematic review and narrative synthesis*

*Full details of all listed sources of further evidence and information within this report can be found in the Bibliography section on page 107.

Peer review and audit of GP referrals

Peer review can successfully change GP referral patterns, improve the quality of GP referral and potentially deliver net savings (Blank and others, 2014; Imison and Naylor, 2010; Winpenny and others, 2016). A good example is an initiative in Wales (see Box 3). However, a more recent study of two schemes in England found no reductions in rates of outpatient attendances after the implementation of local peer review and audit (Cox and others, 2013).

Box 3: The Torfaen referral evaluation project

In this scheme GPs were funded for protected time to discuss their referrals retrospectively by peer review, and to attend meetings with consultants to discuss the appropriateness of those referrals and the use of alternative community-based services. Comparative referral data were also fed back to the practices. The quality of referrals improved. Referral rates in orthopaedics and emergency admissions reduced by up to 50 per cent, variability between practices decreased; and referrals to local services increased. The initiative was also reported to be highly popular with GPs (Evans, 2009).

Implementation challenges and issues

Any initiative is likely to face a degree of clinical resistance and will require strong clinical leadership in both primary and secondary care. Any strategy to reduce over-referral is likely to expose under-referral, and thus limit the potential for reducing demand (Imison and Naylor, 2010).

Reductions in referrals from one source can be negated by rises from other sources, so any demand management strategy needs to consider all referral routes and not just target one (Imison and Naylor, 2010).

Sources of further evidence and information

- Imison C and Naylor C (2010) *Referral management: Lessons for success*
- Winpenny E, Miani C, Pitchforth E and others (2016) *Outpatient services and primary care: scoping review, substudies and international comparisons*

Shared decision-making to support treatment choices

Shared decision-making (SDM) describes a process of joint decision-making between clinicians and patients. Drawing on both patients' preferences and the clinical evidence about treatment options, clinicians use information tools or 'decision aids' with patients to reach an agreed course of action. The approach empowers patients to become partners in their own health care, rather than passive recipients, resulting in real patient-centred care.

Decision aids have been found to reduce the likelihood of patients choosing major elective surgery compared with usual care, including cardiac revascularization, mastectomy and orchiectomy (Stacey and others, 2014). However, evidence of cost saving is much weaker (Walsh and others, 2014). Few studies have fully captured the costs of implementing the decision aids (for instance the additional time needed to sit with patients, as well as time needed to train staff in the use of shared decision-making). Where patients have chosen not to have an initiative, studies have followed them for a limited time (for example 18 months), and so it is not clear whether treatment has been avoided or merely postponed.

Box 4: Reductions in hip and knee surgery rates at Group Health, US

In 2009, Group Health, a vertically integrated health provider based in Seattle, developed a suite of decision aids (written and video-based) as part of a broader quality improvement initiative (http://sdmmonth.informedmedicaldecisions.org/creating-a-group-health-culture-where-shared-decision-making-is-the-norm). All staff, including senior clinicians, were required to watch the decision aid videos and learn how to use the tools in their patient pathways. Rates of hip and knee surgery were compared before and after the introduction of the decision aids. The study reported that the introduction of decision aids over a six-month period was associated with:

- 26 per cent fewer hip replacements
- 38 per cent fewer knee replacements
- 12 per cent reduction in costs (including inpatient, outpatient and pharmacy costs).

Source: Arterburn and others, 2012

Implementation challenges and issues

Shared decision-making was not designed to be a demand management tool, but a means to ensure treatment reflects individual patient preferences. It should not be seen primarily as a means to reduce hospital activity.

Shared decision-making takes more time than usual care. Health care professionals must explore and explain the evidence behind treatment options and take the time to fully understand patient preferences. It may also require changes to the consultation environment, such as a shared screen to access decision aids online.

In order for shared decision-making to be effective, staff need to be trained in how to get the best out of decision aids, for example by employing motivational interviewing. Staff may also need training in quality improvement techniques to improve their approach following patient feedback.

Finally, shared decision-making requires further evaluation, including capturing whether patients are deferring treatment or choosing alternative sources of care.

Sources of further evidence and information

- Stacey D, Bennett C, Barry M and others (2014) *Decision aids for people facing health treatment or screening decisions*
- Walsh T, Barr P, Thompson R and others (2014) *Undetermined impact of patient decision support initiatives on healthcare costs and savings: systematic review*
- Da Silva D (2012) *Helping People Share Decision Making: A review of evidence considering whether shared decision making is worthwhile.*

Shared care models for the management of chronic disease

‘Shared care’ refers to primary and secondary care professionals taking joint responsibility for the management of a patient. It can take several forms, most commonly: specialists running community clinics; regular exchange of letters or standardised record sheets; regular meetings between hospital specialists and GPs; shared care record cards carried by the patient; and computer-assisted shared care where data are collected and shared in primary and secondary care (Hickman and others, 1994). Shared care models cover a range of chronic diseases, including asthma and chronic obstructive pulmonary disorder (COPD) (Rea and others, 2004), cancer (Johansson and others, 2001), congestive heart failure (Doughty and others, 2002), depression (Unutzer J and others, 2002), diabetes (Smith and others, 2004) and chronic mental illness (Warner and others, 2000).

Shared care can improve prescribing, medication adherence and patient satisfaction (Smith and others, 2007; Unutzer J and others, 2002). However, the evidence base on whether it can reduce hospital use is mixed. One study of a COPD management programme found a reduction in length of stay (Rea and others, 2004). However, other studies found no evidence of impact on hospital admissions, length of stay or outpatient attendance (Schraeder and others, 2001; Warner and others, 2000). The context in which shared care is delivered may have a significant impact on its success. A Cochrane review found it may be more effective at reducing hospital admissions for older patients, those with depression and other serious chronic mental health illness, and those with higher levels of baseline morbidity (Smith and others, 2007).

Evidence on cost savings is also inconclusive. One RCT examining the management of patients with rheumatoid arthritis found that the mean cost per patient was slightly higher for those receiving shared care, but a small gain in quality of life meant that it was likely to be cost effective at £2,000 per quality-adjusted life years (QALYs) (Davies and others, 2007). Other work has found that cost effectiveness can depend on the degree of shared care offered, with complex patients who received higher levels of shared care proving more costly (McCrone and others, 2004). That said, shared care can result in cost savings for patients (Winpenny and others, 2016). Generally speaking though, studies on cost effectiveness are scarce and more robust evidence is needed.

Clear communication is essential to the success of shared care models. Ideally, progress reports should be produced and reviewed regularly by all parties involved. All members of the care team should also be clear about their roles and responsibilities (Lester, 2005), and GPs should not become overly reliant on the opinion of specialists (Crowe and others, 2010). In some cases, a lack of interoperability between IT systems in primary and secondary care inhibits the sharing of test results and data, which can lead to the duplication or omission of tests (Crowe and others, 2010). Ensuring that GPs and specialists have full support and resources from their respective organisations, and that they are offered additional training where required, can help shared care models deliver benefits.

Sources of further evidence and information

- Smith SM, Allwright S and O'Dowd T (2007) *Effectiveness of shared care across the interface between primary and specialty care in chronic disease management*
- Davies LM, Fargher EA, Tricker K and others (2007) *Is shared care with annual hospital review better value for money than predominantly hospital-based care in patients with established stable rheumatoid arthritis?*

Direct access to diagnostics for GPs

Direct access to diagnostics means that GPs directly order or conduct tests in a primary care setting or directly refer patients to hospital diagnostics. The rationale is that it can reduce waiting times, enable earlier diagnosis and avoid unnecessary referrals to consultants in secondary care.

There is some positive evidence that direct access to diagnostics can reduce GP referrals for CT scans, deep vein thrombosis (DVT) tests and gynaecological investigation (Buller HR and others, 2009; Jawad and Robinson, 2009; Simpson and others, 2010; Thomas and others, 2010). However, it can also increase referrals: a Scottish study where GPs had direct access to an arrhythmia monitoring service found many GPs referred low-risk patients (Skipsey and others, 2012). There is mixed evidence on the impact of direct access to diagnostics for GPs on cost. While positive results have been found for neurology (Taylor and others, 2012), other work has found that diagnostic ultrasounds in a primary care setting increased overall costs (Pallan and others, 2005).

These mixed outcomes have been attributed to a number of causes, including:

- GPs may unnecessarily investigate incidental findings (Benamore and others, 2005; Taylor and others, 2012)

- GPs may carry out tests when they are not needed (Aljebreen and others, 2013; Broe and others, 2013; Froehlich and others, 1997; Keren and others, 2011)

- GPs may not interpret test results accurately (Heller and others, 2004)

- tests performed in general practice may be repeated on referral to hospital (Huissoon and Carlton, 2002), particularly given that point-of-care tests are often less accurate than hospital diagnostics (Jones and others, 2013; Shaw, 2016). This is particularly the case for tests used to gain a differential diagnosis (Pawson and others, 2016)

- throughput in a hospital setting is generally much higher than in a community setting, thus reducing unit costs. (Pallan and others, 2005).

To avoid some of these pitfalls, GPs should be provided with guidance on the interpretation of results and specialist opinion on subsequent patient management (Pawson and others, 2016). Before any scheme is introduced, there should be a careful evaluation of its cost effectiveness versus the secondary care alternative – balancing reduced waiting times and increased convenience for patients with the greater efficiency of tests being carried out in a central location (Winpenny and others, 2016).

Sources of further evidence and information

- Jones CH, Howick J, Roberts NW and others (2013) *Primary care clinicians' attitudes towards point-of-care blood testing: a systematic review of qualitative studies*

- Shaw JLV (2016) *Practical challenges related to point of care testing*

- Pawson R, Greenhalgh J and Brennan C (2016) *Demand management for planned care: a realist synthesis*

Consultant clinics in the community

Consultants working in the community can involve specialists simply providing a community-based clinic or being attached to particular primary care teams. The rationale is to provide a service in a lower cost-per-unit setting, closer to patients' homes, and to facilitate learning for GPs and community-based professionals. While clinics in the community tend to be popular with patients and have the potential to reduce waiting times, they do not appear to reduce demand or cost – although very few studies on these arrangements exist (Winpenny and others, 2016).

There are a few reasons for this. First, specialists tend to see fewer patients in community settings as they are not supported by junior staff. Second, a significant proportion of patients seen in a community clinic subsequently need to be seen in a hospital setting. Third, in most cases community-based clinics are provided as an addition rather than an alternative to outpatient clinics. Finally, there is the potential for supply-induced demand (Winpenny and others, 2016). One study found that when a community-based diabetes service was introduced, hospital referrals reduced but the overall number of referrals rose (Nocon and others, 2004). More positively, where consultants are attached to a primary care team, there appear to be educational benefits for GPs that do not materialise when consultants simply run a clinic in the community. In one study, GPs self-reported a reduction in referrals as a result of the educational benefit (Moffatt and others, 2012). This has the potential to reduce costs, but no formal economic evaluations of these arrangements have been carried out – and they tend to rely on the drive and enthusiasm of individuals (Winpenny and others, 2016).

Sources of further evidence and information

- Winpenny E, Miani C, Pitchforth E and others (2016) *Outpatient services and primary care: scoping review, substudies and international comparisons*
- Robertson R, Sonola L, Honeyman M, Brooke B and Kothari S (2014) *Specialists in Out-of-Hospital Settings: Findings from six case studies*

Specialist support from a GP with a special interest

A GP with a special interest (GPwSI) has acquired additional specialist knowledge and skills in a particular clinical area. A GPwSI can provide an alternative referral route to a specialist within secondary care. The introduction of GPwSIs aimed to improve patient access to specialist care, to cut waiting list times, and to save on referral costs by providing a lower cost alternative to secondary care (Gérvas and others, 2007). GPwSIs now operate in a wide range of areas, including coronary heart disease, drug abuse, echocardiography and sexual health (Jones and others, 2016). A significant proportion of outpatient referrals could be diverted to GPwSIs. For example, one study showed that just under a quarter of patients in a respiratory clinic could safely be seen by a GPwSI (Gilbert and others, 2005).

The impact of GPwSIs on quality and cost has been extensively studied (Sibbald and others, 2008; Winpenny and others, 2016). In general, the evidence shows that the services delivered by GPwSIs are of equivalent quality to secondary care, and the increased accessibility is valued by patients (Winpenny and others, 2016). The evidence is much less clear on cost. For example, a study of dermatology patients found that referrals to the GPwSI service cost 76 per cent more (Salisbury and others, 2005).

A wide range of factors are likely to reduce the cost effectiveness of GPwSI services. These include:

- the referral threshold may be lower for the GPwSI services, thus stimulating more referrals and increasing referrals overall (Nocon and others, 2004)
- the case mix of those seen by the GPwSIs is likely to be less complex, so costs should also be less (Sibbald and others, 2008)
- hospitals clinics are staffed by a mixture of consultants and more junior and cheaper medical staff, whereas GPwSIs are paid the equivalent of a consultant rate (Winpenny and others, 2016)

- while GPwSI services may cost less per referral, if they are in addition to current services, real savings will only be achieved if hospital services can reduce their staffing and costs as a consequence of referrals being diverted to the new community service.

In conclusion, GPwSIs can provide a safe and more accessible alternative route of referral for a significant proportion of outpatient activity. They also offer a potentially rewarding and satisfying role for GPs keen to develop their skills further, thus offering a mechanism to help retain GPs in general practice. However, it is not clear that the deployment of GPwSIs will result in net savings and it could in fact increase costs. Any new service should be closely evaluated, including an assessment of impact on overall costs as well as activity, to ensure it is delivering its original aims.

Sources of further evidence and information

- Winpenny E, Miani C, Pitchforth E and others (2016) *Outpatient services and primary care: scoping review, substudies and international comparisons*
- Sibbald B, Pickard S, McLeod H and others (2008) *Moving specialist care into the community: An initial evaluation*

Referral management centres

Referral management centres aim to influence and control referrals from primary to secondary care. Some undertake clinical triage of all referrals from GPs to consultants, and also require consultant-to-consultant referrals to be subject to triage. Some conduct only an administrative triage of referrals. The centres may also act as a ‘choice’ centre and support patients in selecting secondary care services. While managing demand is a core aim of many centres, aims also include improving the quality of referrals; educating GPs; collecting data on the content of referrals; and using referral data to redesign services (Ball and others, 2016).

The evidence on the impact of referral management centres on demand is mixed (Blank and others, 2014; Imison and Naylor, 2010; Winpenny and others, 2016). There is evidence that referral management centres can improve the quality of GP referral and provide information to inform service planning (Ball and others, 2016; Imison and Naylor, 2010; Xiang and others, 2013). However, they are unlikely to be a cost-effective use of resources (Cox and others, 2013; Imison and Naylor, 2010). For example, a study of outpatient attendances in three areas with referral management centres found no reduction in outpatient attendance rate (Cox and others, 2013). The centres also carry a large overhead cost that is likely to outweigh savings from any reductions in referrals (Imison and Naylor, 2010). A recent freedom of information request to clinical commissioning groups (CCGs) by the British Medical Journal (Iacobucci, 2017) found only ten of 72 CCGs with referral management schemes in place (14 per cent) were able to provide figures showing that they had saved more money than they had cost. Nine CCGs (12 per cent) supplied figures showing that their schemes had not saved money overall. Almost three quarters of CCGs with a scheme (74 per cent; 53 groups) failed to provide figures to show whether or not they had saved money overall.

Sources of further evidence and information

- Imison C and Naylor C (2010) *Referral management: Lessons for success*
- Winpenny E, Miani C, Pitchforth E and others (2016) *Outpatient services and primary care: scoping review, substudies and international comparisons*
- Ball S, Greenhalgh J and Roland M (2016) *Referral management centres as a means of reducing outpatients attendances: how do they work and what influences successful implementation and perceived effectiveness?*

Conclusion

Relative strength of evidence of reduction in activity and whole-system costs	Initiative
Most positive evidence	• Improved GP access to specialist expertise
Mixed evidence, particularly on overall cost reduction	• Peer review and audit of GP referrals • Shared decision-making to support treatment choices • Shared care models for the management of chronic disease • Direct access to diagnostics for GPs
Evidence of potential to increase overall costs	• Consultant clinics in the community • Specialist support from a GP with a special interest • Referral management centres

There are a number of initiatives aimed at better managing elective care, the most promising of which is enabling GPs to access a specialist opinion to help them avoid unnecessary referrals to outpatient services.

Peer review and audit of GPs' referral patterns can improve the quality of referrals and may reduce the overall number of referrals to outpatient services. Shared decision-making, shared care models and direct access to diagnostics for GPs have well-evidenced benefits for patients and professionals, but less conclusive findings on their capacity to reduce hospital activity and deliver savings. There are also initiatives where the evidence suggests that they may increase overall costs. These include consultants working in the community, referral to a GP with a special interest and the use of referral management centres.

Any strategy to redesign elective care does so in the context of sharply rising outpatient attendances, sharply rising day case activity and slowly falling elective inpatient activity (as care shifts from inpatient care to day case and outpatient procedures). In addition, many of the initiatives that have shown promise to date bring new expectations of GPs. Nearly all require GP training or support.

There is significant scope in the medium to long term to redesign the elective pathway and deliver a more integrated model of elective care, with much more outpatient care delivered in primary care. However, it would be unwise to assume significant net reductions in hospital outpatient activity in the next three years, particularly if local primary care capacity is already stretched. Widespread adoption of shared decision-making could impact on levels of elective care, but this will take time and investment. Net savings seem unlikely in the short term. Longer term, a much more radical redesign of elective care, underpinned by technology, including clinical decision support, and adoption of shared decision-making, could yield savings.

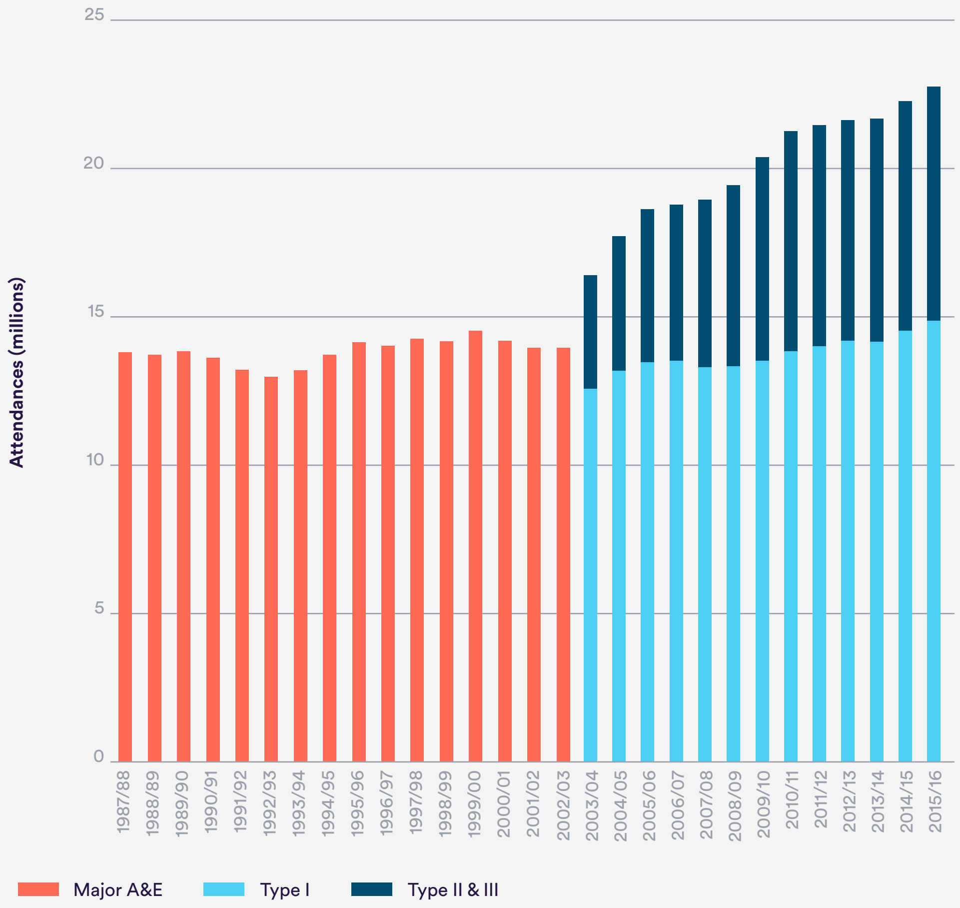
5 Changes in urgent and emergency care pathways

Context

Attendances at A&E departments were relatively flat between 1987/88 and 2003/04 but then rose sharply (see Figure 4). 2003/04 was the point at which GPs contractual obligations for out-of-hours services changed and new direct access urgent care centres began to be established. The attractiveness of these new units reflects one of the most commonly cited reasons people give for using urgent and emergency care services rather than going to see their GP first: that it is more efficient, both in terms of time taken to see a doctor and the ability to get diagnostic support (Agarwal and others, 2012; Kraaijvanger and others, 2016; Howard and others, 2005). As will be discussed in this chapter, subsequent efforts to try and improve access to general practice have not proved to be cost effective in preventing A&E attendances and have, alongside the introduction of minor injury and specialist units, resulted in a supply-induced demand for urgent care services (Rosen, 2014).

Demographic trends also have a role to play in driving the increasing use of A&E. Older people are more likely to have complex needs and therefore have higher rates of attendances compared with other groups, and spend longer in A&E, regardless of whether or not they are admitted or discharged (Blunt, 2014). There is also an increasing number of attendances by younger children and young adults (Public Health England, 2016b).

Figure 4: A&E total attendances at type 1, 2 and 3 units: 1987/88 to 2015/16



Source: NHS England, 2017

Overview of initiatives in urgent and emergency care pathways

In this section we review a range of initiatives that are known to, or aim to, reduce attendance at A&E departments, with some also helping to avoid subsequent hospital admission. These include:

- ambulance/paramedic triage to the community
- patients experiencing GP continuity of care

- extending GP opening hours
- NHS 111
- urgent care centres including minor injury units (standalone and co-located).

Ambulance/paramedic triage to the community

Professor Keith Willett, the National Director of Acute Episodes of Care, has said that the paramedic workforce is “probably the area of healthcare that has the greatest opportunity to manage demand for the rest of the health economy” (House of Commons Health Committee, 2016a). Fifty per cent of all emergency calls needing an ambulance could be managed at the scene and/or in the community; and therefore prevent unwarranted hospital admissions (NHS England, 2013).

The ‘see and treat’ model uses paramedic practitioners with advanced skills to assess, provide immediate treatment and discharge and/or refer patients within the community, where a hospital admission can be avoided (Brotherton, 2009). Secondary telephone triage is used by some services to further assess patients who have first been triaged as low priority when calling for an ambulance (Eastwood and others, 2014).

Both paramedic practitioners and secondary triage in ambulance services can reduce hospital transportations, with the evidence being stronger for paramedic practitioners (Eastwood and others, 2014; Turner and others, 2015). A systematic review and meta-analysis found paramedic practitioners are significantly less likely to transfer patients to A&E compared with conventional ambulance crews, and more likely to discharge at the scene (Tohira and others, 2013). There is conflicting evidence on whether paramedic practitioners are safe and provide appropriate referral in the community (Cooper and Grant, 2009; Fraess-Phillips, 2016; Turner and others, 2015). A serious concern relates to under-triage, where patients are assessed as lower acuity by paramedics but higher acuity by A&E doctors (Neeki and others, 2016).

There is limited evidence on cost, but it appears to be positive for both 'see and treat' (Cooper and Grant, 2009; Turner and others, 2015) and secondary triage (Turner and others, 2006). Further evaluation is needed in this area and the costs of investment and training, plus the requirement for additional resources such as vehicles, should be established.

Box 5: The paramedic practitioner in older people's support (PPOPS) scheme – The South Yorkshire Ambulance Service

In this initiative, paramedic practitioners (PP) with extended skills managed patients aged over 60, with not immediately life-threatening conditions, such as falls. Experienced paramedics underwent three weeks of theory learning and 45 days of supervised practice. A cluster RCT was used to evaluate the service compared with usual care. All episodes of care within 28 days of initial contact were included in the analysis.

Impact on demand:

- Those who saw PPs received more contact time but A&E attendances were reduced when compared with the control group (53.3 per cent vs 84 per cent).
- Those who saw PPs were less likely to be admitted to hospital (28 per cent vs 38 per cent).
- However, PP patients had more secondary care contact in the subsequent 28 days after the initial contact.

Impact on cost:

- Overall, the PP group cost £140 less per patient; as the contact time cost of the PPs was offset by a reduced number of ambulance transfers.
- When the QALY was valued at £20,000 per annum (as recommended by the National Institute for Health and Care Excellence [NICE] as the minimum funding threshold for technology appraisals), PPs had a greater than 95 per cent chance of being cost effective.

Source: Dixon and others, 2009

Implementation challenges and issues

Improved complementary services in the community are needed to maximise the potential of the service. If there are not adequate services in the community for paramedics to refer into, patients will continue to be transferred to A&E unnecessarily. Greater data sharing and integration of services will enable this and improve patient satisfaction. Strong clinical governance and appropriate training are also needed to ensure paramedics are working within their sphere of competence and referring appropriately. A feedback mechanism to tell paramedics if the patient subsequently re-presents would be valuable. Finally, widespread vacancies in the paramedic workforce could undermine the capacity to develop these services.

Sources of further evidence and information

- Tohira H, Williams TA, Jacobs I and others (2013) *The impact of new prehospital practitioners on ambulance transportation to the emergency department: a systematic review and meta-analysis*
- Turner J and others (2015) *What evidence is there on the effectiveness of different models of delivering urgent care? A rapid review*
- Eastwood K, Morgans A, Smith K and others (2015) *Secondary triage in pre-hospital emergency ambulance services: a systematic review*

Patients experiencing GP continuity of care

GP continuity of care is a complex concept that is not easily measured. It has been described as spanning four domains: informational, interpersonal, management and longitudinal (Deeny and others, 2017). There are many different definitions, but essentially it is 'the extent to which a person experiences an ongoing relationship with a clinician, and the coordinated clinical care that progresses smoothly as the patient moves between different parts of the health service' (Hill and Freeman, 2011). The Royal College of General Practitioners (RCGP) has described GP continuity of care as the key element that makes general practice effective (Royal College of General Practitioners, 2016). However, the level of continuity of care in general practice, as measured by the number of patients who say they have been able to see their preferred GP, has declined in recent years (Ipsos-MORI, 2016). This is most likely to be due to changes in the GP workforce, with more GPs working part-time or as locums, extended GP hours, access clinics and the growth in larger practices (Deeny and others, 2017).

Although there has long been evidence that continuity is associated with high patient satisfaction (Saultz and Albedaiwi, 2004), better outcomes, such as good control of blood sugar levels in diabetic patients (Deeny and others, 2017), emergency department utilisation (Cooke and others, 2005; Purdy and others, 2012), and the relationship between GP continuity of care and hospital admissions has been unclear. One systematic review found an association between emergency department attendance and continuity, but mixed evidence about the impact of continuity on admissions (Purdy and others, 2012). A national policy to introduce named accountable GPs for patients aged 75 years and over has had no significant effect on continuity of care, or on the number of referrals made to hospital (Barker and others, 2017). However, there is some relatively strong evidence emerging that high levels of continuity of care with a GP are associated with fewer emergency admissions for ambulatory care sensitive (ACS) conditions (Purdy, 2010) and that low levels of continuity are associated with higher risk of hospitalisation among children (Purdy, 2010). A recent study of patients aged 62 to 82 in 200 GP practices found that patients who experienced high levels of continuity of care had fewer hospital admissions (both elective and emergency) for ACS conditions, and that this was particularly true for the older patients in the sample (Deeny and others, 2017). Although the study could not prove causality, it does suggest that continuity of care in primary care has the potential to reduce demand for secondary care (Deeny and others, 2017). The authors concluded that out of every ten consultations, if patients saw their most frequently seen GP two more times, this would result in a 6 per cent decrease in admissions (Deeny and others, 2017).

Sources of further evidence and information

- Deeny S, Gardner T, Al-Zaidy S and others (2017) *Reducing hospital admissions by improving continuity of care in general practice*
- Purdy S, Paranjothy S, Huntley A and others (2012) *Initiatives to reduce unplanned hospital admission: a series of systematic reviews*

Extending GP opening hours

The aim of extending GP hours during evenings and weekends is to improve access to primary care, as perceived poor access to GP care has been shown to be associated with increased A&E attendances and thus demand (Huntley and others, 2013). The evidence for extended GP hours is mixed (House of Commons Health Committee, 2016a, 2016b; Huntley and others, 2013; Ismail and others, 2013; MacDonald, 2015; NIHR CLAHRC Greater Manchester, 2015; Rosen, 2014; Whittaker and others, 2016; Windrum and others, 2015). An evaluation of the initiatives funded nationally by the Prime Minister's Challenge Fund (PMCF) found that they reduced the number of self-presenting 'minors' at A&E by 15 per cent but there was no change in emergency admissions or use of out-of-hours services (MacDonald, 2015). These findings were similar to another recent study (Whittaker and others, 2016). However, the national evaluation has been criticised for being limited, conducted in a short timescale and unable to provide information to assess impact or cost effectiveness, with many CCGs unable to provide the information needed (House of Commons Health Committee, 2016b). Furthermore, there was less demand for weekend appointments; in particular, on Sundays and Saturday afternoons (MacDonald, 2015; House of Commons Health Committee, 2016b).

There are also concerns that extending GP hours may in fact increase demand (Rosen, 2014) and duplicate other out-of-hours services (NIHR CLAHRC Greater Manchester, 2015). This initiative is also expensive. The RCGP estimated that it would cost an extra £1.2 billion a year to extend GP hours in half of practices. There are also concerns around insufficient capacity within the GP workforce to both provide this extended service and adequately staff existing services; and a fear that seven-day services will disrupt continuity of care (House of Commons Health Committee, 2016b). However, one way to complement the expansion of GP hours is to have a more multidisciplinary approach; expanding the non-medical workforce to treat long-term conditions and more minor ailments, which is what many practices did during the PMCF (Sheffield Clinical Commissioning Group, 2016; House of Commons Health Committee, 2016b).

Sources of further evidence and information

- Whittaker W and others (2016) *Associations between extending access to primary care and emergency department visits: a difference-in-differences analysis*
- House of Commons Health Committee (2016) *Primary Care: Fourth Report of Session 2015–16*
- Mott Macdonald (2015) *Prime Minister's Challenge Fund: Improving Access to General Practice*

NHS 111

NHS 111 is a single point of access for all health and social care urgent (i.e. non-emergency) calls (NHS England, 2015a). It aims to provide 24/7 information, signpost to appropriate services and make appointments in real time. The hope was that it would help deflect patients from A&E. However, the evaluation of the NHS 111 pilot found a small increase in the use of emergency ambulances and the emergency and urgent care system as a whole after its introduction, suggesting that it may be less efficient than the previous system in diverting demand (Turner and others, 2013).

Surveys of patients using 111 suggest that it does steer a significant number of people who would have gone to A&E and ambulance services towards alternative services (Dayan, 2017). Evaluation of 111's predecessor, NHS Direct, found that it reduced the use of out-of-hours primary care, but not emergency services.

However, any benefits must be weighed against the cost of the system itself and the risk of supply-induced demand – that contacts with NHS 111 are unnecessary extra stages in a pathway which ends with the patient entering the system in the same place (Berchet, 2015; Cooke and others, 2005; Ismail and others, 2013; Turner and others, 2015; Rosen, 2014; Munro and others, 2000). This question of overall cost effectiveness was not measured in many studies and is conflicting (Ismail and others, 2013). Those that did measure this had results based on limited cost data, assumptions and simplistic analysis (Turner and others, 2012). Generally, evidence for telephone triage and advice services is mixed, with some studies showing increases or decreases in service use and staff workloads (Turner and others, 2015).

There are several potential reasons why there is no evidence of cost reduction and mixed evidence for demand reduction. Firstly, the service is operated by non-clinicians who may refer patients inappropriately. Employing more clinical staff may help address this, but will increase costs (Turner and others, 2015). Lack of access to medical records will inhibit clinical decision-making (Ismail and others, 2013), and improvements in this area may help. Generally, there is a lack of high-quality research, such as RCTs. Finally, a lot of available research was conducted when the service was first introduced and it could have been too early to demonstrate changes in patient behaviour or any learning for the service itself (Ismail and others, 2013; Turner and others, 2015).

Sources of further evidence and information

- Turner and others (2015) *What evidence is there on the effectiveness of different models of delivering urgent care? A rapid review*
- Ismail SA, Gibbons DC and Gnani S (2013) *Reducing inappropriate accident and emergency department attendances: a systematic review of primary care service interventions*

Urgent care centres including minor injury units

Urgent care centres ‘see and treat’ patients with non-serious injuries and illnesses in and out of hours. Minor injury units and walk-in centres are similar in function, except that minor injury units do not deal with primary care conditions (Berchet, 2015). It was hoped that the introduction of these services would result in patients with less serious conditions using these centres as an alternative to A&E. This has not happened (Berchet, 2015; Cooke and others, 2005; Ismail and others, 2013; NHS England, 2013; House of Commons Health Committee, 2016a) and there is evidence, supported by the overall trends in A&E attendances, that they may inflate overall demand (Berchet, 2015; NHS England, 2013; Ramlakhan and others, 2016; Tan and Mays, 2014). Furthermore, walk-in centres are under-utilised and have a higher cost per visit than a GP visit (Tan and Mays, 2014). The increase in demand has been attributed to the expansion in supply (Ramlakhan and others, 2016) and the confusion created by these alternative services (Berchet, 2015).

There is more support for urgent care services co-located within emergency departments (Royal College of Paediatrics and Child Health, 2014). Co-located services can stream patients through one ‘front door’ and thus reduce A&E attendances. One empirical study found 10–20 per cent of patients were diverted from high-acuity facilities at hospitals when walk-in centres were located with hospitals (Pinchbeck, 2014). However, there is also evidence that they can potentially create additional demand and increase costs (Ramlakhan and others, 2016). Overall, the evidence for co-located services is weak and of poor quality (Turner and others, 2015).

Sources of further evidence and information

- Ramlakhan S, Mason S, O'Keeffe C and others (2016) *Primary care services located with EDs: a review of effectiveness*
- Tan S and Mays N (2014) *Impact of initiatives to improve access to, and choice of, primary and urgent care in England: a systematic review*
- Berchet C (2015) *Emergency care services: trends, drivers and interventions to manage the demand*

Conclusion

Relative strength of evidence of reduction in activity and whole-system costs	Initiative
Most positive evidence on activity and cost reduction	• Ambulance / paramedic triage to the community
Emerging positive evidence	• Patients experiencing GP continuity of care
Potential to increase overall costs	• Extending GP opening hours • NHS 111 • Urgent care centres including minor injury units (not co-located with A&E)

A range of initiatives are known to, or aim to, reduce attendance at A&E departments, with some also helping to avoid subsequent hospital admission. Our review of the evidence suggests that, of the approaches reviewed, ambulance/paramedic triage to the community has the strongest evidence to support it. There is emerging positive evidence for GP continuity of care, while the evidence for the other initiatives is much more mixed. Extending GP opening hours may reduce minor attendances at A&E, but the cost to deliver this is considerable. There is evidence that while the provision of NHS 111 and urgent and minor injuries care in the community improve patient access, they may also increase overall demand and costs.

The effective implementation of schemes designed to reduce emergency hospital care is dependent on capacity in primary care and improved data-sharing between sectors. The schemes that require staff working in different ways will need to ensure that individuals are sufficiently trained and working within their sphere of competency, particularly where decisions about referrals are made. However, others have the complex task of trying to influence individuals' behaviour prior to their contact with urgent or emergency services, or to prevent further use of services (i.e. extending GP opening hours, NHS 111 and urgent care centres). Successfully challenging these patterns of service use requires access to appropriate and timely primary care, as well as high levels of trust in these alternative services.

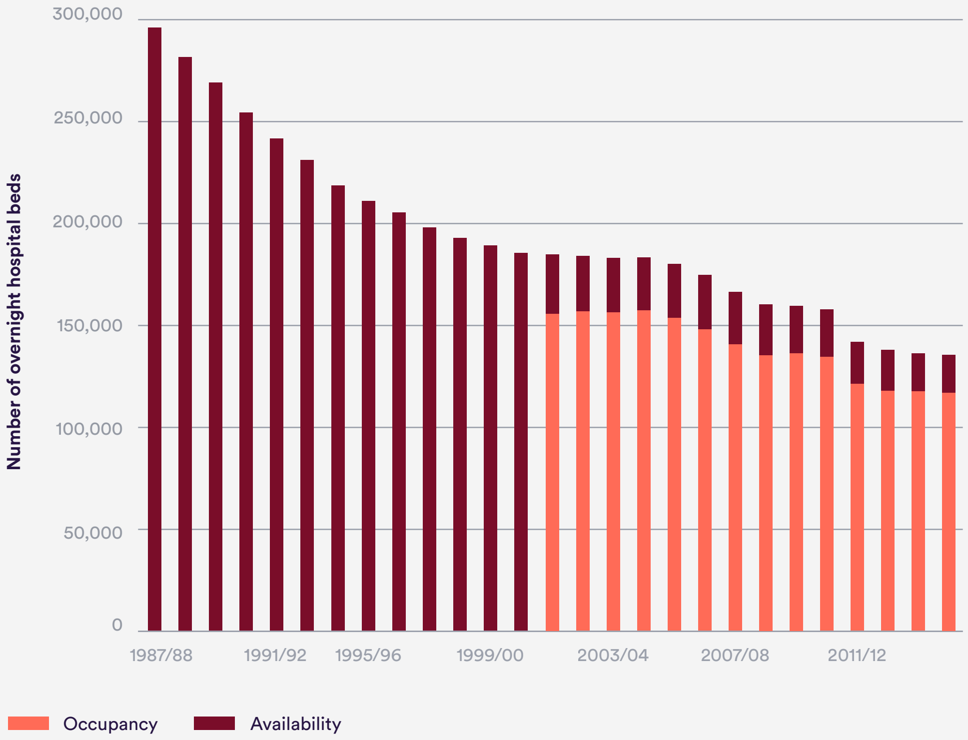
Trends in use of A&E, and the significant increase in attendances in 2014 following the introduction of minor injury and specialist services, highlight an important consequence of the initiatives described in this section: supply-induced demand. Many of these initiatives have increased contacts with the NHS without reducing the use of A&E. In some cases, this has increased overall costs.

6 Avoiding hospital admission and accelerating discharge

Context

Over the last 30 years the number of hospital beds has more than halved (see Figure 5), with the most significant fall being in the ten years to 1998/99.

Figure 5: Average daily number of overnight beds available and occupied in England (1987/88–2014/15)

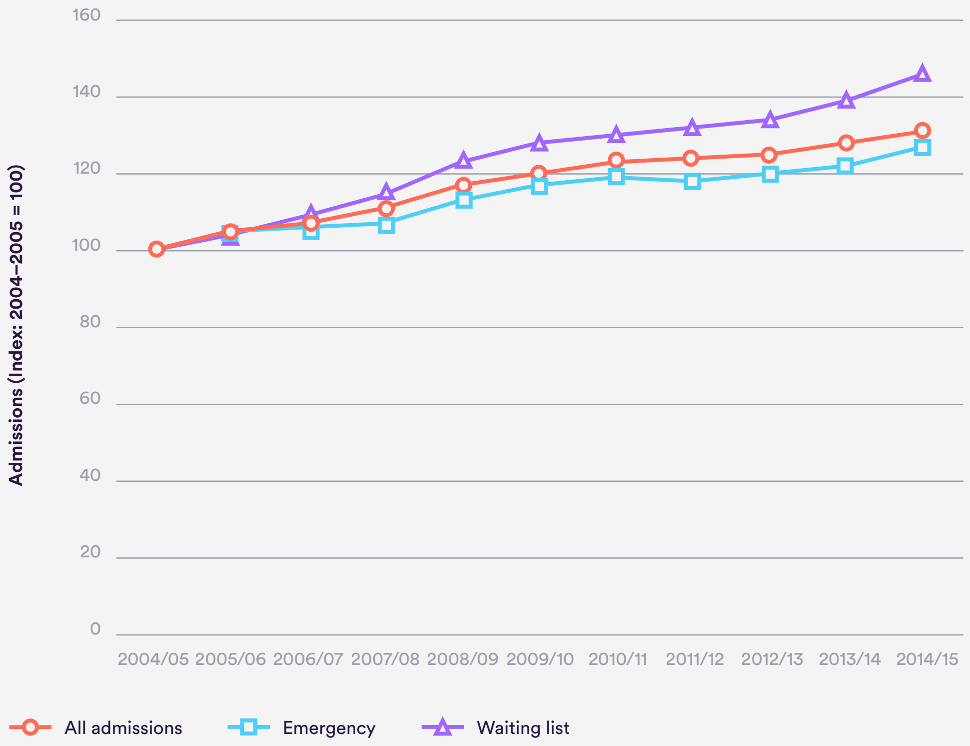


Source: NHS England, 2015

The capacity to reduce hospital beds has been driven by reductions in length of stay and the shift from inpatient care to day case and outpatient care, but at the same time hospital admissions have been rising.

Hospital mean length of stay reduced from 7.1 days in 2004/05 to five days in 2014/15, and for those aged 75 and older there has been a reduction from 14.4 to 9.1 in the same period (Health and Social Care Information Centre, 2015). Similarly, the number of finished admission episodes increased, including for both emergency and those on a waiting list (Figure 6).

Figure 6: Indexed change in the number of finished admission episodes by admission method 2004/05 to 2014/15 (indexed 2004/05 = 100)



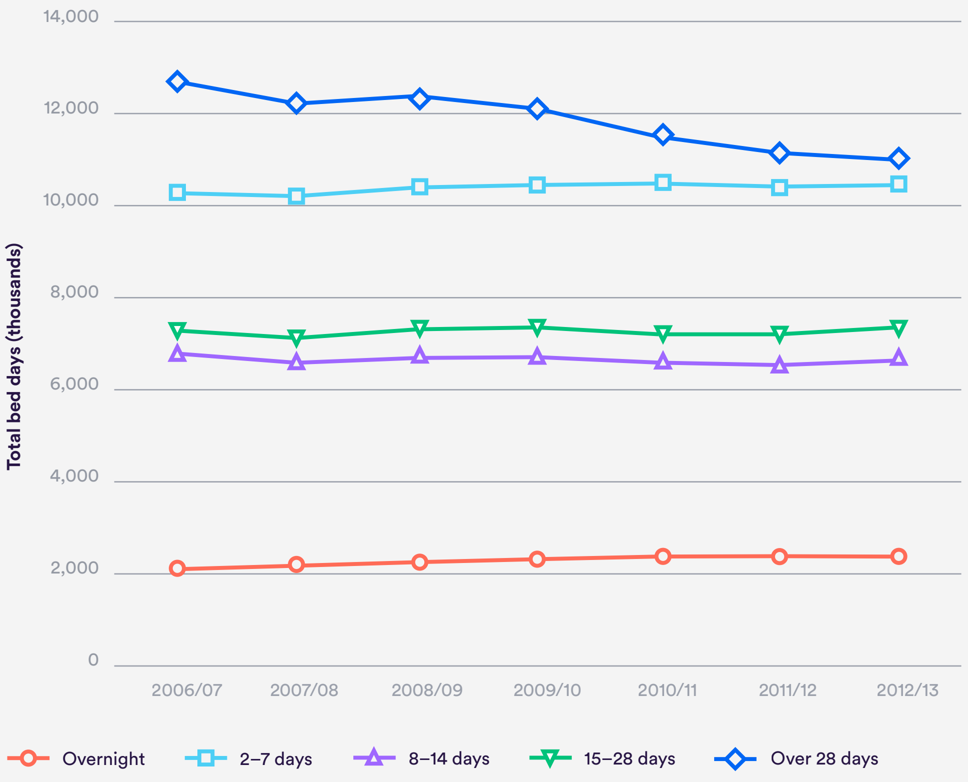
Source: HSCIC, 2015

While some of the increase in hospital admissions was driven by the expanding and ageing population, it was significantly more than population change alone would have implied, with rising rates of admission in older people (Smith and others, 2014). Analysis by the Nuffield Trust in 2014 suggested that if admission rates continue to increase, the growing and ageing population alone means that the NHS would need approximately 17,000 additional beds by 2022 (Smith and others, 2014).

Some have estimated that 29 per cent of emergency admissions are avoidable (Busby and others, 2015). However, there is evidence that this figure is contested by clinicians and patients. A recent study found that 91 per cent of patients and 100 per cent of clinicians felt that their admission was appropriate (Glasby and others, 2016).

A significant proportion of patients in hospital beds also have excess lengths of stay and could be looked after in an alternative setting. As Figure 7 shows, a significant proportion of patients stay in hospital more than 28 days, frequently long after active treatment has been completed. The majority of these are aged over 65; the average length of stay for those over 65 is three times longer than those under 65 (Imison and others, 2012).

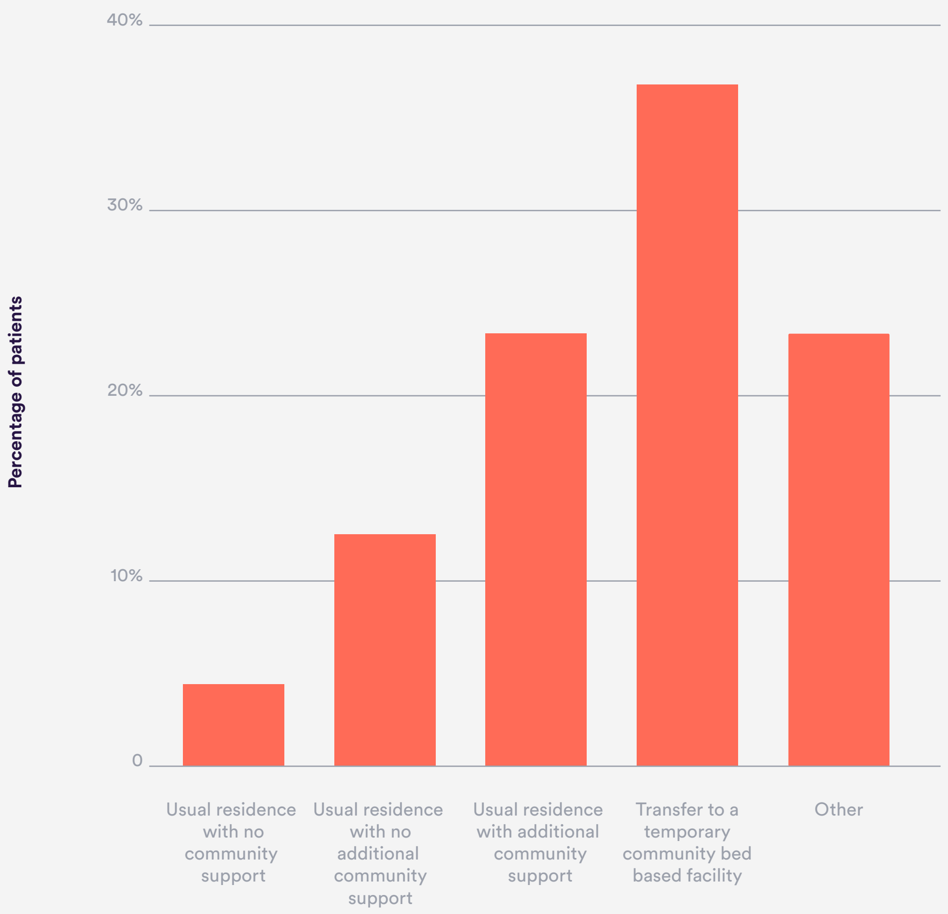
Figure 7: Number of bed days split by length of stay in hospital



Source: Smith and others, 2014

It has been estimated that up to 50 per cent of bed days in acute hospital, typically in the adult general medicine, elderly medicine, general surgery and trauma, and orthopaedics wards, could theoretically take place in other settings. However, this is an upper limit; many bed days identified cannot be avoided, for example due to the time at which the patients present in hospital or due to lack of available alternatives. Of the 50 per cent of patients who could be treated in alternative settings, as Figure 8 shows, around 80 per cent of bed days are for patients who could, in principle, be treated more appropriately in other services such as intermediate care, rehabilitation and reablement, district nursing, social care or mental health.

Figure 8: Patients in hospital who could be treated in alternative settings



Source: Monitor, 2015

Overview of initiatives

This section reviews a range of time-limited initiatives aimed at avoiding hospital admission or facilitating discharge. These include:

- condition-specific rehabilitation
- rapid access clinics for urgent specialist assessment
- senior assessment in A&E
- intermediate care – rapid response services
- intermediate care – bed-based services
- Hospital at Home.

Condition-specific rehabilitation

Active rehabilitation involves the restoration of an individual's function and/or role, both mentally and physically. Treatment can include exercise and patient education, and tends to be provided by a multidisciplinary team (NHS Improving Quality, 2015).

Pulmonary and cardiac rehabilitation have strong evidence showing they reduce hospital admissions (Anderson and others, 2016; Bolton and others, 2013; Centre for Policy on Ageing, 2014a; Dalal and others, 2015). Pulmonary rehabilitation for patients with lung conditions, especially COPD, improves quality of life, but also reduces hospital admissions and is cost effective (Bolton and others, 2013; Centre for Policy on Ageing, 2014a; Puhan and others, 2011). A Cochrane review involving nine trials found this initiative significantly reduced the odds of hospital admission by 78 per cent and the number needed to treat was four, over 25 weeks (Puhan and others, 2011). Cardiac rehabilitation is targeted at patients with diagnosed heart disease and Cochrane reviews have demonstrated that it is successful in reducing the risk of hospital admission for patients with coronary heart disease and heart failure (Anderson and others, 2016; Sagar and others, 2015). For example, the risk of overall hospitalisation was reduced by 25 per cent for patients with heart failure taking part in exercise-based cardio-rehabilitation (Sagar and others, 2015). However, further high-quality studies are needed to investigate cost effectiveness.

Results for stroke rehabilitation are variable (Pollock and others, 2014; Teasell and others, 2016). Rehabilitation focusing on fall prevention, hip fractures and older people in general do not affect hospital admission (Handoll and others, 2009; Miani and others, 2014).

Box 6: Pulmonary rehabilitation support for elective lung surgery, Heart of England NHS Foundation Trust

A multidisciplinary fitness programme for elective lung surgery patients was developed. It included: a nutritional assessment; pulmonary rehabilitation exercise programme; smoking cessation advice; and support and patient self-management education. Some aspects were delivered before the surgery and some after. A feasibility study was conducted to compare this model with standard care. Impact included:

- post-operative pulmonary complication rate was lower for the initiative group (9 per cent vs 16 per cent)
- readmission was lower in the initiative group (5 per cent vs 14 per cent)
- total cost of the initiative group per patient was £244 cheaper than the non-initiative group.

Developing clear and simple pathways, auditing outcomes, and engaging with different teams of staff when designing the pathway, were seen as key to the success.

Source: Bradley and others, 2013

Implementation challenges and issues

Uptake and completion of rehabilitation is affected by factors such as socioeconomic status (Dalal and others, 2015; Steiner and others, 2017). Initiatives designed to tackle this will improve completion of rehabilitation in such under-represented groups. For example, inviting patients who are still in hospital after a recent diagnosis (Dalal and others, 2015), and establishing a single point of referral for rehabilitation referrals in the community to make it easier for care referrers to refer patients with different rehabilitation requirements (NHS Improving Quality, 2015). Furthermore, allowing patients to self-refer initially or back into a service can lead to greater empowerment and an increased confidence in the service (NHS Improving Quality, 2015).

Sources of further evidence and information

- Puhan MA, Gimeno-Santos E, Scharplatz M and others (2011) *Pulmonary rehabilitation following exacerbations of chronic obstructive pulmonary disease*
- Sagar VA, Davies EJ, Briscoe S and others (2015) *Exercise-based rehabilitation for heart failure: systematic review and meta-analysis*
- Anderson L, Thompson DR, Oldridge N and others (2016) *Exercise-based cardiac rehabilitation for coronary heart disease*

Rapid access clinics for urgent specialist assessment

Rapid access clinics enable patients to see a specialist quickly, usually within two weeks of referral. Patients are usually referred by their GP, but they may also be referred by a consultant, nurse or via A&E. Some, known as 'one-stop shops', provide clinical assessment, diagnostic testing and treatment within a single visit. The rationale is to provide timely care to avoid crises and reduce hospital admissions. Rapid access clinics exist for a number of conditions, including diabetes, chest pain, heart failure, gynaecological issues, COPD and other respiratory complaints. There is very little robust evidence on the impact of rapid access clinics. RCTs are generally lacking and much of the evidence comes from small observational studies. Nevertheless, evidence is generally positive.

There is evidence that rapid access chest pain clinics (McManus and others, 2002) and rapid access heart failure clinics can reduce hospitalisations (Yuyun and others, 2016). Other work has estimated avoided admissions based on what would have happened had a clinic not been available for a range of conditions. While based on small numbers, these studies have consistently found reductions in admissions (Bosch and others, 2011; Dougan and others, 2001; Newlyn and others, 2016).

Although robust economic evaluations are lacking, several studies have estimated cost savings, largely based on admission avoidance (Dougan and others, 2001; Newlyn and others, 2016). In general though, more robust economic evaluations are needed, particularly to take the possibility of supply-induced demand into account.

Box 7: Rapid access chest pain clinics in Chorley and Preston

Chest pain clinics have been established across the country in response to the National Service Framework for Coronary Heart Disease – part of which states that those who develop symptoms of angina should be seen by a specialist within two weeks.

In 2001 two such clinics were established in central Lancashire. An evaluation of the two clinics found savings of £6,666 for Chorley, based on 767 patients, and £91,643 for Preston, based on 1,324 patients.

Source: Rajpura and others, 2007

Implementation challenges and issues

Although evidence suggests GP referrals to rapid access clinics are generally appropriate, it is important to ensure referral criteria are firmly agreed upon and there is clear, simple guidance for those referring. There should also be standardised diagnostic protocols and guidelines to avoid unnecessary testing (Bosch and others, 2011).

It is important to carefully consider patient pathways into and out of the clinic. This affects the way they are used and how useful they are. For example, evidence suggests an immediate access clinic may have the greatest impact on reducing unnecessary admissions for suspected heart attacks (Roland and others, 2006). Similarly, where patients need follow up in an outpatient setting, long waiting times can undo the good work of the rapid access clinic, so ensuring there are suitable pathways out of the clinic is equally important.

Some clinics have experienced difficulties seeing patients within two weeks as demand increases. It is essential to ensure these clinics have the capacity to meet demand, otherwise they are not fulfilling their purpose as a rapid access clinic.

Finally, strong clinical leadership is essential. One clinic found the service was more efficient when led by a consultant rather than a registrar (Healthy London Partnership).

Sources of further evidence and information

- McManus RJ, Mant J, Davies MK and others (2002) *A systematic review of the evidence for rapid access chest pain clinics*
- NICE evidence search: Rapid access chest pain clinics.
- Newlyn N, McGrath RT and Fulcher GR (2016) *Evaluation of the performance and outcomes for the first year of a diabetes rapid access clinic*

Senior assessment in A&E, including support from a multidisciplinary team

Traditionally, in A&E, patients are triaged by a nurse and then seen by junior doctors before accessing senior decision-makers (middle-grade doctors and consultants). This can create delays and increase costs (Health Foundation, 2013). Early engagement by a senior decision-maker aims to avoid this and, on the basis of limited data from English hospitals, could reduce hospital admissions by between 12 and 25 per cent (The College of Emergency Medicine, 2010).

Models cited in the literature that cover senior assessment in A&E include:

- Rapid assessment models: involves a team including a senior doctor and aims to create rapid and appropriate decision-making. This can be for ‘majors’ and ‘non-urgent’ patients (Bullard and others, 2012; NHS Interim Management and Support, 2012).

- Triage liaison physicians: senior doctors are involved in triage and therefore aim to identify emergencies and initiate diagnostics and treatment as early as possible (Abdulwahid and others, 2016).

- A multidisciplinary team approach involving senior nurses and middle-grade doctors, led by a consultant.

These models have been shown to have a number of benefits, though the evidence base needs strengthening. However, the examples that exist suggest three points: greater use of seniors could reduce the number of emergency admissions (Centre for Policy on Ageing, 2014b; Pinkney and others, 2016; Purdy, 2010; The College of Emergency Medicine, 2010); senior clinical oversight of the department improves flow and reduces waiting times in A&E (Abdulwahid and others, 2016; Pinkney and others, 2016; Rowe and others, 2011); and reducing time in A&E for low-acuity patients frees resources for patients with more urgent and serious problems, and benefits are seen for every patient in A&E (Porter and others, 2014). There is little evidence demonstrating the cost benefit of this initiative, and consultant staff are expensive. However, it is thought senior doctors in A&E lead to more efficient use of resources and diagnostics (Academy of Medical Royal Colleges, 2012).

Sources of further evidence and information

- Abdulwahid MA, Booth A, Kuczawski M and Mason S (2016) *The impact of senior doctor assessment and triage on emergency department performance measures: Systematic review and meta-analysis of comparative studies*

- Centre for Policy on Ageing (2014) *Early Review by a Senior Clinician in Accident and Emergency*

- Health Select Committee report (2016) *Winter Pressure in Accident and Emergency Departments*

Intermediate care: rapid response services

The aim of rapid response services is to quickly assess, treat and support patients who are at risk of hospital admission in their own home, avoiding unwarranted hospital and residential care admissions (NHS Evidence, 2012). This initiative is an example of intermediate care and includes a multidisciplinary team that responds to health and social crises in the community.

The evidence on the impact of rapid response services on hospital admissions is mixed (Barber and Wallace, 2012; Islam and West Leicestershire CCG, 2014; NHS Evidence, 2012; Purdy, 2010; Steventon and others, 2011; Woodward and Proctor, 2016). There are positive examples in the NHS, including: Guy's & St Thomas' and King's Hospitals Rapid Response Service, where there has been a 4 per cent reduction in A&E attendances (Woodward and Proctor, 2016); and Bristol's Care Services Efficiency Delivery Programme, where in 2008/09 a net saving of £3.6 million was seen by the primary care trust and £0.7 million seen by the local authority (NHS Evidence, 2012). However, an evaluation carried out by the Nuffield Trust did not find evidence of a reduction in emergency hospital admissions following the implementation of a rapid response team (Steventon and others, 2011).

There are certain criteria that need to be in place if rapid response services are more likely to be successful. These include: short response times, effective team working and direct links to health and social care services for onward referral (Islam and West Leicestershire CCG, 2014; Woodward and Proctor, 2016). Most referrals are from primary care, but they can come from other sources such as social care, so having clear acceptance criteria and a single point of access with established links between services is important (Woodward and Proctor, 2016).

Sources of further evidence and information

- Woodward M and Proctor N (2016) *Avoiding A&E through Rapid Response teams and See and Treat Models*
- Islam and West Leicestershire CCG (2014) *Evidence-based review: Rapid assessment community service and the prevention of emergency admissions for older people*
- Steventon A, Bardsley M, Billings J, Georghiou T and Lewis GH (2011) *An evaluation of the impact of community based initiatives on hospital use*

Intermediate care: bed-based services

Intermediate care is intended to prevent avoidable admissions to hospital and care homes by supporting patients to live independently (National Institute for Health and Care Excellence, 2016). Bed-based intermediate care can be delivered in community hospitals, nurse-led hospitals and day hospitals. Comparing results and drawing generalisations are difficult as intermediate care varies widely in terms of implementation and modelling (Allen and Glasby, 2010).

Overall, evidence suggests that bed-based intermediate care does not reduce admissions or readmissions (Allen and Glasby, 2010; Ariss and others, 2015; British Geriatric Society, 2008; Ham, 2006; Islam and West Leicestershire CCG, 2014; Purdy, 2010). However, one Cochrane systematic review of nurse-led units found early readmissions reduced by approximately 50 per cent, compared with usual care; but there was a near significant increase in inpatient stay (Griffiths and others, 2007). Some evidence suggests that bed-based intermediate care reduces the risk of admission to long-term care for older people (Ariss and others, 2015). Cost data is similarly mixed: cost of care per patient has been found to vary widely from £3,318 to £11,511 (Ariss and others, 2015). Day hospitals and nurse-led units have been found to be more expensive than usual care, but community hospitals have the potential to be cost effective (Forster and others, 1999; Griffiths and others, 2007; Islam and West Leicestershire CCG, 2014).

Sources of further evidence and information

- Ariss S and others (2015) *Secondary analysis and literature review of community rehabilitation and intermediate care: an information resource*
- Griffiths PD and others (2007) *Effectiveness of intermediate care in nursing-led in-patient units*

Hospital at Home

Hospital at Home is a service that provides time-limited active treatment by health care professionals in a patient's home as an alternative to inpatient care. It can be used as admission avoidance or as early discharge. Hospital at Home schemes aim to cut costs and relieve pressure on hospital beds by avoiding an admission or reducing length of stay (Shepperd and others, 2016). Care is generally multidisciplinary and can include nurse-led personal care and technical services, such as intravenous services (Shepperd and others, 2009a). The service varies by context. Some focus on specific conditions or population groups. For example, they frequently target older people who have had a medical event such as a stroke, or a long-term condition such as COPD, and who are clinically stable and do not require diagnostic or specialist input (Purdy, 2010).

There is a limited and mixed evidence base for Hospital at Home schemes, although new evidence has emerged in recent years. The service appears to hold most potential when it focuses on admission avoidance rather than early discharge, although the evidence for both is mixed and varies according to condition. Many papers are based on small numbers of patients and few present a full economic evaluation. Systematic reviews found that, when compared with inpatient care, both Hospital at Home admission avoidance (Shepperd and others, 2016) and early discharge (Shepperd and others, 2009b) schemes make little or no difference to patient outcomes (e.g. mortality and functional ability), but offer higher patient satisfaction ratings. Admission avoidance Hospital at Home schemes have variable impact on length of stay, ranging from a reduction of eight days to an increase of 15 days, and readmission rates were not significantly different from inpatient care groups.

However, those cared for in the scheme tended to have higher satisfaction levels than those cared for in hospital (Shepperd and others, 2016). In contrast, a recent meta analysis concluded that Hospital at Home services can reduce readmissions and lower costs (Caplan and others, 2012). It may be that certain conditions are more amenable to intensive treatment at home (Ticona and Schulman, 2016). Hospital at Home may be less expensive than hospital care where informal care costs are excluded, or where existing hospital costs are high, although the cost estimates in studies varied, largely because schemes differed in scope.

Sources of further evidence and information

- Shepperd S, Doll H, Angus RM and others (2009a) *Avoiding hospital admission through provision of hospital care at home: a systematic review and meta-analysis of individual patient data*
- Shepperd S, Doll H, Broad J and others (2009b) *Hospital at Home early discharge*
- Ticona L and Schulman KA (2016) *Extreme home makeover – the role of intensive home health care*

Conclusion

Relative strength of evidence of reduction in activity and whole-system costs	Initiative
Most positive evidence	• Condition-specific rehabilitation
Emerging positive evidence	• Senior assessment in A&E • Rapid access clinics for urgent specialist assessment
Mixed evidence, particularly on overall cost reduction	• Intermediate care: rapid response services • Intermediate care: bed-based services • Hospital at Home

Over the last 30 years, the number of hospital beds has more than halved. However, at the same time, hospital admissions have been rising, particularly for older people. Bed reductions have been possible because of a reduction in length of stay and a shift from inpatient to day care and outpatient care. Despite these bed reductions, it is estimated that up to 50 per cent of beds are occupied by people who could be cared for in community settings (Purdy and others, 2012).

Of the evidence reviewed, the most positive is for condition-specific rehabilitation. Pulmonary and cardiac rehabilitation improve quality of life, but also reduce hospital admissions and have been shown to be cost effective. There is emerging positive evidence for rapid access clinics and senior decision-makers in A&E, but further research is needed, particularly around their economic impact.

Evaluation of rapid response teams and the use of intermediate care beds have had much more mixed results, suggesting that local implementation and context play a large part in their success. Clear referral criteria and good integrated working across health and social care appear important. Hospital at Home schemes successfully provide a safe alternative to hospital, but there is little evidence that they deliver net savings.

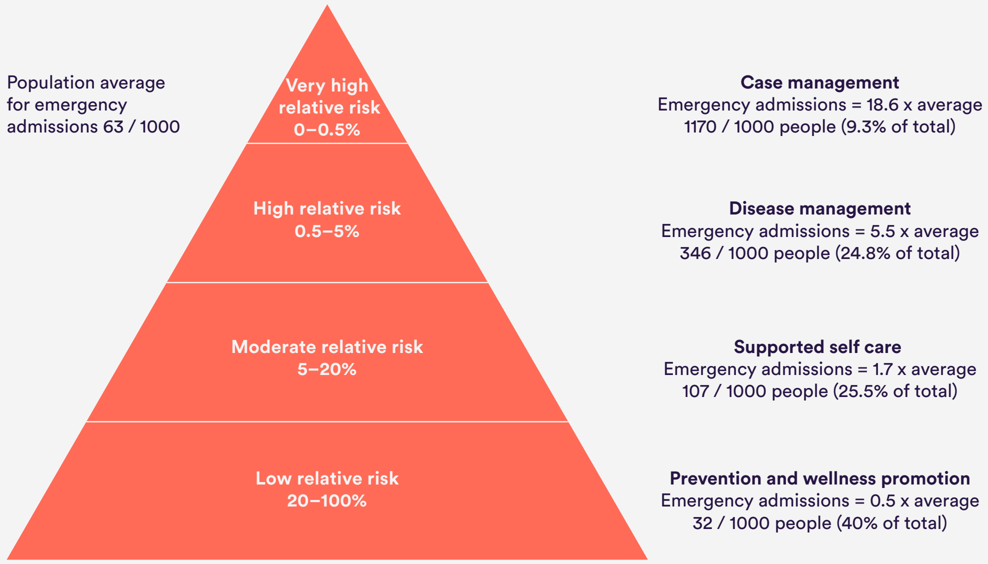
Absence of evidence is not necessarily a sign that a particular initiative would not work if introduced in an appropriate context. What is clear is that to avoid hospital admissions and accelerate discharges, there must be sufficient capacity and funding of alternative forms of care in the community. Without this investment, analysis suggests that the NHS will need to expand not contract its bed capacity (Smith and others, 2014).

7 Managing ‘at risk’ populations

Context

A key assumption behind the STPs is that more proactive care for some groups of people, particularly those with long-term conditions and older people, will reduce the use of hospital services, particularly the number of emergency admissions to hospital. The logic underpinning initiatives that target those most ‘at risk’ of needing high-cost hospital care is well known: a small proportion of the population accounts for a high proportion of health and social care resources.

Figure 9: Rates of emergency hospital admission by different risk patients



Source: Roland and Abel, 2012

As people age, their chance of developing one or more long-term condition increases, resulting in rising complexity. Lifestyle factors are also fuelling the rise in long-term conditions among younger people. Without early intervention, these cohorts are at increasing risk of unplanned hospital admission.

The number of people close to death is also expected to grow. The general trend has been for the number of deaths per year to fall; this was the case during the period 1976 to 2014, but it now appears to be rising (ONS, 2016a). The number of deaths rose by 5.7 per cent in 2015 compared with 2014 (ONS, 2016b). Over the next 15–20 years the number of deaths is projected to increase from 2.9 million in 2014–19 (an average of 580,000 per year) to 3.4 million in 2034–39 (an average of 680,000 per year) (ONS, 2015).

Overview of initiatives

Initiatives to reduce the risk of emergency admission within these groups are many and varied, but all have integrated care at their core. By providing more joined-up care, the ambition is to reduce fragmentation and duplication of health care that is too often a feature of care for this group and which can lead to costly and inefficient services, poor patient outcomes, and wasted resources. Integrated care can take place at many levels – the focus in this section is at the level of the individual. The effectiveness of programmes aimed at integrating care at a system level have been assessed elsewhere (e.g. Bardsley and others, 2013; Curry and Ham, 2010; RAND, 2012; Wolfe and others, 2016).

Below we present the evidence for the following initiatives:

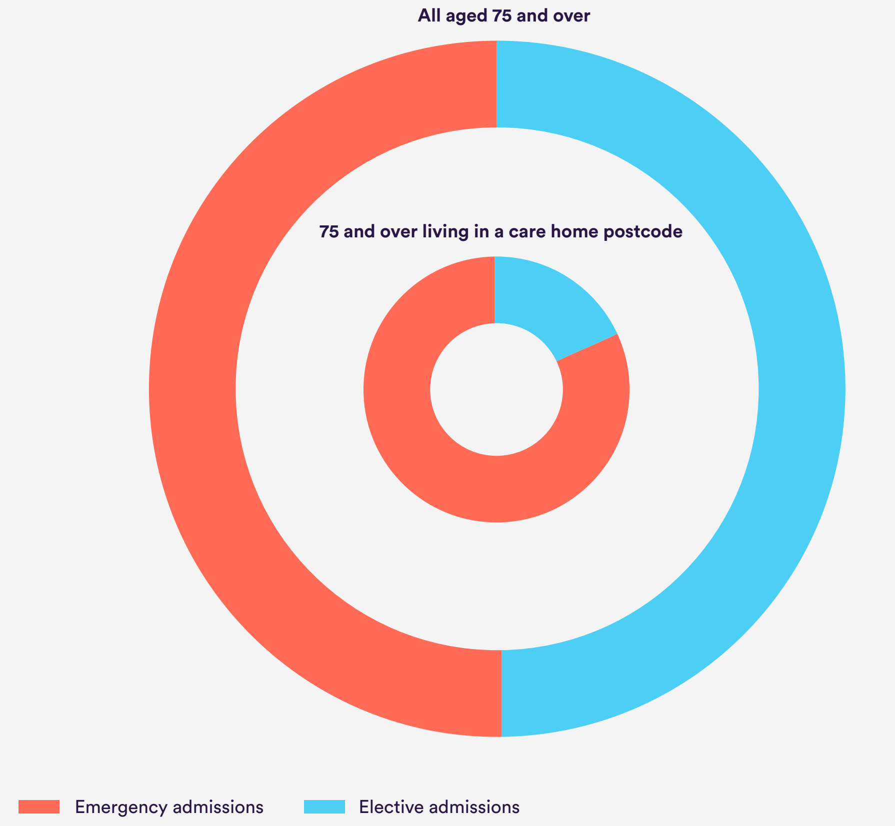
- providing additional clinical support to people within nursing and residential homes
- improved end-of-life care in the community
- the extensivist model of care for high risk patients
- remote monitoring of people with certain long-term conditions
- case management and care coordination for ‘at risk’ populations
- virtual ward – home-based multidisciplinary care based on the idea of a hospital ward.

Additional clinical support to people in nursing and residential care homes

Care homes in England and Wales support nearly 400,000 older adults who often have co-morbidities, limited mobility and dementia, and who are at high risk of being inappropriately admitted to hospital (Alzheimer's Society, 2013; British Geriatric Society, 2011; Glendinning and others, 2002; Moore and Hanratty, 2013).

The number of emergency admissions and A&E attendances among people living in care homes could be as high as double the rate of the general population aged 75 and over (data limitations mean that it is only possible to estimate this figure) (Smith and others, 2015; see Figure 10).

Figure 10: Breakdown of elective and emergency hospital admissions for patients aged 75 and over in 2011/12



Source: QualityWatch, 2015

As highlighted earlier, there is a 92.7-fold variation in rate of admission to hospital for people aged 75 years and over from nursing home or residential care home settings. Initiatives to improve care for this small but resource-intensive group of patients have the potential to make financial savings through reductions in the use of unplanned services and lower prescription costs. Schemes are many and varied, but examples include: clinical and pharmaceutical input (e.g. frequent referral and medicine reviews, and 24/7 access to a nursing and physiotherapy team); improved training for care staff; improved access to specialist support; and better use of technology. For example, care homes across Bradford, Airedale, Wharfedale, Craven and East Lancashire have immediate access to a ‘hub’ of senior nurses via a secure video link. The nurses are able to monitor people on screen and make decisions about treatment – potentially avoiding unnecessary hospital admissions.

A systematic review of initiatives designed to improve integration between care homes and health services found that various schemes had improved residents’ health status and quality of life (Davies and others, 2011). For example, in one initiative where nurse practitioners were made available to care homes to supplement the primary care provided by GPs, there was a significant fall in mortality rates and mixed evidence on reductions in preventable hospital admissions (Davies and others, 2011). The only economic evaluation included in the systematic review looked at an initiative that provided care homes with a dedicated nursing and physiotherapy service and extra training for care staff. The evaluation found savings as a result of reduced hospital admissions, early discharges and illness recognition, meaning that overall the introduction of the team was ‘at least cost neutral’ (Davies and others, 2011).

Almost 70 per cent of care home residents experience at least one medication error a day (Alldred and others, 2009). Evaluations of initiatives have shown demonstrable improvements to the appropriateness of prescribing, but the wider impact is less clear. A systematic review found that only one in 12 studies saw a reduction in length of stay in hospital and one other showed a slower decline in quality of life (Alldred and others, 2016). A review of initiatives to improve polypharmacy for older people was unable to demonstrate consistent improvements in clinical outcomes (Patterson and others, 2012).

A review by the Social Care Institute for Excellence found some evidence, albeit of variable quality, to suggest that extended GP services could lead to reductions in emergency hospital admissions, fewer deaths in hospital, reduced A&E attendances, reduced use of district nurses and reductions in prescription costs (Goldman, 2013).

Box 8: Care home GP service in the Wirral

Three GP practices in the Wirral employed a GP for six sessions a week to manage their care home population (Roche, 2014). The aim was to establish a relationship between the care homes and a single GP in order to develop a high-quality, continuous, proactive service. Support and education was also given to care home staff. Building personal relationships with the care homes was prioritised. The GP established daily telephone or face-to-face meetings, and had a weekly timetable of planned visits to care homes. Requests for unplanned visits continued as usual. After 12 months, the following results were reported: a reduction in use of A&E of 11 per cent and a 26 per cent reduction in requests for GP visits, producing estimated savings of £59,000.

Source: Roche, 2014

Implementation challenges and issues

For support to be effective, it is important that clear roles for staff are developed. Clarity over responsibilities is essential, particularly for those with roles that straddle sectors (e.g. district nurses) (Davies and Goodman Crippac, 2008). Introducing integrated working between NHS and care home staff can be met with resistance. Protecting time for staff training and offering extra support to care home managers can help with this transition (Davies and others, 2011). With regard to prescribing, the Royal Pharmaceutical Society (2014) suggests that pharmacists should have overall responsibility for medicines in care homes; that there should be one pharmacist and one GP per care home; and that pharmacists should lead patient safety and work in integrated teams. Alongside these new ways of working, it is vital to ensure that IT systems support integration and enable information-sharing between care homes and clinicians (Goldman, 2013).

Engaging and communicating with individuals and their families is also important, so that any changes to care arrangements are fully understood. For example, having one GP per care home can be a disruptive process for the individuals and families who would be required to change their GP, and this would need to be handled sensitively (Brand, 2013).

Sources of further evidence and information

- Davies SL and others (2011) *A systematic review of integrated working between care homes and health care services*
- Alldred DP, Kennedy MC, Hughes C and others (2016) *Initiatives to optimise prescribing for older people in care homes*
- Goldman R (2013) *Evidence review on partnership working between GPs, care home residents and care homes*

Improved end-of-life care in the community

As much as 10–12 per cent of total health costs is spent on care for people at the end of life (Emanuel, 1996; Polder and others, 2006), with people in their last year of life experiencing an average of 2.28 hospital admissions and 30.1 bed days in hospital (Bardsley and others, 2016).

End-of-life care provides support for people in the final months or years of their life, often by a team of professionals – generalist and specialist – in people’s homes, care homes, hospices or hospitals. Palliative care may form part of end-of-life care and provides relief from pain and other symptoms to people living with a terminal condition or with a complex condition. A major challenge is identifying those who are close to death (see, for example, Murray and others, 2005).

Palliative care for people with advanced illnesses can double their chances of dying at home,[1] reduce patient symptom burden (particularly in patients with cancer) and has been shown to reduce costs by between 18 and 35 per cent when compared with usual care (Gomes and others, 2013).[2] However, although overall total costs have been found to be lower, the evidence for cost effectiveness was varied[3] and the use of emergency hospital services in the weeks preceding death showed no statistically significant difference to those receiving usual care. It has been estimated that high-quality palliative care could result in 60,000 fewer deaths in hospital, leading to savings of £180 million (Hughes-Hallett and others, 2011). Similarly, a review by the National Audit Office estimated that if there was better access to community-based end-of-life care, £104 million could feasibly be saved from cancer patients alone as a result of fewer emergency admissions and reduced length of stay (National Audit Office, 2008). As well as economic arguments for improvements to end-of-life care, those who die at home are reportedly more likely to experience better coordinated, higher-quality care and be treated with more dignity and respect compared with those who die in hospital, according to an annual survey of bereaved family members (ONS, 2016c).

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1 Based on a systematic review that included 23 studies, covering people with a range of conditions and care that was provided in various settings (e.g. home, hospice and hospital).

2 Based on six economic evaluations. Note that only one of the studies had statistically significant results because of sample size restrictions in two others and an absence of published significance testing in the other three.

3 Two of six economic evaluations reported that the initiative was cost effective, but the other four studies were either unclear or not reported.

Box 9: Marie Curie's Nursing Service

Marie Curie's Nursing Service (MCNS) provides integrated health and social care services at home, discharge support from hospital, and access to urgent care to help manage symptoms. Their nurses and health care assistants are given specialist training on palliative and end-of-life care, and deliver support based on the individual's care plan, as previously agreed with the district nurse.

People who received the service were found to be significantly more likely to die at home (78 per cent) compared to those who received usual care (35 per cent), and were less likely to have an emergency admission at the end of life (12 per cent compared with 29 per cent) (Chitnis and others, 2012). Hospital care costs of those who received the service were £1,140 per person less than those who received usual care, as measured from the first contact with MCNS until death. However, this does not account for the cost of providing MCNS, or the cost of other health or social care services (i.e. if users required additional GP support).

Implementation challenges and issues[4]

A key issue for implementation is identifying patients who would benefit from end-of-life care. At present, around one fifth of people who could benefit from palliative care go without. Staff training and development is a vital first step to increasing the number of people offered end-of-life care (Hughes-Hallett and others, 2011). Another hindrance is that many community services run from 9-5pm. Maintaining people in their own home requires appropriate support to be available 24/7. Out-of-hours palliative care is often provided by 'generalists', rather than people who have had specialist training. The result is that individuals who contact an out-of-hours doctor are at a greater risk of being transferred to hospital at the end of life. The availability and capacity of other community services, such as district nursing and GP or specialist support to care homes, is another consideration.

[4] Based on a number of studies that reviewed barriers and enablers to palliative and end-of-life care more widely. See for example Addington-Hall and others, 2013 and Hanratty and others, 2014.

In addition to upskilling staff, it is important that staff recognise that patients and their families/carers are often the most knowledgeable care coordinators. It is therefore essential that they are involved in any discussions, particularly around points of transition. To facilitate smooth transitions between professionals and between services, IT systems need to support coordination (consider, for example, the use of Electronic Palliative Care Coordination Systems (Public Health England, 2014)).

Sources of further evidence and information

- Gomes B and others (2013) *Effectiveness and cost-effectiveness of home palliative care services for adults with advanced illness and their caregivers*
- Chitnis X and others (2012) *The impact of the Marie Curie Nursing Service on place of death and hospital use at the end of life*
- Addlington-Hall J and others (2013) *Variations in access to end of life care out of hours*

Remote monitoring of people with certain long-term conditions

Remote patient monitoring involves patients sending data to a health care professional via wireless technology or text, for example. It is most commonly used for patients with a chronic disease. Remote monitoring enables patients to monitor and understand patterns in their condition, and for professionals to intervene proactively – for example, by increasing their medication dose – offering the potential to reduce pressure on hospital and emergency services.

Remote monitoring has had a positive impact on managing a range of chronic conditions; e.g. improving glycaemic control (Bashshur and others, 2015; Wild and others, 2016) and peak expiratory flow (Paré and others, 2010), reducing blood pressure (Omboni and Guarda, 2011; McManus and others, 2010), and reducing the risk of mortality in heart failure patients (Inglis and others, 2015).

Several studies have also shown improvements in patients' quality of life (Cruz and others, 2014; Paré and others, 2010).

A recent Cochrane review showed that monitoring patients with heart failure can reduce heart-failure related hospitalisations by nearly 30 per cent (Inglis and others, 2015); and a systematic review of monitoring for COPD found a positive effect on A&E attendances and hospitalisation for any cause – with risk reductions of between 10 per cent and 63 per cent[5] for the latter (Pedone and Lelli, 2015). However, remote monitoring can increase in-person and telephone contacts in primary care (Chumbler and others, 2005; Wild and others, 2016). Impact on hospital length of stay is inconclusive (Inglis and others, 2015; Pedone and Lelli, 2015) and for some areas such as heart failure, impact on readmissions and all-cause hospitalisations is also unclear (Inglis and others, 2015).

The cost effectiveness of remote monitoring is uncertain, with costs varying according to the intensity of the initiative and the technologies used (Inglis and others, 2015). A Cochrane review reported cost savings of between 14 and 86 per cent for heart failure patients (Inglis and others, 2015). For COPD, monitoring can lead to a reduction in hospital-related and overall costs (Cruz and others, 2014). One programme monitoring diabetic patients found savings of over $2,000 per patient (Fasterholdt and others, 2016). However, other studies have found that monitoring increases costs, especially when direct costs are considered. For example, an evaluation of the Whole Systems Demonstrator project found only an 11 per cent probability of cost effectiveness (Henderson and others, 2013) and another programme found remote monitoring increased costs by over £280 per patient due to the cost of the monitoring service and increased nurse contacts (Wild and others, 2016).

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[5] Although only three studies reached statistical significance and evidence tends to be of fairly low quality.

Box 10: Hull telemonitoring service for heart failure patients

Hull's nurse-led remote monitoring and clinical triage service for heart failure patients involves patients phoning a central location, and nurses providing expert assessment and referral to the community nursing team where appropriate.

A one-year evaluation found that for every 100 patients being monitored, ten all-cause hospital admissions were averted each month. Based on a savings assumption of £2,000 per averted admission, and taking account of total service costs, researchers found a return on investment of 48 per cent.

For more information see Cruickshank and Paxman, 2013.

Implementation challenges and issues

Remote monitoring requires patients and professionals to change their approach to care. Patients need to be engaged to ensure they comply with a monitoring initiative on a long-term basis. Professionals can help to ensure engagement by sending reminders for readings at appropriate times and clearly communicating the commitment required at the start of the initiative. Given that monitoring can be costly, it is important those patients who stand to benefit the most are invited to participate. Selecting patients with the capacity for self-management is crucial, as is identifying cohorts for which the initiative is most effective, e.g. high-risk heart failure patients who have been recently discharged from an acute care setting (Kitsiou and others, 2015).

A number of things can help support professionals to work in new ways. These include: working monitoring into routine workflow; using software that provides clear data reports; establishing clear information governance and data management strategies; and integrating monitoring systems with electronic health records to avoid manual data entry.

Ultimately, both patients and professionals need to be convinced of the benefits of remote monitoring. Sharing evidence on how it can improve patient outcomes and quality of life can help.

Sources of further evidence and information

- Kitsiou S, Paré G and Jaana M (2015) *Effects of home telemonitoring initiatives on patients with chronic heart failure: an overview of systematic reviews*
- Inglis SC, Clark RA, Dierckx R and others (2015) *Structured telephone support or non-invasive telemonitoring for patients with heart failure*
- Cruz J, Brooks D and Marques A (2014) *Home telemonitoring effectiveness in COPD: a systematic review*

Extensivist model of care for high risk patients

The 'extensivist' model of care aims to overcome the discontinuity between primary and secondary care, and provide holistic care to the very highest risk population. Unlike many other integrated care models, it does not try to superimpose a coordination function onto existing care. Instead, it fundamentally redesigns care. The design of the model varies, but it usually surrounds the patient with a multidisciplinary care team, led by a clinician (the extensivist – often a GP) who retains responsibility for their patients at all times, even during hospital admission and post-discharge (Wedderburn and others, 2016). The extensivist has the skills to manage chronic and acute illnesses, and acts as the patient's advocate and care coordinator. The continuity of care offered by the multidisciplinary team offers opportunities to reduce inappropriate medicalisation and to chase up referrals and treatment when appropriate. Through care planning and operating a system of home visits, the model is intended to keep people well, avoid A&E attendances and emergency admissions, and reduce length of stay (Wedderburn and others, 2016).

The original example of this model is from the US (CareMore), although there are new examples emerging (e.g. Symphony in Dorset). Symphony is yet to produce evaluation data and a formal evaluation of CareMore is still underway, although preliminary data suggest positive impact compared with the general Medicare population, CareMore patients had a 31 per cent lower length of stay (3.7 days compared with 5.2 days); a 20 per cent lower readmission rate (14.7 per cent compared with 18.4 per cent; Powers and others, 2016); and use 63 per cent fewer bed days (Peterson and others, 2011). In terms of cost, there is no robust data available. One source suggests that the highest risk CareMore patients cost $2,250 per member per month compared with an expected $3,500 for similar risk patients in a Medicare/Medicaid model (Sinsky and Sinsky, 2015).

Sources of further evidence and information

There are no robust evaluations of extensivist models, but for more information about how they are operating, see:

- Higman J (2015) *A journey to improve the care of people with long term conditions in south Somerset*
- Sinsky C and Sinsky T (2015) *Lessons from CareMore: A stepping stone to stronger primary care of frail elderly patients*

Case management and care coordination

Case management is a process of planning, coordinating and reviewing the care of an individual (Hutt and others, 2004), involving collaboration, facilitation and advocacy ‘to meet an individual’s health needs through communication and available resources to promote quality and cost-effective outcomes’ (Purdy, 2010). Case management is usually aimed at those at high risk of admission or deterioration, in order to reduce risk of admission and to maintain an individual in their home, and to improve quality of life and health outcomes. It is usually delivered via a multidisciplinary team. Central to case management is care planning, which was introduced with the intention of improving the process of care and increasing multidisciplinary input (Burt and others, 2012).

The evidence on case management is mixed. Part of the challenge is in comparing initiatives that vary in design, scale and target group. Purdy concluded that there 'is no compelling evidence it decreases hospital admissions' (Purdy, 2010). Hudon and colleagues (2016) more recently came to a similar conclusion, finding that many studies suggest case management has the potential to reduce emergency visits, hospitalisations and cost, but that the quality of those studies is weak and that more robust trials are needed to confirm its effectiveness. However, an evaluation of a number of large-scale integrated care pilots found that those that had case management at their heart reduce outpatient attendances and elective admissions by 22 per cent and 21 per cent respectively, and resulted in a significant 9 per cent reduction in overall secondary care costs in the six months following initiative (RAND, 2012). There is stronger evidence that case management improves satisfaction and quality of life (Hudon and others, 2016; Gravelle and others, 2007).

Case management is often one component of a wider initiative, which makes it difficult to attribute any impact. For case management to be effective, it relies upon other elements such as a functional multidisciplinary team and good data sharing. It is also important to have at its core a case manager who has an ability to negotiate and advocate on behalf of patients (Ross and others, 2011).

Sources of further evidence and information

- Hudon C, Chouinard M-C, Lambert M, Dufour I, Krieg C (2016) *Effectiveness of case management interventions for frequent users of healthcare services: a scoping review*
- Hutt R, Rosen R and McCauley J (2004) *Case-managing long-term conditions: what impact does it have in the treatment of older people?*
- Ross S, Curry N and Goodwin N (2011) *Case management: what it is and how it can best be implemented*

Virtual ward – a model of home-based multidisciplinary care based on the idea of a hospital ward

A virtual ward is a model of home-based multidisciplinary care based on the idea of a hospital ward. Intended to avoid emergency admission or readmission, patients are typically identified using a risk stratification tool. The patient remains at home and is cared for via visits and phone calls. Each patient has a care plan designed on 'admission' to the ward and patients are discussed by the multidisciplinary team at regular intervals according to their risk of admission. Specialist staff may be brought in in the same way as they would be in hospital. Patients are discharged once they are no longer deemed high risk by the team, or by the risk stratification tool (Dhalla and others, 2014; Leung and others, 2015; Lewis, 2006).

The available evidence is limited and mixed, and often based on small, context-specific initiatives. An evaluation of three NHS virtual wards targeting patients at risk of admission found no reduction in emergency hospital admissions in the six months after admission to the ward, but it did find a decrease in elective admissions and outpatient attendances. There was no reduction in overall hospital costs (Lewis and others, 2013). A large RCT in Canada targeting patients at high risk of readmission found the ward did not reduce readmission or death at 30 days or 90 days after discharge. The authors concluded that a virtual ward structured in this way would be unlikely to offer an efficient use of resources (Dhalla and others, 2014). The virtual wards discussed in the literature have targeted those at very high risk of (re)admission and it is possible that little or no impact was detected because those (re)admissions were not preventable.

The success of a virtual ward depends on each component operating effectively: if effective communication, coordination and data sharing are in place across the system, and risk stratification is accurate, the initiative is more likely to be successful.

Sources of further evidence and information

- Lewis GH, Georghiou T, Steventon A and others (2013) *Impact of "virtual wards" on hospital use: a research study using propensity matched controls and a cost analysis*
- Lewis GH (2006) *Case study: Virtual wards at Croydon Primary Care Trust*
- Lewis GH (2013) *Integrating care for high-risk patients in England using the virtual ward model*

Conclusion

Relative strength of evidence of reduction in activity and whole-system costs	Initiative
Most positive evidence	• Additional clinical support to people in nursing and care homes • Improved end-of-life care in the community • Remote monitoring of people with certain long-term conditions
Emerging positive evidence	• Extensivist model of care for high risk patients
Mixed evidence, particularly on overall cost reduction	• Case management and care coordination • Virtual ward

A large number of diverse initiatives have been tried over the last two decades with the intention of better managing 'at risk' populations, but while services are highly valued by patients, very few have successfully reduced hospital activity. The strongest evidence relates to those initiatives that target well-defined groups; that is those in nursing and residential homes, and those at the end of life. There is growing evidence for initiatives that monitor people at home, particularly for some conditions such as heart failure. The extensivist model, which provides holistic care for those at greatest risk, has promising evidence from its use in the US but its benefits have yet to be demonstrated in England. The initiatives which have the greatest challenge in demonstrating impact on hospital activity, but have other positive benefits for patients and their experience, are more general attempts to case manage those deemed to be at highest risk of admission, including the use of virtual wards.

There are several reasons for this lack of impact or cost savings. First, efforts to coordinate care involve initiatives to correct underuse and ensure timely access to care. In isolation, these efforts tend to increase the use of care, at least partially negating any reductions in preventable or unnecessary care resulting from coordination. Second, for every costly complication prevented, a care coordination programme must manage multiple patients at risk of such a complication, even if it selectively targets high-risk patients. And third, care coordination is costly. The cost of staff and other resources can offset the savings from the hospital care avoided (McWilliams, 2016).

Maximising impact on hospital use requires accurately targeting initiatives at the group most likely to benefit, and for which a reduction in admission will have most impact on resource use. Risk stratification tools still struggle to identify at risk individuals at the point before they deteriorate.

Trends in life expectancy and the number of people with multi-morbidities suggest that the number of ‘at risk’ people will continue to rise, making it an even greater imperative to manage this group better. The lesson from the evidence is that significant attention needs to be paid to the accurate targeting of initiatives, while moderating expectations of their capacity to reduce overall cost.

8 Support for patients to care for themselves and access community resources

Context

There are 15 million people with long-term conditions, and over two million with multiple long-term conditions (Department of Health, 2012). As the population ages, this figure is likely to grow. At present this population accounts for 55 per cent of GPs appointments and 77 per cent of inpatient bed days (House of Commons Health Committee, 2014). The Self Care Forum estimates that individuals living with a long-term condition will spend, on average, six hours per year with a health care professional and the remaining 8,754 hours managing their health themselves. The Department of Health estimates that up to 80 per cent of people living with a long-term condition can be supported to manage their own condition (Department of Health, 2005). Equipping people with strategies and mechanisms to manage their own conditions has the potential to avert crises and reduce their use of NHS resource.

The traditional medical model treats individual physical conditions in isolation, but many people with long-term medical conditions have additional mental and social care needs. Social prescribing, which involves investing in community and voluntary groups and empowering patients, is one approach that advocates moving beyond this narrow medical model and seeks to address the needs of a person as a whole. The NHS Alliance and Primary Care Foundation estimate that 4 per cent of GP appointments could be dealt with through social prescribing or navigation (Clay and Stern, 2015).

A survey by Nesta and partners found that only 9 per cent of respondents had been given a social prescription, despite 55 per cent of them wanting their GP to offer one (Nesta, 2013).

We consider below the evidence for support for self-care and social prescribing, and their likely impact on demand and capacity to deliver savings.

Support for self-care

Self-care refers to the actions people take to stay fit and maintain good physical and mental health; meet social and psychological needs; prevent illness or accidents; care for minor ailments and long-term conditions; and maintain health and wellbeing after an acute illness or discharge from hospital (Department of Health, 2005). Support for self-care can involve education, psychological strategies, support to help adherence to treatments, practical support and social support as appropriate (Taylor and others, 2014).

Evidence suggests that self-care can have a positive impact, although it is often not clear which component makes it effective (Purdy, 2010; Taylor and others, 2014). Self-care in long-term conditions has been shown to reduce A&E attendances, in particular for adults with COPD and asthma, and possibly heart failure (National Audit Office, 2013; NHS England, 2015b; Purdy and others, 2012; Purdy, 2010). It can also improve adherence to treatment and medication (Challis, 2010). A systematic review found self-management support was associated with reductions in cost, a small significant improvement in quality of life and significant reductions in health care utilisation, with evidence being strongest for respiratory and cardiovascular disorders. This covered a number of conditions, such as respiratory, cardiovascular, mental health, arthritis and other pain conditions (Panagioti and others, 2014). Furthermore, utilising IT in the form of wearable technology and apps can have a positive impact in helping patients manage their own conditions and improve their diet, exercise and medication adherence (Castle-Clarke and Imison, 2016). More research is needed, however, to establish what works in which contexts.

The success of self-care initiatives depends on a patient's level of activation – the knowledge, skills and confidence they have in managing their own health and health care (De Silva, 2011; Hibbard and others, 2005). Highly activated patients have better clinical outcomes and more positive care experiences than passive recipients of care (Hibbard and Greene, 2013). Emerging evidence also suggests engaged patients have lower health care costs through a reduced number of costly hospital admissions (De Silva, 2011; Hibbard and Greene, 2013).

Box 11: Self-management Programme of Activity, Coping and Education (SPACE) for COPD

A controlled trial investigated if SPACE for COPD was better than usual care. SPACE includes practical advice, a home-based exercise programme and an exacerbation action plan to encourage self-management and promote health-enhancing behaviours.

SPACE for COPD did not reduce respiratory-related hospital readmissions at three months (13 vs 12 patients), but there were more admissions 30 days after discharge for respiratory causes in the usual care group (10 vs 5 patients), although this was non-significant. Those who received the initiative demonstrated improvements in quality of life, delayed time to first readmission and hospital length of stay.

In terms of cost, there was no statistical difference compared to usual care. However, compared to usual care, there was a 0.1 QALY benefit to patients' health gain that was statistically significant, calculated to be cost effective at £280 per QALY gained.

Source: Dritsaki and others, 2016

Implementation challenges and issues

Patients require tailored support to help them take responsibility for their health and care, particularly if they have a high disease burden. Recent evidence shows there is a high degree of variation in how clinicians support patient activation and self-management, with nurses being slightly more supportive of self-management than doctors and allied health professionals. Clinicians are also more likely to support patients in making lifestyle changes in accordance with clinical advice as opposed to support for making independent judgements. Training needs have been identified to help professionals support patients more effectively (NHS England, 2015b).

Programmes that aim to change patient behaviours are likely to be more successful than those that simply provide information. Where sufficiently supported and funded across the system, IT can be a useful tool in engaging patients and encouraging them to adopt more positive health behaviours (Castle-Clarke and Imison, 2016). Evidence shows that self-care initiatives, particularly those that rely on e-health or digital tools, are more successful when they are supported by professionals (Blackstock and others, 2015; In ’t Veen and others, 2014).

Patients’ level of health and digital literacy are also key factors in the success of self-care. Over 60 per cent of England’s working-age population find health materials containing both text and numbers too complex (Rowlands and others, 2014). Over 12 million people in the UK lack basic digital skills (Tinder Foundation, 2016). As noted above, a patient's level of activation and engagement plays a significant role in how successful self-care initiatives are. Tailoring support to a patient’s individual level of activation has been shown to build skills and confidence (Hibbard and Greene, 2013). The Patient Activation Measure is a validated tool to measure patient activation and can be used to help tailor services to patients, providing the appropriate level of support to individual patient need (Hibbard and Gilburt, 2014).

Finally, consideration should be given to the time over which programmes are run. Self-care campaigns over a few months may be too short to have an impact; longer campaigns with multi-channelled techniques are likely to be more successful (Rosen, 2014).

Sources of further evidence and information

- The Health Foundation (2011) *Evidence: Helping people to help themselves*
- The King's Fund (2014) *Supporting people to manage their health, an introduction to patient activation*
- Panagioti M, Richardson G, Murray E and others (2014) *Reducing Care Utilisation through Self-management Initiatives (RECURSIVE): a systematic review and meta-analysis*

Social prescribing

Social prescribing is a process of connecting patients with non-medical sources of help and support in order to improve their health and wellbeing. Social prescribing often (but not always) involves the use of a 'link worker' to connect individuals with a range of services from the voluntary and statutory sector. The scope of what is prescribed is broad (including creative arts, exercise programmes, time banks, books, museums, befriending and welfare advice). Services have been targeted at people with mental health conditions and other long-term conditions.

The evidence base underpinning social prescribing is limited, partly because the varied form, initiative, duration and target group make these highly complex initiatives to evaluate. Recent reviews have underlined that many evaluated projects have been small, and evaluation methods have typically lacked control groups and robust methodology (Thomson and others, 2015; University of York, 2015). For schemes to be successful, those referring need to be confident about the quality and sustainability of the community-based support (White and others, 2017; Whitelaw and others, 2016). In the UK, there are several larger-scale projects now underway. For example, in Rotherham, since 2012 the NHS has funded 20 voluntary sector organisations to deliver 27 types of services to people with long-term conditions referred from 35 GP practices. Before and after evaluation of those referred into scheme showed a 7 per cent fall in emergency hospital admissions and a 17 per cent reduction in A&E attendances, although no control group was used (Dayson and others, 2016).

Sources of further evidence and information

- Social Prescribing Network, hosted by the University of Westminster
  www.westminster.ac.uk/patient-outcomes-in-health-research-group/projects/social-prescribing-network
- Newcastle Gateshead Clinical Commissioning Group. Ways to Wellness programme: a large scale trial of social prescribing in the North East
  www.newcastlegatesheadccg.nhs.uk/nhs-in-newcastle-commits-1-65m-to-improve-long-term-health-conditions

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Conclusion

Relative strength of evidence of reduction in activity and whole-system costs	Initiative
Most positive evidence	• Support for self-care
Emerging positive evidence	• Social prescribing

There are 15 million people living with long-term conditions and over two million with multiple long-term conditions. Together they account for 55 per cent of GP appointments and 77 per cent of inpatient bed days. Receiving support to help people with long-term conditions manage their own health may result in reduced crisis points and less costly care. However, despite the positive evidence for self-care, there remains a lack of clarity about which elements are the most effective. Assessing the impact of social prescribing presents significant challenges as it encompasses highly diverse initiatives for a wide range of needs, and benefits go beyond reduced resource use. But the growing evidence base is positive.

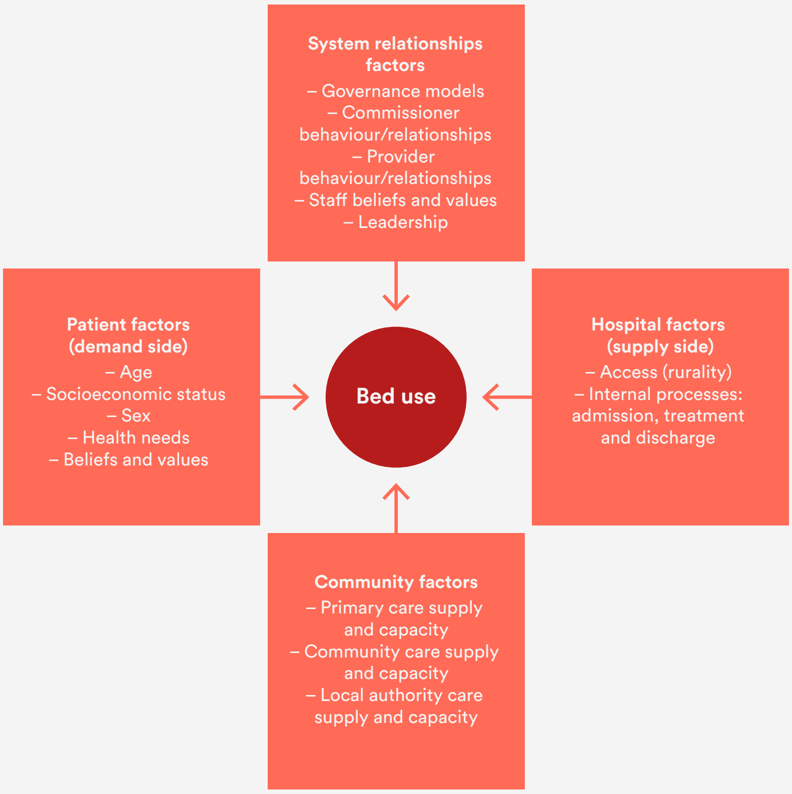
Both areas require behaviour change on the part of patients and professionals, moving from a model in which the patient is a passive recipient in the traditional medical model, to a treatment programme that is based around engagement and active participation. Self-care requires significant infrastructure and professional support to improve health and digital literacy, as well as encourage engagement. Programmes that are well-supported, funded and given sufficient time to develop are most likely to demonstrate benefits. Given the many millions of people managing one or more long-term condition, the scale of what is required to realise the full potential in this area is considerable.

9 Implementation and other challenges

Taking into account system and individual influences

Overall, the evidence for many of the initiatives is mixed. A key challenge lies in implementation. Many models require significant change in professional behaviour, including attitudes to managing risk. This, in turn, will be influenced by a wide range of organisational and individual factors (Figure 11).

Figure 11: Factors driving the rate of use of emergency beds



System relationships factors
- Governance models
- Commissioner behaviour/relationships
- Provider behaviour/relationships
- Staff beliefs and values
- Leadership

Patient factors (demand side)
- Age
- Socioeconomic status
- Sex
- Health needs
- Beliefs and values

Bed use

Hospital factors (supply side)
- Access (rurality)
- Internal processes: admission, treatment and discharge

Community factors
- Primary care supply and capacity
- Community care supply and capacity
- Local authority care supply and capacity

Source: Imison and others, 2012

The scale of the implementation challenge is significant. Considerable effort needs to be put into designing an initiative, including a rigorous framing of the problem and the contextual factors that could impact on the feasibility and effectiveness of an initiative (Marshall and others, 2016). Finding ways to modify and ameliorate the effects of system and individual influences is critical to an initiative's success (Simmonds and others, 2012).

Capacity in primary, community and social care

Many schemes place added burden and responsibility on GPs, and rely on GPs doing more than they ever have before. Taking on the oversight of nursing and care homes alone is taking on a bed base that is many times that of within hospitals. A necessary precursor for much of what we have discussed is an enhanced model of primary care with broader capabilities and significantly strengthened infrastructure. Equally important will be strong community health services with additional capacity. The challenges within social care are also significant. Given the importance of social care for many of those targeted by these initiatives, this is a major risk and potential handicap to success.

Workforce shortages

A major challenge is workforce. The NHS is trying to grow services where clinical workforce numbers have fallen and there is disinvestment in services where clinical workforce numbers have grown. For example, between 2006 and 2013 the number of consultants in hospital and community services grew by 27 per cent, while the total GP workforce rose by only 4 per cent and the number of GPs per capita fell (Dayan and others, 2014). Between 2010 and 2015, the number of district nurses reduced by 35 per cent (NHS Digital, 2016). There are large and growing gaps in the clinical workforce, particularly in the services facing some of the most acute demand pressures. A third of GP practices have a vacancy for at least one GP partner (BMA, 2016). There are vacancy levels of over 21 per cent for district nurses (Migration Advisory Committee, 2016). It is questionable whether there is the workforce – in terms of numbers, skills and behaviour – needed to deliver these initiatives.

Multi-morbidity

The complexity that stems from multi-morbidity is generally not well understood or addressed. Increasing specialisation within the health system and the development of condition-specific evidence-based guidelines has encouraged a single disease approach. While it may have driven higher quality of treatment of specific conditions, it has led to fragmentation of care. Admission avoidance schemes often target the complex population without fully getting to grips with what that complexity means. Emerging work on multi-morbidity and the burden of treatment suggests that people's capacity to cope varies considerably, and also depends on social factors rarely captured in standard datasets.

Risk stratification

Risk stratification models are frequently deficient (Wallace and others, 2014). Initiatives targeted towards 'at risk' populations need to target those most amenable to an initiative; that is, people who are not already too frail to benefit and those with the capacity and willingness to respond to initiatives such as self-management or monitoring. Models rarely use linked datasets that take into account care needs and non-hospital service utilisation, and also frequently lack data on multi-morbidity (despite being a key predictor of hospital use) (Wallace and others, 2014). As a consequence, they do not provide a complete understanding of a person's health and social care needs or service use. There is the risk of 'regression to the mean' (see page 19) as people with multiple admissions will on average have fewer admissions in the future than they had in the past (Roland and Abel, 2012). They can also make unrealistic assumptions about the potential impact of targeting those at high risk of admission. One calculation showed that the number of admissions would need to reduce by 40 per cent for the top 4.5 per cent at highest risk in order to deliver an overall 10 per cent reduction in admissions (Roland and Abel, 2012).

Delivering economic benefits

There are particular challenges in delivering economic benefits from moving care out of hospital. Reasons for this include:

- New community-based services may have lower unit costs, but if they are additional to current services, real savings will only be achieved if hospital services can reduce their staffing and costs as a consequence of activity being diverted to the new community service. The use of prices to calculate savings rather than actual costs and a tendency in modelling the costs of services to assume all the overhead or fixed costs can be fully taken out, can mean that real-world savings are significantly over-estimated.

- Initiatives often target relatively small populations – 10–50,000 people – while hospitals serve much larger populations of 300,000–500,000 or more. The hospital will only be able to release significant resource if its whole referral base is curbing hospital activity.

- There is a risk of supply-induced demand. Introducing new, more accessible and 'lower cost' services as alternatives to higher cost services may inflate demand and reduce referral thresholds.

- Care coordination programmes are costly and, without appropriate targeting, these costs can more than offset the savings from the hospital care avoided. For every costly complication prevented per patient per year, a care coordination programme must manage care for multiple patients.

- If new services serve less complex patients, they may not in fact be cheaper. Expected cost savings may purely reflect the different case mix.

- Any initiative that aims to reduce over-use is also likely to identify under-use and unmet need.

How we measure success

The challenge of demonstrating economic benefits is part of the broader issue of the way in which success is measured. While initiatives may not deliver savings, they may increase 'value' by addressing unmet need, or encouraging need to be met in ways that deliver better outcomes for people (Gray, 2016). There is also a tendency to measure the success or otherwise of an initiative in terms of its effect on emergency admissions. This is valid in that emergency admissions can be a sign of a failure in upstream care, but it is a very limited measure of success.

A recurring theme in this report and other similar reviews of evidence (Purdy and others, 2012; Roland and Abel, 2012) is the general lack of evidence about what works. Initiatives are taken forward on the back of local evaluations that lack robustness and may frequently fail to take account of wider system issues and costs (as described above). Bundles of initiatives and multifaceted programmes targeting high-risk populations are likely to be more effective than those involving single approaches (Vrijhoef and Thorlby, 2016), yet we most often implement and measure single initiatives.

One of the limitations of RCTs is that they do not capture local contextual factors that have a bearing on the success of an initiative. So, while many RCTs have not detected positive results, many small local NHS evaluations have shown several initiatives to be successful. The varying definitions and scope of these initiatives make them hard to compare and to generalise in a formal evaluation.

Finally, do we give initiatives long enough to take effect? A key feature of so-called 'transformational' change is the length of time it takes (Bohmer, 2016; Ham, 2014). Yet policy-makers frequently want instant results. The wide range of initiatives pulled together in STPs make up one of the most complex and ambitious transformational changes in the health service's history. Yet they are being given just five years to go from initial design to delivering results.

Analytical capacity

A vital facilitator of all of the above is strong analytics and shared data. This is essential if the problem is to be correctly diagnosed, solutions appropriately targeted and their impact evaluated.

10 Conclusion

The NHS, alongside many other health care systems, is attempting to better integrate services; to shift the balance of care from the hospital to the community; to move from a reactive to a proactive model of care, and in so doing deliver the 'triple aim' of health care:

- improving the patient experience of care (including quality and satisfaction)
- improving the health of populations
- reducing the per capita cost of health care.

It is attempting to do this at a time of acute financial stress, with providers and commissioners facing growing deficits.

Many of the initiatives outlined in this report have the potential to improve outcomes and patient experience. However, only a minority were able to demonstrate overall cost savings, many delivered no net savings and some were likely to increase overall costs. These findings echo the National Audit Office's conclusion that current attempts at integrating services provide no evidence that integration will save money and reduce hospital activity (National Audit Office, 2017). McWilliams' recent article in the *New England Journal of Medicine* concluded that "studies of programs or practice models designed to enhance management of care for patients with multiple conditions and multiple providers have shown minimal, if any consistent savings" (McWilliams, 2016). In the context of rising demand, the falls in hospital activity, projected in many STPs, will be extremely difficult to realise unless significant additional investment is made in out-of-hospital alternatives.

Many initiatives place additional responsibilities upon primary care at a time when primary care is struggling with rising vacancies in both medical and nursing staff, and increasing number of practices are closing. Addressing these issues is a necessary precursor to success. If STPs work towards undeliverable expectations there is a significant risk to staff morale, schemes may be stopped before they have had a chance to demonstrate success, and benefits in other outcome measures such as patient experience may be lost.

It is possible that we have yet to see the full economic benefits from shifting the balance of care because many initiatives have been too small and unsupported by wider system incentives and interventions. The initiatives may have also been underpowered and insufficiently radical, or it may be that a whole suite of changes are required to make a difference. A more radical approach to the design and scale of the models being used might be required, but this will need very careful thought and experimentation. It might also be that the metrics of reduced admission and days in hospital should be abandoned in favour of more direct measures of whether the system addressed the problem patients and their carers needed solving. It is likely that this would result in less hospital use but the focus on this and similar measures as a metric may be distorting decision-making and focusing attention away from models that might have more traction with the real issues patients and clinicians actually face.

Where schemes have been most successful, they have: targeted particular patient populations (such as those in nursing homes or the end of life); improved access to specialist expertise in the community; provided active support to patients including continuity of care; appropriately supported and trained staff; and addressed a gap in services rather than duplicating existing work.

Implementation and contextual factors are important. Considerations include: lack of capacity in the workforce across all sectors; lack of support for the necessary changes to professional behaviour, including attitudes to managing risk; using inadequate risk stratification models; poor planning; failing to address the complexity that stems from multi-morbidity; and a lack of robust data analytics.

There are a number of areas where STPs can learn from previous initiatives:

- measures should be taken to really understand patient needs and what adds value, rather than using activity as a proxy for demand
- risk stratification and linked data should be used to identify high-risk patients and avoid the 'regression to the mean' problem
- robust data and analytics to support change are essential
- staff need improvement methods that they can use, and support in implementing changes. Support from frontline managers as well as leadership from the top is vital
- a workforce strategy is needed to ensure that staff are equipped with the competences required by the new models
- a whole-system perspective needs to be taken when assessing the cost effectiveness of initiatives, including a realistic assessment of the capacity to disinvest in hospital and other services.

None of the above detracts from a significant challenge that this work poses to local and national planning assumptions. Shifting the balance of care from the hospital to the community has many advantages for patients, but is unlikely to be cheaper, certainly in the short to medium term. Any shift will also require the appropriate analytical capacity, workforce and supporting facilities in the community. Currently these are lacking. The wider problem remains: more patient-centred, efficient and appropriate models of care require more investment than is likely to be possible given the current funding envelope.

Appendix: Overview of initiatives

Relative strength of evidence of reduction in activity and whole-system costs	Initiative
Most positive evidence	• Improved GP access to specialist expertise • Ambulance/paramedic triage to the community • Condition-specific rehabilitation • Additional clinical support to people in nursing and care homes • Improved end-of-life care in the community • Remote monitoring of people with certain long-term conditions • Support for self-care
Emerging positive evidence	• Patients experiencing GP continuity of care • Extensivist model of care for high risk patients • Social prescribing • Senior assessment in A&E • Rapid access clinics for urgent specialist assessment
Mixed evidence, particularly on overall cost reduction	• Peer review and audit of GP referrals • Shared decision-making to support treatment choices • Shared care models for the management of chronic disease • Direct access to diagnostics for GPs • Intermediate care: rapid response services • Intermediate care: bed-based services • Hospital at Home • Case management and care coordination • Virtual ward
Evidence of potential to increase overall costs	• Extending GP opening hours • NHS 111 • Urgent care centres including minor injury units (not co-located with A&E) • Consultant clinics in the community • Specialist support from a GP with a special interest • Referral management centres

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