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The economics of housing and health

The role of housing associations

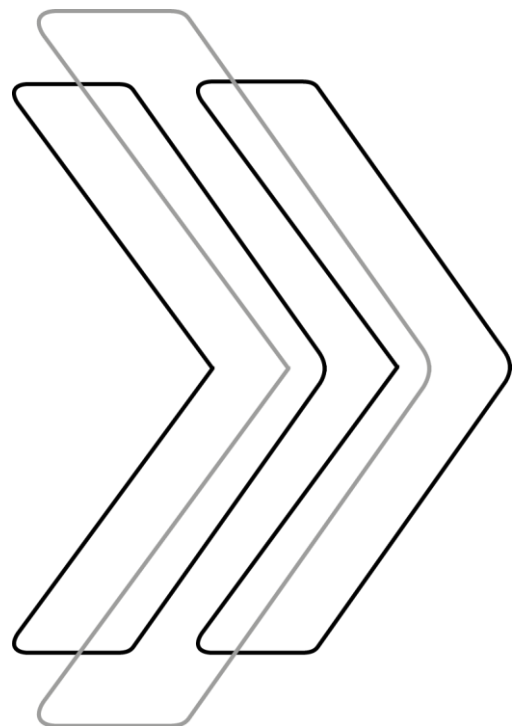
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The National Housing Federation commissioned The King's Fund and the New NHS Alliance to produce this independent report. The views contained herein are those of the authors and all conclusions are the authors' own.

This is one of three reports flowing from work commissioned by the National Housing Federation to better understand how its members 'make their case for health' – that is, how they demonstrate the value of their services to supporting health and wellbeing. This report focuses on the economic case; it demonstrates how housing associations provide a wide range of services that produce health benefits and can have positive effects by reducing demand on the NHS and in creating social value.

The second report focuses on how housing associations can develop a business case that will be better understood by the health sector. The third explores how the health and housing sectors differ in their approach, language and terminology, roles, and use of evidence. These reports will be available here: www.housing.org.uk/resource-library/browse/connecting-housing-and-health

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The National Housing Federation is the trade body for housing associations. We believe that everyone should have the home they need at a price they can afford.

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1 Introduction

There is a wide array of evidence which demonstrates that housing is critical to health across the life-course (Parliamentary Office of Science and Technology 2011). Suitable housing that is safe and warm is one of the foundations of personal wellbeing, whether in childhood or old age. It enables people to access basic services and build relationships with neighbours and other members of their community, and can facilitate interventions designed to promote and improve health. For people with complex or severe needs – including the rising number of older people – good housing can help them maintain good health and independence for longer.

The *NHS five year forward view* (NHS England *et al* 2014) set out a vision for the future of health and care based on new transformative models of care, a radical upgrade of preventive care, and stronger partnerships between the NHS and others, including local authorities, the voluntary sector, patients and local communities. It recognised that people’s health and care needs cannot be met by the NHS alone. The Forward View and the Care Act 2014 called for closer co-operation among services that support health and wellbeing; this is the context for the *Memorandum of Understanding (MoU) to support joint action on improving health through the home*, supported by NHS England, Public Health England and the National Housing Federation among many others (National Housing Federation 2015b).

This report shows how housing associations can help meet the ambitions of the Forward View, the Care Act and the MoU, and in doing so deliver economic value to the NHS. Housing associations provide 2.5 million homes for more than 5 million people who typically have greater social or health needs than the general population (National Housing Federation 2015a). Those homes are more likely to be of a ‘decent standard’¹ than in any other housing sector. This, in and of itself, has a social and economic benefit, and provides payback to the NHS.

However, housing associations provide a wide range of other services that improve health and have economic value, to the NHS and to society more broadly. Further, housing associations do not provide these services solely for their residents; many also provide services for other, often, vulnerable people, building on the expertise gained through meeting their own

¹ The ‘decent homes standard’ was introduced by the government in 2000 and updated in 2006. It is a technical standard against which homes have to: meet minimum safety standards, be in a reasonable state of repair, have reasonably modern facilities and services and have efficient heating and effective insulation. See http://england.shelter.org.uk/get_advice/repairs_and_bad_conditions/repairs_in_social_housing/the_decent_home_standard

residents' needs. The 'offer' that the housing sector brings to the health sector is therefore a wide range of expertise and support to specific population groups such as older people or those experiencing specific problems such as domestic violence.

The King's Fund and the New NHS Alliance have analysed an audit of the National Housing Federation's members and their work with the health sector (National Housing Federation 2016). One of the focus areas was the economic case for the value of housing to health. This report summarises the findings, and includes a number of case studies.

However, we must be clear at the outset on two points. First, our view is that there is no standard way to make the economic case for the contribution that housing makes to health. Those seeking a silver bullet will therefore be disappointed. The case studies show that the economic case, and the types of economic argument employed, can be made plausibly in many different ways, using different tools and sources of evidence. Some of these arguments are generated by housing associations themselves while others use information and data from other sources, often in collaboration with the academic sector. Second, this report contains a diverse range of examples, but it is not a research report so we do not analyse or assess the merits of these in depth. Our purpose is to set them out and show how housing associations are using a wide range of economic arguments *in practice* to help improve health and contribute to other NHS objectives. We are grateful to all the housing associations we have talked to for the opportunity to understand, represent and more widely share the types of economic argument they themselves have used with some success with the NHS, and others.

The rest of this report draws on a wide range of sources to show how housing associations are creating value through their role in supporting people's health. Section 2 sets out why making an economic case is important. Section 3 gives a range of examples to support the five different types of economic argument that can be made. Section 4 focuses on two areas: the case for mental health and the case for falls prevention. Section 5 summarises our findings. Appendix 1 describes the methodology used for our analysis, which includes a range of interviews, a literature review, an analysis of the National Housing Federation's audit of their members' health work, and, most importantly, a range of case studies. Appendix 2 presents some of the common tools used by the housing sector to establish the economic value of its contribution to health.

2 The importance of making the economic case

Our work for the National Housing Federation shows that health commissioners and providers, and housing associations, hold a shared perception that a strong relationship and understanding of each other's broader objectives and motivations is the most critical issue for working together successfully. We heard this from a wide range of interviewees from both sectors.

Evidence is only part of the picture and often not the first factor.

(National health policy lead and former hospital doctor)

I do not believe that health and housing working together is always about pounds and pence.

(Housing association)

Evidence is not the whole piece. We have to take account of stakeholders too.

(Clinical commissioning group manager)

Overall, evidence (including economic) is 30 per cent of the deal, relationships and context is 70 per cent.

(Housing association).

However, the economic case for the contribution that housing associations make to health is important, and is becoming increasingly so. Housing associations are well aware of this.

As money gets harder to find, return on investment and cost-benefit analysis is more important – especially when delivering added value.

(Housing association)

The CCG [clinical commissioning group] had invested a substantial sum of money in this way of working and they wanted to know, is it working?

(Housing association)

Doing economic evaluation is important for housing associations and it builds a level of respect with commissioners to show we understand their needs. It is risky... to do something different, and having evaluation data very much helps the conversation.

(Housing association)

Our experience of speaking to a wide range of health professionals and housing associations is that, in practice, the economic case for housing and health can take many forms.

We will do a big business plan beforehand with as many figures as we can get. Other organisations let themselves down, they come with a business plan that isn't adequate at all. You have to say it in the right language and put it in the same way, it has to be solving the right problem.

(GP and CCG lead)

Different techniques are used by different parts of the system so I suspect there is no common language or common metrics – QALY [quality-adjusted life year] being the closest. In NHS England, the terms most often used are 'effective' and then 'cost-effective'.

(National health policy lead, former director of public health)

There is no single correct tool or approach, but horses for courses. Need to use whole suite of evaluation techniques to their full potential (and full potential can be through combining methods).

(Housing association)

There is no one piece of economic analysis that housing associations can undertake or wield that will persuade health providers or commissioners to work with or commission them. However, our case studies illustrate how housing associations have effectively demonstrated their value, using five different economic arguments.

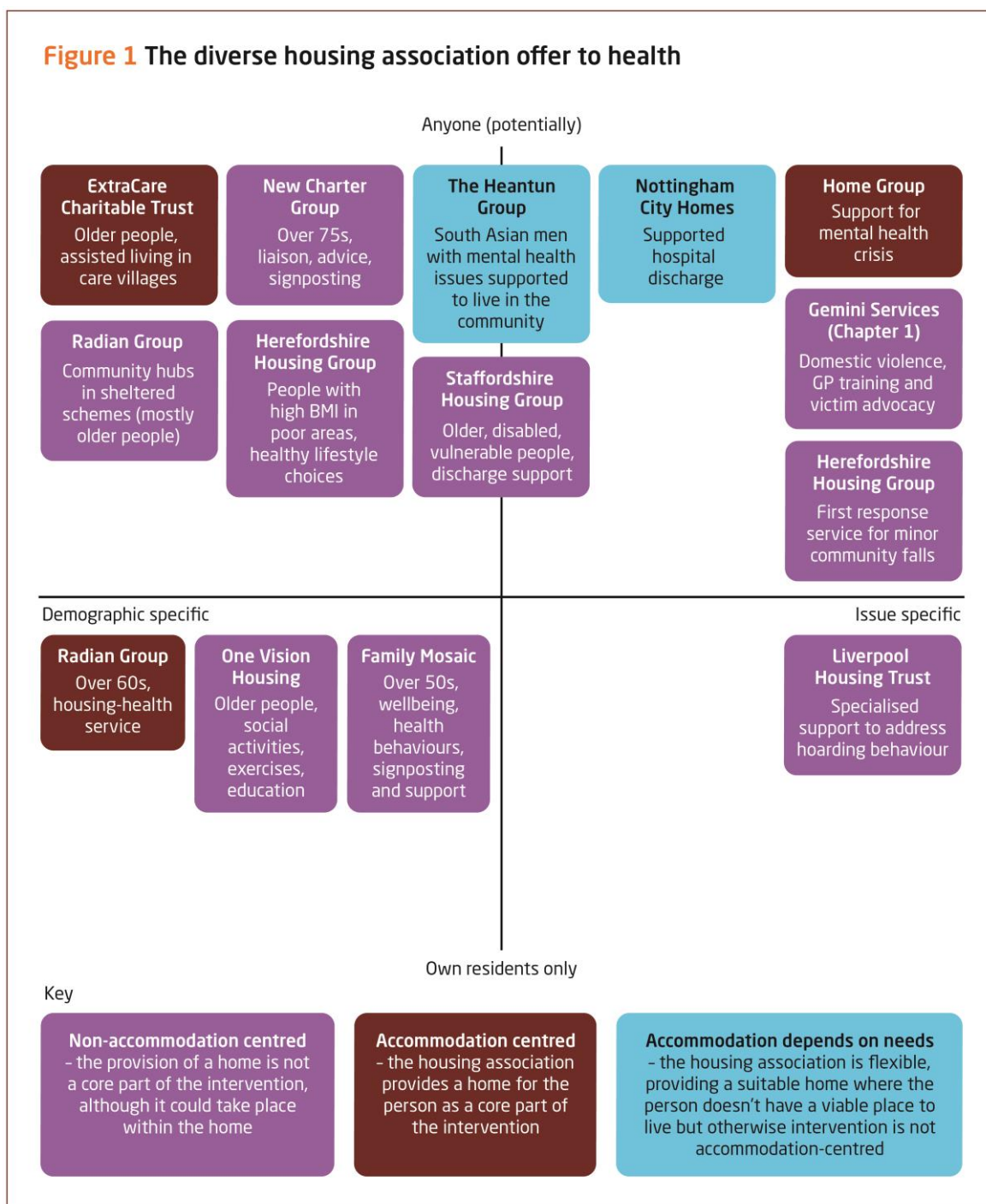
- Housing associations provide safe, decent homes that enhance wellbeing. This has health impacts that are valued, and can save the NHS money, quickly.
- Housing associations help alleviate the overall cost burden of illness and treatment.
- Housing associations can help to offset and reduce costs of delivering health care to individuals.
- Housing associations can demonstrate cost-effectiveness in helping to meet the objectives of the NHS and of improving health more broadly.
- Housing associations can demonstrate the cost-benefits of their interventions in terms of the value of improvements to people's health and savings to the NHS.

3 Five economic arguments for housing and health: case studies

Our evidence for the economic case for housing and health is drawn from a wide range of sources. Figure 1 gives examples of how housing associations provide a very diverse range of services that have value to the NHS and to health more widely. Some of these examples are discussed in the rest of this report. Others will be discussed in the two related reports.

We have set out these case studies on a spectrum. The vertical axis shows the range of people for whom housing associations provide valuable services. For their residents, these services include helping older people to stay independent for longer and to maintain a healthy lifestyle and preventing problems such as hoarding, which often have mental health issues as a root cause. But housing associations also provide services to non-residents – for example, supporting hospital discharge or offering falls prevention and response teams. The horizontal axis shows how these services can either be tailored to specific populations defined by age group or other characteristics, or focused on issues such as domestic violence, falls prevention, or support during mental health crises. The economic case for how housing supports health can be made for each of these situations. We describe the other strong arguments in the rest of this section.

Figure 1 The diverse housing association offer to health



1: Safe, decent homes and wellbeing

Housing association homes are safe, decent homes that enhance wellbeing. This has health impacts that are valued, and can save the NHS money, quickly

Housing associations provide safe and secure housing for more than five million people (National Housing Federation 2015a). Meeting basic needs for warm, safe and secure housing is an intrinsic aspect of health (Buck and Gregory 2013), and the value of these services to the health system should not be taken for granted or understated.

There has been a quiet revolution in the quality of social housing. Between 2008 and 2014, the proportion of housing stock owned by private-registered providers of social housing (which included housing associations) that was not of a decent standard fell from 10.6 per cent to 0.9 per cent (Homes and Communities Agency 2015). This quiet revolution is delivering economic benefits to the NHS and the wider health sector through improved health of residents.

High-quality social housing provided by housing associations creates social value through its impacts on health and wellbeing and reductions in use of the NHS – for example, through reducing excess cold and making safety improvements that reduce the likelihood of falls. Estimates of the costs saved vary due to different methodological approaches used. The following are examples of the kinds of savings made.

Housing association homes are good environments for wellbeing

Poor housing can mean many things. The Housing Associations' Charitable Trust looked at the impact of housing conditions on people's wellbeing, identifying seven factors that had a negative impact on people's life satisfaction: noisy neighbours, lack of gardens or outdoor space, vandalism, poor lighting, condensation, rot and damp (Fujiwara 2013). They also calculated a hypothetical amount of extra income people would need to compensate them for a given housing problem. For all seven factors combined the amount was £5,642 (with the highest amounts relating to damp and noise).

Housing association homes are safe homes

The National Institute for Health and Care Excellence (NICE) has estimated that meeting its guidelines on installing safety equipment in homes for under-15s would cost the average local authority £42,000 (National Institute for Health and Clinical Excellence 2010a). For a population of 150,000, if this prevented 10 per cent of injuries, it would save £80,000 in prevented hospital admissions and emergency visits alone (National Institute of Health and Clinical Excellence 2010b). The best-performing 10 areas participating in the Safe At Home scheme (a government initiative to help families keep their children safe from accidents in the home) saw hospital admissions of under-5s fall by 29 per cent, leading to an overall saving of

£27 million – for a total cost of £1.7 million (Royal Society for the Prevention of Accidents 2012).

Housing association homes are decent homes

Birmingham City Council's housing programme to improve its homes to Decent Homes standard was estimated to return £24 million per year to the NHS, for a total outlay of £12 million. The quickest paybacks (in terms of reduced use of the NHS) were for reducing excess cold and reducing falls among older people, which paid back within a year. Reducing damp and mould growth had a much longer payback period of 24 years (Birmingham City Council's Housing Strategy and Partnerships Team 2011).

Simply being in a housing association home – because they are very likely to be of a decent standard – offers valuable health and wellbeing benefits to residents. It is also very likely to generate cost savings for the NHS compared to non-decent housing alternatives, particularly those in the private rented sector.

2: Burden of illness and treatment

Housing associations help to alleviate the overall cost burden of illness and treatment

The economic case for the contribution housing makes to health can be based on estimates of the burden to health (measured in health terms such as the number of deaths avoided, or in the value of those deaths avoided such as the QALY (quality-adjusted life year) value (*see* section on cost–benefit analysis below for further details)), estimates of NHS costs, or both, in areas that housing associations are providing support in. Housing associations present the economic case in a number of areas.

- Poor housing costs the NHS in England between £1.4 billion and £2 billion each year due to excess cold, damp and safety issues (Nicol *et al* 2015). By providing decent and safe housing, housing associations can contribute to savings.
- Failure to fit adaptations or take other preventive measures is estimated to cost the NHS £414 million annually (Garrett *et al* 2016). Housing associations provide preventive adaptations.
- Falls cost the NHS around £2 billion annually. Housing associations that offer falls prevention services to their residents and others are likely to be helping to reduce this burden (Tian *et al* 2014).
- The total cost of dementia to the United Kingdom is £26.3 billion, £4.3 billion of which is accounted for by the NHS and £10.3 billion by social care costs. Two-thirds of these costs are incurred by people with dementia and their families, either in unpaid care or in paying for private social care (Alzheimer's Society, undated). Housing

associations can provide support to allow people with dementia to live independently and safely.

- Delayed hospital discharges cost the NHS in England £820 million annually, though the true cost is probably higher, given that treatment may be diverted to the higher-cost private sector as a means of freeing up capacity (National Audit Office 2016). Housing associations have an important role in helping patients discharged from hospital to return home quickly and safely and avoid re-admission.
- The rate of hospital admissions and accident and emergency (A&E) visits for homeless people is four times higher than for the general public. Overall use of health services by homeless people is between four and eight times that of the general population, at an excess cost of £85 million per year (Department for Communities and Local Government 2012). Provision of homes for more people will contribute to alleviating these costs.
- Domestic violence was estimated to cost the NHS £1.6 billion in 2009. Housing organisations have a key role to play in prevention (Walby 2009).

3: Offsetting costs

Housing associations can help to offset and reduce the NHS and care costs of delivering care to individuals

All housing associations work with their local NHS partners to provide services, including short- and long-stay accommodation, which help to offset the costs of NHS care for individuals. Their direct work in supporting people's wellbeing – for example, supporting behaviour change for healthier lifestyles or preventing domestic violence – helps reduce NHS demand costs. But similar results can often be achieved simply by providing warm and safe homes for residents and other people who may be vulnerable – for example, by reducing asthma and its associated NHS costs.

Home improvement services

Staffordshire Housing Group has been running the Revival Home Improvement Agency for more than 20 years, offering a range of services to help people maintain their independence (Staffordshire Housing Group 2016). They made the case to Stoke-on-Trent City Council by arguing that 'simple measures such as grab rails or hand rails prevent falls and accidents in the home which would result in loss of health and wellbeing for the individual and a significant cost to the public purse'. Below are some examples of the costs used in making the case.

- The average cost of a fall requiring A&E attendance is £2,000 (Burgess 2014).
- A fall at home leading to a hip fracture costs the state £28,665 on average – more than 100 times the cost of providing a grab rail or hand rails (Heywood and Turner 2007).
- On average, postponing entry into residential care for one year saved £28,020 (Laing 2008).
- The average annual weekly cost of a 10-hour home care package is £18,408 (Burgess 2014).
- The average cost of a delayed discharge from hospital is £1,065 (Burgess 2014).
- The average cost of a non-elective patient admission to hospital is £1,674 (Staffordshire Health and Wellbeing Board 2013).

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Preventing domestic violence

Staffordshire Housing Group has also implemented a domestic violence prevention project, through its subsidiary, Arch. Arch is a registered charity offering a range of information, advice, accommodation and support services for vulnerable and socially excluded people and families in Stoke-on-Trent, Staffordshire and Cheshire East. The aim is to reduce homelessness, tackle domestic violence, and promote social inclusion. Many individuals and families have additional and complex needs arising from mental ill health, substance abuse, offending behaviour or their status as an asylum seeker or refugee. Many also struggle with low confidence, limited skills, social isolation, debt and poverty.

Arch conducted a study to assess the impact of this programme on A&E attendances, covering all 75 patients referred to the scheme between January and June 2015 and analysing attendances in the six months pre- and post-referral. Changes in use and costs are based on all patients' A&E attendances following advice and guidance, averted serious wounding in the case of those receiving specialist support, and estimated cost reductions for those benefiting from multi-agency risk assessment conferences (MARACs)².

- There were 191 attendances (2.55 per patient) before referral to the scheme, whereas post-scheme attendances were 60 (0.8 per patient), a difference of 69 per cent; 87 per cent of patients reduced their use of A&E after referral (validated by University

² A MARAC is a multi-agency risk assessment conference where information is shared on high-risk domestic abuse cases between representatives of local police, probation, health, child protection, housing practitioners, independent advisers and other relevant specialists.

Hospitals of North Midlands NHS Trust). Given a cost per A&E attendance of £413 (calculated by London Metropolitan University for a domestic violence victim), reduced A&E costs are estimated at £54,103.

- Academic evidence suggests that specialist support could reduce serious wounding and therefore costs by 2 per cent, saving £35,106.
- Multi-agency risk assessment conferences are estimated to save £20,740.
- The overall cost saving to the NHS over six months is estimated at £109,949 (£219,898 over a year).
- The cost of delivering the project for one year (including staff training) is £76,549. It is therefore estimated to pay back £2.87 in NHS cost reductions for every £1 spent.³

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Supporting the wellbeing of older residents

The ExtraCare Charitable Trust (ECT) supports older people in 14 retirement villages and 17 housing schemes. Over time, ECT has invested in an array of analyses to build not just the economic case for its work but the broader case too, including a three-year longitudinal study with Aston University of 162 new residents versus 39 control participants (Holland *et al* 2015). This measured the impact of the ExtraCare Wellbeing Service, an informal drop-in service for preventive health care and day-to-day chronic illness support. The study revealed the following.

- After 12 months, 19 per cent of the intervention group had reverted to a ‘resilient’ state from ‘pre-frail’ at baseline. At baseline, new residents had more difficulties with cognitive function, depression and anxiety than control participants, but at three months these difficulties had reduced or even disappeared for some; after 18 months there was a general reduction in levels of depression, particularly for those with low mobility.
- Planned GP visits fell by 46 per cent among the intervention group versus no change among control participants; planned hospital admissions fell by 31 per cent versus no change among control participants. There was no difference in unplanned visits between the two groups.

³ This excludes the value of health and wellbeing to victims or of other costs averted. However, for some patients, A&E attendance rates may have been lower anyway without a referral; this was not factored into the results.

- NHS costs for the intervention group reduced by 38 per cent compared to control participants over 12 months – a saving of £1,115 per person per year.
- The cost reduction was most significant for residents who were assessed as being frail – from £3,374 to £1,588 on average per person per year.
- The cost of lower-level social care using the ExtraCare model was £1,222 less per person per year (17 per cent) than providing the same level of care in the wider community; providing higher-level social care was £4,556 cheaper per person per year (26 per cent).
- Scaling up to the ExtraCare population of 5,000, the drop-in service could save the NHS around £5.57 million per year.

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Falls response and prevention

Herefordshire Housing Limited (part of Herefordshire Housing Group) is jointly funding a falls response service with Herefordshire Clinical Commissioning Group and Hereford Council. Herefordshire Careline, a national telecare provider, supports 33,000 people nationally on a 24/7 basis, 4,000 of whom reside in the county of Herefordshire. The service is on-call and provides rapid mobile response to non-injured fallers in the adult population. The service does not provide clinical assistance, but information at the scene is forwarded to clinical teams and, with consent, the responders refer to the NHS Falls Prevention Service and GP.

Most callers are in their 70s, and most referrals are from Careline users. Average response time is 28 minutes, with 90 per cent of calls responded to within 45 minutes. Notification letters are sent to GPs on every attendance.

Herefordshire Housing has estimated savings for 865 attendances in the year to include the following.

- Prevented ambulance call-outs (at £184): £132,112.
- Prevented A&E attendances (at £87): £37,498.
- Prevented A&E admissions (at £914 per night): £149,896.
- Prevented GP attendance (at £114): £9,918.
- Prevented police attendance (at £59.65): £10,260.
- Overall, the service produces savings of £339,684.

Other impacts were not quantified, eg, the value of prevented loss of confidence and physical ability and knock-on consequences.

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Social prescribing for GP patients

South Yorkshire Housing Association has been delivering a social prescribing service in partnership with Doncaster CVS (South Yorkshire Housing Association 2016). Twenty-eight practices in north-west and central Doncaster refer patients with one or more long-term conditions for support across seven areas: managing symptoms, housing solutions, healthy lifestyles, looking after emotional wellbeing, making connections, work and volunteering, and managing money and welfare issues. The impact is being modelled, and will be evaluated over time. An evaluation of an existing social prescribing pilot in Rotherham showed reductions in NHS use, suggesting it would pay for itself in 18 months to 2 years, ignoring the wider value of benefits in terms of wellbeing improvement (Dayson and Bashir 2014). Expected outcomes are as follows.

- It will reduce the number of NHS visits required for 500 clients by 50 per cent over the course of a year.
- If sustained, this will deliver a saving of £537,760 (based on actual costs of visits to A&E, hospital, GPs and district nurses in the three months prior to referral) for an investment of £160,000 for the two pilot localities. It will need to reduce visits by 15 per cent to break even in terms of NHS costs averted.
- There may be additional savings (for health and social care) as a result of clients living independently for as long as possible.

The project is funded through a partnership approach to commissioning and contracting that includes Doncaster Council's Adults and Communities and Public Health directorates (Innovation Fund) and NHS Doncaster Clinical Commissioning Group.

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Reducing asthma in children

Nottingham City Homes (NCH), with support from Alice Jones Impact Consulting and using analysis by the World Health Organization (WHO), found that children in homes with low-quality heating systems were twice as likely to have respiratory problems (Jones *et al* 2016). Central England (which includes Nottingham) has the highest prevalence of childhood asthma, at 21 per cent. NCH residents account for 21 per cent of Nottingham's under-18s. Other findings include the following.

- NCH has replaced around 10,600 boilers benefiting 21,200 residents (28 per cent of whom are under 18). The replacement rate of boilers is twice that for other residents of a similar age in Nottingham. In homes that have had boilers replaced, the prevalence of respiratory illness has almost halved, from 2,038 to 1,039 cases.
- The National Asthma Campaign estimates that the average treatment cost for a child with asthma is £181, so NCH's improvements could have saved the local NHS £188,059.

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4: Cost-effectiveness

Housing associations can demonstrate cost-effectiveness in meeting health and NHS objectives

Cost-effectiveness analysis (CEA) is commonly used to inform strategic decisions in the NHS and wider health and care sector (Drummond *et al* 2015). It is based on an assessment of the relative costs and health effects of a course of action versus an alternative action (or range of actions), which usually include 'normal practice' or the counterfactual (what would have happened in the absence of the intervention). CEA is less common in the housing sector, although some innovative housing associations are starting to undertake CEAs and are using the results to improve their services – for example, in health and wellbeing support and domestic violence prevention. Housing associations are also using well-known health outcome measures commonly used in CEAs such as quality-adjusted life years (QALYs) (Weinstein *et al* 2009) and the Warwick-Edinburgh Mental Well-being Scale (WEMWBS) (Tennant *et al* 2007).

Health behaviours of residents and use of NHS services

Family Mosaic has assessed the cost-effectiveness of their services in a randomised controlled trial (RCT) of different levels of health and wellbeing support in residents aged over 50 (Family Mosaic 2016). Residents were randomised to no extra support (group 1); signposting to other services (group 2); and intensive personalised support (group 3). The study lasted for 18 months.

- In terms of health behaviours there were no significant differences in smoking, drinking, self-reported morbidity and mobility levels between group.
- There were significant differences in usage of NHS services between groups 2 and 3 and group 1.

- The estimated value of reduced NHS use (through planned care reduction) was £356 and £757 per person for groups 2 and 3 respectively versus group 1, where running costs increased by £113 per person per year.
- If all Family Mosaic tenants over 50 (5,805) had received the respective group 2 and group 3 interventions, this would have led to NHS savings of £1.6 million and £3.6 million per year.
- The interventions also found significant unmet need *across the randomised groups* that required urgent attention. These people therefore received the same support as those in group 3 which resulted in the biggest improvements in health and wellbeing across all the groups. NHS usage reduced by £935 per person per year in this group of people.
- On this basis, the analysis did not show differences in the health behaviours above for groups 2 and 3 compared to no additional support; however usage and NHS costs fell for groups 2 and 3 compared to group 1, with no detrimental effects on behaviour. In this sense (since costs are lower), groups 2 and 3 are relatively more cost effective in delivering the same outcomes, compared to group 1.

In addition, Family Mosaic believes that the overall costs could have been lower still – given that some were incurred due to this being a pilot (including delays in recruiting the sample, as well as some people receiving intensive support who did not require it). Family Mosaic also believes that 18 months was too lengthy a support period for group 3; the intervention could have been just as effective over a shorter period (3–6 months), which would have reduced costs further.

Family Mosaic is applying the lessons learnt in the launch of a new intensive health coaching service, which provides more tailored support targeted at self-management.

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Preventing domestic violence

Gemini Services (part of Chapter 1 Housing Association) provides the IRIS programme (Identification and Referral to Improve Safety) in Somerset. This scheme was part of a nationally evaluated scheme. An advocate educator and clinical lead work with general practices to train staff and provide referral routes for patients assessed at-risk of domestic violence. Gemini employ the advocate educator and are working with the local authority and CCG to pilot this in Somerset. The national evaluation (Norman *et al* 2010) shows:

- advocacy roles are effective in reducing abuse leading to improvements in quality of life, and in extreme cases preventing death

- the base case shows an incremental cost-effectiveness ratio of £2,450 per QALY
- the majority of sensitivity analyses were below NICE's upper threshold of cost-effectiveness of £30,000 per QALY.

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5: Cost–benefit

Housing associations can demonstrate positive cost–benefits in terms of the value of health produced and savings to the NHS

Cost–benefit analysis (CBA) goes one step further than CEA, taking account of the many benefits that interventions deliver and attaching a monetary valuation to them to derive an overall benefit for costs expended (HM Treasury *et al* 2014). Housing associations are well versed in CBA and have demonstrated the cost–benefit case for many services, including reducing antisocial behaviour, home adaptations to prevent falls, and reducing hoarding behaviour, for example. Appendix 2 shows some of the models they use to undertake these analyses.

Housing associations have been adept at developing CBAs, including valuing the wellbeing and health gains of their interventions. There are many ways to undertake a CBA, from specific studies to using third-party models. Each is unique and focuses on different elements. Below are some examples of housing organisations that have used these methods to demonstrate the economic case for their services.

Tackling antisocial behaviour, anxiety and depression

Nottingham City Homes (NCH) provides an antisocial behaviour (ASB) service that manages around 1,000 cases per year, providing case management and enforcement actions where needed, alongside wider activity as part of Nottingham's Community Safety Partnership. More than two-thirds of cases (70 per cent) are resolved within three months. The most common issues are noise, garden nuisance, substance misuse and harassment.

NCH (with support from Alice Jones Impact Consulting) undertook a wide-ranging analysis of the cost–benefits of its ASB intervention and the impacts on health and wellbeing (see a summary of this analysis at Nottingham City Homes, undated). This used a diverse set of measures. The findings show significant increases in measures of life satisfaction and mental wellbeing as a result of the intervention. The estimated cost savings and wider benefits include the following.

- A reduction in tenant turnover leading to a saving of £617,000 for NCH. The value of health and wellbeing to individuals in terms of reduced depression/anxiety, greater

confidence, and belonging to a neighbourhood is valued at £5.2 million (applying the Housing Associations' Charitable Trust (HACT) methodology, *see* Appendix 2).

- Reducing anxiety and depression is estimated to save the NHS £110,000 per year (unit costs of NHS treatment from the New Economy model).
- The ASB programme cost £813 per participant – a total of £712,726, plus enforcement costs of £84,334.
- The overall CBA is £5.3 million in net value over the evaluation period; for every £1 spent, the programme generates £9.90 in benefits (97 per cent of which is the value of wellbeing improvement).

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Home adaptation to prevent falls

The **Building Research Establishment** (BRE) has modelled the impacts of preventive home adaptations to reduce NHS use and the need for reactive adaptation among those with long-term illness or disability (Garrett *et al* 2016). They used information on: the state of housing from the English House Conditions survey; the risk of health issues occurring given hazards; NHS treatment costs related to those hazards; the costs of reactive adaptation compared to the costs of preventive adaptations. Findings include the following.

- The annual cost to the NHS of not fitting preventive adaptations is estimated at £414 million, with an additional £115 million in avoided reactive adaptation. The estimated cost of fitting these adaptations is £6.4 billion.
- The overall payback time in terms of NHS cost reductions is 15.2 years.
- For some adaptations, the payback time is much quicker: adaptations that reduce falls pay back in five to six years, whereas the payback for tackling damp is more than 500 years in terms of NHS costs.

The model does not include the monetarised value to residents of the health gain from reducing hazards, or knock-on reductions in costs to social care.

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Reducing hoarding behaviour

Liverpool Housing Trust (LHT) has worked with 62 residents with a hoarding disorder to reduce the fire and safety risk at their home, improve their mental wellbeing, and provide a long-term solution to the problems associated with the disorder (see a summary of this work at Metcalfe and Kavanagh 2015). The intervention includes identification of participants through

an impact assessment, provision of practical support, group therapy, a bespoke toolkit and peer support. The aim is to increase people's control over their lives and prevent relapse. LHT assessed the social value of the intervention using HACT's social value calculator (HACT 2016). Estimates include the following.

- Value of wellbeing, avoided falls, fires, evictions, and so on, for tenants receiving the intervention and of reduced disruption to neighbours: £758,697.
- Avoided financial costs for LHT in terms of administration, repairs, and other savings: £487,593.
- Financial savings to the NHS, local government and fire services of avoided fires, accidents and medical costs and social care packages: £129,207 (£37,494 of which is NHS costs).
- The programme was estimated to cost £45,000.
- Therefore, the programme is estimated to have averted £0.83 in NHS costs for every £1 spent, as part of a larger saving of £2.87 to government for every £1 spent. Overall value in terms of wellbeing, costs saved (to LHT and the government, including the NHS) is £30.57 for every £1 spent.

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Social value created across a range of activities

New Charter Group was created by the transfer of Tameside Council's housing stock in 2000. It has pioneered the use of social accounting and 'triple bottom line' accounting, including capturing and valuing the wellbeing benefits of its activities and how its interventions effectively manage demand on local NHS and wider public sector resources. Some of the findings from New Charter's impact analyses are set out below (New Charter Group 2015). They used the New Economy model (New Economy 2015) as part of the methodology (*see* Appendix 2).

In a joint investment between Tameside and Glossop Clinical Commissioning Group and New Charter Homes, the Healthy Living Project has worked with GPs in Hyde to help patients aged over 75 maintain good health and avoid the range of situations and circumstances that can lead to non-elective hospital admission. This way of working produced the following results.

- Value and benefits for primary care and acute health services, and health benefits for customers, worth £225,056.
- The overall value of social and health benefits and service impact delivered was £2.81 for every £1 spent (around 37 per cent of this in terms of averted NHS costs).

- An Integrated Family Services project in Nottinghamshire (Gedling Homes Family Intervention Project) and in Tameside (New Charter Homes' Inspire programme) supports families with long-term complex dependencies. For example, a CBA for the Inspire programme indicated that for every £1 invested, social benefits/gains worth £5.15 were realised. This has an annual net present value equivalent to £1,560,400 for partner agencies in Tameside and across the Greater Manchester city region.

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4 Specific economic cases: mental health and falls prevention

The previous section has shown how the social housing sector uses various forms of economic argument to demonstrate its value to the health sector, including the NHS. This information can also be cut in a different way, allowing the development of economic cases for the contribution of housing to health in specific areas such as mental health and falls prevention. These are discussed in more detail below.

Housing associations and their impact on mental health

The economic case for the impact of housing association services on health is as important for mental health as it is for physical health. Across the case studies and the wider literature, it is clear that having a decent, healthy home supports and maintains mental health. Furthermore, housing associations are often on the front line with interventions to improve the wellbeing of vulnerable groups.

The evidence presented here shows that many aspects of housing association residents' mental health have high costs for the NHS and wider society. For example, the total cost of dementia to the United Kingdom is £26.3 billion, £4.3 billion of which is accounted for by the NHS and £10.3 billion in social care costs (Alzheimer's Society, undated,) and domestic violence costs the NHS £1.6 billion per year (Walby 2009). Living in poor housing has detrimental effects on wellbeing and mental health through exposure to noise, antisocial behaviour and the physical defects of houses. Living in a housing association home raises the chances of being in a decent home and reduces exposure to these problems.

The evidence also shows that housing is an important setting for the elderly to maintain and improve their mental health. For example, support for older people from housing associations and other organisations can help improve cognitive function and reduce depression and anxiety. This helps to reduce overall NHS costs, particularly for GP care and planned hospital care. One study found that this type of support contributed to a reduction of almost 38 per cent in NHS costs compared to control participants (Holland *et al* 2015).

Finally, housing interventions that address specific issues such as domestic violence or anti-social behaviour can improve mental health and wellbeing and reduce NHS costs. An

evaluation of a national programme in primary care to detect and support women at risk of intimate partner violence (Norman *et al* 2010), which included housing association inputs, found that it was effective in reducing abuse. This led to improvements in quality of life at a base-case cost-effectiveness ratio of £2,450 per QALY. Action by housing associations to tackle antisocial behaviour can also reduce NHS costs as well as turnover costs for the association itself; but the biggest impact is in the value to individuals and neighbours in terms of reduced depression and anxiety, greater confidence, and sense of belonging to the neighbourhood. In one setting (Nottingham City Homes, undated), these impacts were valued at £5.2 million, making by far the largest contribution to an overall cost-benefit analysis of £9.90 for every £1 spent.

Housing associations and falls prevention

Falls costs the NHS around £2 billion every year (Tian *et al* 2014). Being in a safe home is the first line of defence against a possible fall. Several housing associations in our case studies developed the economic case for falls prevention and for support following a minor fall. Many more of the National Housing Federation's members offer falls prevention services to their residents and more widely.

The evidence presented here shows that safe and decent homes offer many paybacks, including in falls prevention. The quickest paybacks are in reducing falls among older people – estimated from less than a year to up to five or six years (Garrett *et al* 2016; Birmingham City Council's Housing Strategy and Partnerships Team 2011).

The evidence also shows that housing is an important setting for older people to maintain their independence and even reverse their frailty scores. Housing associations and other organisations can help achieve these goals. For example, 19 per cent of older residents with access to a drop-in centre on site were shown to have reverted to a 'resilient' state from a 'pre-frail' state. This helped to reduce overall NHS costs, which were most significant among frail patients – reducing on average from £3,374 to £1,588 per person per year (Holland *et al* 2015).

Finally, housing associations can provide falls response services to the community for non-injured fallers. One service showed that for 865 attendances based on call-outs, it had saved the NHS more than £300,000 through prevented ambulance call-outs, A&E attendances and admissions, and GP attendances (see Herefordshire Housing Group example, p 16).

5 Summary

Housing associations provide services for more than 5 million residents (National Housing Federation 2015a) and use their expertise and knowledge to support many more. This report has set out examples of the wide range of economic data and arguments they use in making their case to the NHS. These include high-level context-setting information on the costs of illness; ways in which housing associations can offset NHS demand and costs; cost-effectiveness and cost-benefit studies.

Decent housing is critical to good health

Since housing association homes are more likely to be of a decent standard than other forms of housing, being in such a home creates social value through its impacts on health and wellbeing. These impacts include reductions in use of the NHS through reducing excess cold, and through being safer and therefore reducing the likelihood of falls. For example, every 200 residents in a decent home produce wellbeing and health valued at more than £1 million (Cawood 2013); safe homes can reduce hospital admissions for young people by almost 30 per cent, paying back more than £15 for every £1 spent (based on the Safe At Home evaluation, *see* Buck and Gregory 2013); bringing homes up to a decent standard (focusing on excess cold and falls prevention) pays back within a year in terms of reduced use of the NHS (Birmingham City Council's Housing Strategy and Partnerships Team 2011).

Housing associations provide a wide range of services that help alleviate the overall economic burden of ill health linked to a range of conditions

For example, failing to fit preventive housing adaptations is estimated to cost the NHS £414 million annually (Garrett *et al* 2016); the cost of falls to the NHS is around £2 billion annually (Tian *et al* 2014); dementia costs the NHS £4.3 billion and social care £10.3 billion every year (Alzheimer's Society, undated). Delayed hospital discharges cost the NHS in England £820 million annually (National Audit Office 2016), though the true cost is probably higher, given that patients may be diverted to higher-cost private sector treatment as a means of freeing up capacity. The rate of hospital admissions and A&E visits for the homeless is four times higher than for the general public and the overall costs of health services up to eight times higher (Department for Communities and Local Government 2012). The support housing associations provide to residents and others contribute to reducing costs in all these areas. They also provide valuable services for other vulnerable populations such as those suffering from or at risk of domestic violence, which costs the NHS around £1.6 billion every year (Walby 2009).

Housing associations work with local NHS partners to provide services, including short- and long-stay accommodation, which help offset the costs of NHS care

Housing associations make a considerable contribution to reducing NHS costs through their direct work supporting people's wellbeing. For example, domestic violence prevention helps reduce NHS demand costs, by £2.87 for every £1 spent annually (see Arch example, p 14), without factoring in the value of health obtained as a result. Providing drop-in support for elderly residents can reduce the use of the NHS and costs by more than £1,000 per year (Holland *et al* 2015), and even more for frail residents. Services to the wider community, such as rapid response call-outs to minor falls, can also save hundreds of thousands of pounds (see Herefordshire Housing Group example, p 16). This shows the very diverse impacts that good housing has on NHS demand and costs.

Housing associations are increasingly demonstrating the economic value of their services to the NHS and more widely through cost-effectiveness and cost-benefit analysis

Cost-effectiveness and cost-benefit analysis techniques go beyond measuring how much they save the NHS to include the value of health created by housing association support. For example, in one area, for every £1 spent on tackling antisocial behaviour almost £10 is returned in benefits, mostly in the value of health and wellbeing but also saving the NHS more than £100,000 (Nottingham City Homes, undated); fitting home adaptations to prevent falls pays back over a relatively short period (five to six years) in terms of reduced NHS costs (Garrett *et al* 2016); preventing and reducing hoarding behaviour can pay back £0.83 for every £1 spent as part of an overall payback to government of just under £3 for every £1 spent (see Liverpool Housing Trust example, p 21) and a much greater payback in terms of wellbeing and health gain; helping residents over the age of 75 maintain their health can produce overall social and health benefits of £2.81 for every £1 spent (New Charter Group 2015), more than a third of which is in averted NHS costs. Supporting older residents to lead healthier lives can also reduce demand on the NHS (Family Mosaic 2016)

In conclusion, the aim of this report has been to present how these arguments are being used in practice, rather than to validate any specific case. However, it's clear that housing associations have a lot to offer the NHS and with the move to place-based planning signalled by the Sustainability and Transformation Fund process (The King's Fund 2016), the NHS should be working more closely than it is with housing associations and the wider housing sector.

Appendix 1: Our methodology

The goal of the research was to better understand and articulate how the health and housing sectors understand, value and use evidence – including economic evidence – in their decision-making, in order to support stronger joint working to achieve health goals.

Our methodology was based on semi-structured interviews, case studies, literature review and some further analysis. The findings from each of these elements are reflected in the three separate reports generated by the project.

Semi-structured interviews with health professionals

Fifteen telephone interviews were undertaken with individuals from across the health (and local government) sectors, including:

- two chairs of CCGs who were also GPs
- two national policy leads: a former doctor and a former manager in an acute NHS setting
- three GPs
- a director of a commissioning support organisation
- two senior hospital-based clinicians with responsibilities for discharge planning
- two directors of public health
- a head of public health intelligence
- the chief executive of a local authority
- a deputy director in mental health.

Literature search on attitudes to and use of evidence in health

Our literature review focused on how evidence (including economic evidence) is perceived, valued and used in the NHS.

The search (covering 2005 to 2016) was undertaken via The King's Fund's information and knowledge services, which has access to the following databases: the British Nursing Index

(BNI), the Cumulative Index to Nursing and Allied Health Literature (CINAHL), Health Business Elite, HMIC (this database combines resources from the Library and Information Services of both the Department of Health and The King's Fund, focusing on the NHS and health service quality, and health service policy, management and administration), PubMed, and Social Care Online.

This was supplemented by hand-searching and conversations with experts.

The search terms included:

- su: (evidence based policy or evidence based management or evidence based practice or evidence based medicine) and su: (literature reviews or systematic reviews or utilisation review or research implementation or decision making or access to information or policy formulation or health service managers or commissioning or randomised controlled trials)
- su: (decision making) and ab: (economics) or ti: (economics) or su: (economics) or ab: (economic) or ti: (economic) or su: (economic)
- su: (decision making) and su: (commissioning or health service managers or health service management or service provision or service delivery or case studies or managerial behaviour or directors or boards or NHS)
- su: (housing or independent living) and su: (decision making or evidence or economic evaluation).

Case studies of housing associations

The case studies were selected on the basis of a structured analysis of the National Housing Federation's 2015 audit of its members, which asked for case studies of work with the health sector. We analysed the database to identify case studies on the basis of:

- strength of study design evidence (eg, RCT, case-control, longitudinal study)
- mix of intervention types (eg, to find a diverse range of interventions relevant to different ages, needs and parts of the health sector)
- mix of outcomes (eg, saved NHS utilisation, wellbeing, patient experience and health outcomes)
- text search for economic terms including: costs, (social) return on investment, cost-effectiveness, cost-benefit analysis
- geography (ie, to have a mix of examples from across England).

We followed this with a hand search using the database to visually identify studies of promise that the formal search may have missed, supplemented with other studies known to us through other routes.

This resulted in a total of 14 case studies. We interviewed the organisations and staff concerned using a semi-structured questionnaire; we also requested and received relevant additional material that was used to inform our reports.

Appendix 2: Common economic tools used by the housing sector

Housing associations can use and are using economic arguments to support their case to the health and care sector that they make a valuable contribution to health. These are structured in five main ways: by raising the health and wider benefits of decent homes; by demonstrating the overall cost (and health) burden of a problem that they can address; by demonstrating the cost and health burden at an individual level for patients and residents that they can address; by showing that they have cost-effective solutions; and by showing that they have solutions that deliver a wide range of benefits that are worth more than the cost that is being paid (in other words, cost–benefit analysis (CBA)).

Housing associations use different data to inform these analyses and different methodological techniques. The analysis in the text shows just how different these are. Some fund long-term clinical and/or social research, tracking their impact directly, either with a control group or following cohorts over time. Others use more simple evidence on likely costs averted for individuals.

Some associations use a mix of these methods depending on the audience and purpose, including linking their own activity to third-party models that provide estimates for part of the process, particularly the monetisation of wellbeing and health effects for use in CBA. The use of such models is becoming more widespread. Their flexibility, and ability to be used off-the-shelf provides housing associations, and others, with useful assessments and valuations of the impact of their work.

We do not endorse any particular model over any others. All models have their strengths and weaknesses, and it is incumbent on those who develop them to explain this, and on those who use them to understand them and apply and use them in an appropriate way.

But, and because they are used relatively widely including by our case studies, we set out the key characteristics of two of these models below. Both are built on the notion of cost–benefit analysis, and developed using techniques recognised by the Treasury and used more broadly in public sector economics.

HACT's social value bank

The Housing Associations' Charitable Trust (HACT) has developed a social value bank (and spreadsheet tool) (HACT 2016), which helps housing associations and others assess the monetised value of their impact on health and wellbeing. This is based on extensive health economics research on how various factors (including the physical state of homes and the home environment) impact on wellbeing, and the compensation value required to offset those factors. These values are drawn from an analysis of the British Household Panel Survey, a representative sample of households. Housing associations use these values to monetise the health and wellbeing effects of their interventions and include them in CBAs.

The New Economy model

Some associations – New Charter, for example – have used the Greater Manchester Combined Authorities (GMCA) New Economy model (New Economy 2015). The Greater Manchester Cost–Benefit Analysis was developed to support consistent and robust economic assessment across its public sector reform programmes. The model is widely used across local authorities in Greater Manchester and also in some London boroughs (for example, Croydon). The model comes with useful and extensive guidance, and several associations have used it to provide evidence of the economic value and benefits of their work to commissioners and health service providers.

A potential issue in using these models with NHS partners is that the health sector (led first by health psychologists and later by health economists) has 'gone along its own path' and has a stronger preference for and focus on cost-effectiveness modelling – where benefits are expressed in quality-adjusted life years (QALYs) rather than being monetarised, as in cost–benefit analysis, the most general approach.

Over time, however, this is likely to change as the NHS becomes more 'place-based', takes a greater role in devolution locally and as part of both of these seeks to engage more with other sectors. These tools, and those like them, will become more relevant, more familiar and more used by health commissioners and providers over time.

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