

A Rapid Review of the Evidence for Prevention in Mid and Later Life

1. Introduction

- 1.1 The Devon Prevention Strategy 'Promoting Independence and Wellbeing for Adults' 2011-13 (Lang, 2010) assessed the evidence for the following social interventions:
- community mentoring
 - social care reablement
 - falls prevention
 - intermediate care
 - telecare
 - volunteering
 - extra-care housing
- 1.2 This paper updates the evidence based for these seven original interventions but also looks at the evidence for eight additional social interventions:
- social prescribing
 - self-care
 - social media and social networks
 - community engagement
 - family group conferencing
 - parenting programmes
 - social isolation
 - housing
- 1.3 The paper also considers the evidence for wider prevention in clinical and community settings prior to diagnosis and at first diagnosis:
- individuals with no identified health condition
 - lifestyle factors (smoking, healthy diet, sensible drinking, physical activity)
 - secondary and tertiary prevention for those with one or more long term conditions
 - diabetes and pre-diabetes
 - hypertension
 - cholesterol management
 - secondary prevention for cardiovascular disease
 - chronic obstructive pulmonary disease
 - dementia
 - treatment of anxiety disorders
- 1.4 For each intervention, a brief description is given followed by a brief review of existing evidence on effectiveness and cost. A summary concludes each section and grades the quality of evidence available for each intervention according to the system for grading evidence used by NICE, the National Institute for Health and Care Excellence (Appendix 1).

- 1.5 The evidence reviews have been selected to build on the work in the original prevention strategy and in response to discussions with Commissioners. The review has been undertaken to support commissioning decisions and development of the future prevention strategy and should be read in conjunction with the earlier papers. It does not provide a complete compendium of prevention interventions and wider and more detailed evidence review work may be required in some areas.
- 1.6 The paper introduces some mid-life interventions and builds on some of the later life interventions. Reducing health inequalities is important and the paper should be read with this in mind.
- 1.7 The tables below summarises the strength of evidence and likelihood of benefit associated with each of the interventions described in part A and part B and should be read in conjunction with the evidence review.

Note: “+++” represents the highest level of evidence, “---“ represents the lowest level of evidence, and “?” represents uncertainty/insufficient evidence

Table 1: Update of evidence for behavioural and clinical interventions (part A)

	Likelihood intervention will deliver desired outcomes	Likelihood intervention represents value for money
Health Check followed by appropriate intervention	+	Evidence not yet fully available
Making ‘every contact count’ with health professionals	++	++
Stop smoking interventions	+++	+++
Interventions to support a healthy diet	+++	+
Alcohol abuse reduction	+++	+++
Interventions to support physical activity	+++	++
Pre-diabetes – Intensive lifestyle intervention to reduce weight, improve diet and increase levels of physical activity	+++	+
Diabetic control within best advised range	+	+
Antihypertensive treatment to maintain blood pressure within 140/90 for the primary and secondary prevention of cardiovascular disease	+++	++
Prescription of statins for the primary and secondary prevention of cardiovascular	+++	++

disease		
<i>Continued</i>	Likelihood intervention will deliver desired outcomes	Likelihood intervention represents value for money
Specialist stroke service	++	+
Antiplatelet drugs and statins for secondary prevention of stroke	+++	+
Prescription of warfarin for all patients with atrial fibrillation meeting criteria	+++	+
Use of novel anticoagulants	+++	+
Cardiac rehabilitation	+++	+
Prescribing, aspirin, an ACE inhibitor a beta-blocker and a statin post myocardial infarction for all patients	+++	+
12 months anticoagulation and antiplatelet for patients post MI	+++	+
Use Spironolactone or other aldosterone antagonist for heart failure for patients already on loop diuretic and ACEI	++	Evidence not yet, fully available
Health failure specialist nurse and rehabilitation	+	Evidence not yet, fully available
Reduce pollution	+	Not clear in a Devon context
Seasonal 'flu vaccination	+	+
Pneumococcal vaccination	?	?
Appropriate prescribing of LAMAs, LABAs and steroids	+	-
Pulmonary rehabilitation	+	-
Primary prevention of dementias – healthy lifestyle combined with mental activity	+	+
Use of acetylcholinesterase inhibitors to improve symptoms of dementia	+	+
Stepped treatment of anxiety (CBT), starting with education and information	++	++
Use either high intensity psychological intervention (CBT or applied relaxation) or drug therapy with an SSRI if low intensity psychological interventions fail	++	++

Table 2: Update of Evidence for Social and Community Interventions (Part B)

Intervention	Likelihood intervention will deliver desired outcomes	Likelihood intervention represents value for money
Digital - Telecare	?	?
Digital - Telehealth	---	---
Social media and social networks (new)	?	?
Social care reablement	++	+
Intermediate care (including all essential elements)	++	?
Self-care (new)	++	Evidence not yet available
Social prescribing (new)	?	?
Social isolation	+	-
Falls & fractures prevention	+++	++
Parenting programmes (new)	+++	+
Family group conferencing (new)	+	+
Health & Wellbeing of carers	+++	++
Volunteering (specific projects)	+++	++
Community engagement (new)	+++	+
Community mentoring	--	--
Housing Interventions	+	Evidence not yet, fully available
Extra-care housing	+	+

1.6 In the remaining paper:

- **Part A** provides a rapid review of the evidence for behavioural and clinical interventions
- **Part B** provides an update on the evidence for the eight original social interventions considered in the Devon Prevention Strategy (Lang, 2010) as well as the evidence for a number of additional interventions.

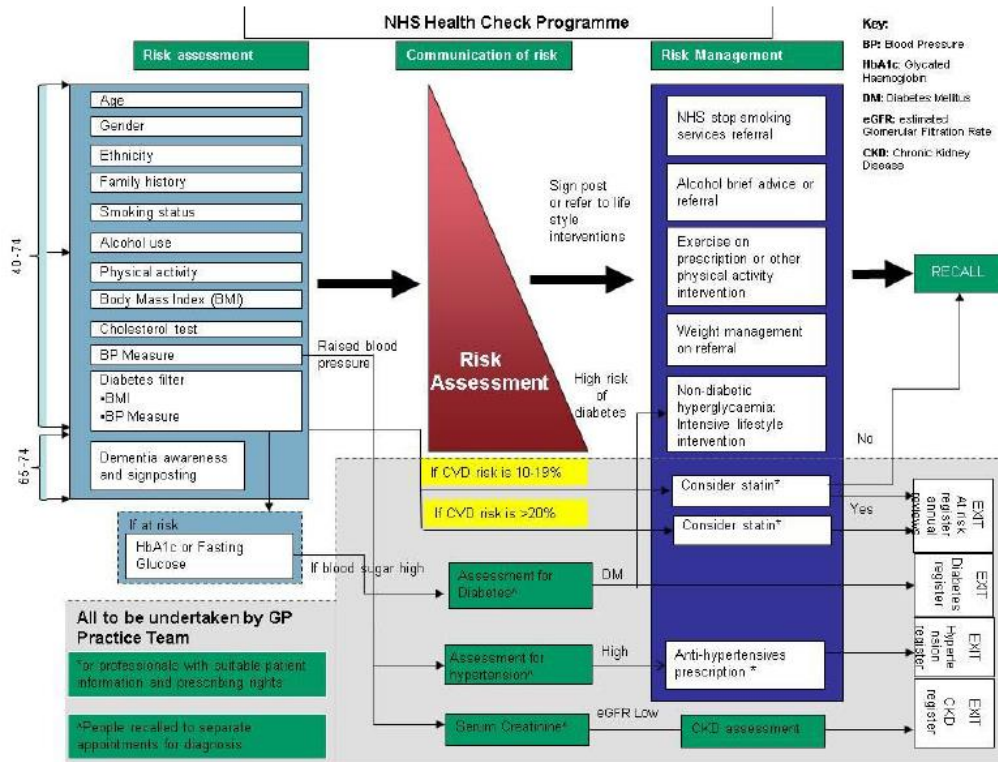
PART A

Rapid Review of the Evidence for Behavioural and Clinical Interventions

2. Individuals with No Identified Long Term Condition

- 2.1 The **NHS Health Check**, which is offered to people aged 40–74, who are not on a disease register every five years, is an opportunity to make an initial assessment of risk and risk behaviour. Information on age, gender, race, family history, physical activity level and smoking status is gathered, and the blood pressure and random blood cholesterol measured. If the individual is at higher risk of type 2 diabetes, as indicated by BMI or hypertension (see figure 1 below), then an HbA1c is measured to screen for either diabetes, or pre-diabetes. Older people are also screened for dementia.
- 2.2 People who smoke are offered the opportunity to be referred to the NHS stop smoking service. Those people who are drinking at higher levels than advised can be given a very brief, or brief intervention or they can be referred to a local service. Those people who would benefit from being more active can be given information on local opportunities for exercise, those at higher risk of cardiovascular disease and those who are obese can be referred to exercise on prescription. People identified as overweight or obese can be referred to a range of level 1, 2 or 3 services to help them lose weight. Those with high cholesterol can be referred for dietary advice, weight management if appropriate and statin prescription. Those people with high blood pressure can be referred for lifestyle intervention (diet, weight and exercise) and also antihypertensive prescription as appropriate. If the HbA1c suggests pre-diabetes then these people should be referred for intensive lifestyle intervention involving weight loss, exercise and diet (see figure 1 below).

Figure 1: Diagrammatic overview of the vascular risk assessment and management programme



Source: NHS Health check Best Practice Guidance - February 2015
http://www.healthcheck.nhs.uk/commissioners_and_healthcare_professionals/national_guidance/

- 2.3 NICE guidance PH15 has evidence based advice on ‘identifying and supporting people most at risk of dying prematurely’ and should be consulted to ensure that the Health Check programme reaches those most likely to benefit. This may be assisted by community engagement to try and maximise the proportion of those offered a Health Check accepting the invitation, using the principle of ‘proportionate universalism’ to ensure that the Health Check programme reduces Health inequalities, rather than exacerbating them.
- 2.4 Interventions should employ a person centred approach and incorporate the following principles:
- Planning should incorporate formulating goals, a monitoring programme to check progress and give feedback to participants and also how to recruit and incorporate social support.
 - Capitalise on opportunities when individuals are more open to change, such as when an individual is recovering from a behaviour related condition (heart attack or similar), every contact counts.
 - The COM-B model, capability, opportunity and motivation.
- 2.5 The ‘**every contact counts**’ initiative incorporates the concepts of ‘very brief’, ‘brief’ and ‘extended brief’ interventions. The use of these is suggested as follows:

- Very brief – to anyone who may be ‘at risk’ and involves a 30 second to two minute intervention, asking the individual if they are interested in information on the subject and giving information or signposting.
 - Brief – a few minutes, involving an opportunistic, oral discussion or negotiation.
 - Extended brief – more than 30 minutes, an individually focussed discussion directed at those involved in higher risk behaviours, such as higher risk drinking, those with a number of health problems, those assessed at higher risk of harm, those successfully making a change but needing more support, or those finding it hard to change.
- 2.6 High intensity interventions, in excess of 30 minutes on a number of occasions should be directed at adults at high risk (such as those with a BMI >40), those with serious medical conditions and those who have not benefited from extended brief interventions.
- 2.7 NICE guidelines provide a strong evidence base and cost effectiveness for behaviour change interventions aimed at individuals. (NICE, 2015 a/b) The content, scale and intensity of intervention should be proportionate to the level of social, economic or environmental disadvantage someone faces and the support they need, to avoid widening inequalities. Interventions delivered by GPs and other medical staff are often effective but focusing solely on these interventions could widen health inequalities, as people from the most vulnerable groups often do not use primary care services. Understanding how people access service is the key to design of behaviour change interventions.
- 2.8 It is important to maintain behaviour change for more than a year, this requires monitoring meetings/ contacts with individuals involving feedback so that the change is embedded into their lifestyle. It is recognised that it may be difficult to get patients to initiate and maintain lifestyle changes, and one study (Artac M, 2003) that looked into the longer term maintenance of lifestyle change found that patients followed-up post heart attack were very keen to have a long-term programme incorporating mutual support and sharing with regular (not necessarily frequent) input from practitioners of information, advice and reassurance, as a support strategy for lifestyle change.
- 2.9 Evidence is emerging that the Health Check Programme may be effective, despite early concerns. Research by Imperial College (Department of Health, 2013) which followed up a first year Health Check cohort identified as ‘high risk’ for cardiovascular disease from Hammersmith and Fulham Primary Care Trust. This involved a cohort of 4,700 patients, of whom 1886 had a full check, and 2,703 had a partial check. Follow-up of the 1574 patients with a full check at baseline found that for these patients the mean cardiovascular risk score fell by 2% from 28.2% to 26.2%. The results showed a significant drop in diastolic blood pressure, from 80.7 to 79.6 mmHg, total cholesterol fell from 5.26 to 4.98 and the total/HDL cholesterol ratio fell from 4.44 to 4.13. Statin prescriptions rose from 14% of the cohort to 61% and this was thought to have been the main contributor to the reduction in risk. The greatest reductions were seen in men, younger patients, white patients and the most deprived groups. Black and South Asian patients did not experience significant improvements in predicted cardiovascular disease risk.

<i>Intervention</i>	<i>Evidence of effectiveness</i>	<i>Level of evidence on cost</i>
Health Check followed by appropriate intervention	2+	?

3. Interventions to Support Smoking Cessation

- 3.1 Smoking cessation is recognised as being one of the most cost-effective Public Health interventions, in addition to reducing premature and preventable deaths, it has the potential to reduce Health inequalities, as the more disadvantaged have a higher prevalence and intensity of tobacco use (NICE PH48).
- 3.2 Smoking cessation is effectively addressed on a number of fronts and during the life-course, for example: in pregnancy and post-natally, in the workplace, in primary care and in secondary care, and through public policy in public places. Effective interventions include:
- Brief interventions, by GPs or by other primary care practitioners, through advice, self-help or referral.
 - Individual behavioural counselling.
 - Group behaviour therapy.
 - Pharmacotherapies (NRT, varenicline or bupropion).
 - Self-help materials.
 - Telephone counselling and quit-lines.
 - Mass media campaigns, combining TV, radio and newspapers.
- 3.3 These interventions can be employed singly, or in any combination. A smoking cessation service should aim to treat 5% of the smoking population per year, of these 35% should have given up smoking at four weeks (measured by no smoking in the last two weeks – verified by CO monitor). The service should audit its results and publish them. There should be links with contraceptive services, fertility services, antenatal and postnatal services as well as secondary care medicine in order to maximise opportunities to reach smokers.
- 3.4 As well as being a habit, many smokers suffer from dependence on or addiction to nicotine. In order to help smokers to quit, prescribers should prescribe a two week supply of nicotine replacement therapy (NRT), or a drug which will support their withdrawal from the substance. The quantity prescribed depending on level of smoking and nicotine dependence, smokers should have stopped smoking at two weeks and no further prescription should be issued for six months. If using varenicline or bupropion, then three to four weeks supply can be prescribed, because of the different mode of action. Smokers should be reassured that nicotine replacement is safe.
- 3.5 Employers have a duty of care to their employees to ensure their premises are smoke-free, but also to support any smoking employees to quit. Smokefree policies and the provision of access to a smoking cessation service, including the provision of pharmacotherapies is recommended.

<i>Intervention</i>	<i>Level of evidence for effectiveness</i>	<i>Level of evidence on cost</i>
Stop smoking interventions	1++	1++

4. Interventions to Support a Healthy Diet

4.1 Dietary choices are shaped by wider factors in the food system such as location of food outlets, availability and type of food, price, marketing, financial resources, knowledge and skills, individual preferences, social norms and support, distance to shops and cooking facilities. The following interventions refer to individual-level behaviour-change, but operate within this wider context.

4.2 A healthy diet can protect against obesity, diabetes, cardiovascular disease, cancer and skeletal conditions. Interventions to promote a healthy diet overlap with guidance on maintaining a healthy weight. Clinicians should promote the benefits of improved dietary habits that are independent of weight, such as lower blood cholesterol and improved oral health. Improved dietary habits are as important for people who are currently a healthy weight as for people who are already overweight.

What is a healthy diet?

4.3 NICE recommends that average consumption of salt, saturated fat and trans fats should be reduced in the population. (NICE PH25, 2010) Salt should be reduced to 6g per day per adult by 2015. Halving the average intake of saturated fat (from 14% to 6–7% of total energy) might prevent approximately 30,000 CVD deaths annually (nationally). Industrially-produced trans fatty acids (IPTFAs) should be eliminated from human consumption.

4.4 NICE also state that everyone should be encouraged to follow a dietary pattern that is mainly based on vegetables, fruits, beans and pulses, wholegrains and fish. (NICE NG7, 2015) Further recommendations to help people to avoid excess weight include:

- Reduce the overall energy density of the diet.
- Limit consumption of energy-dense food and drinks prepared outside the home, particularly 'fast' or 'takeaway' foods.
- Avoid sugary drinks.
- Reduce total fat intake.
- Eat breakfast but do not increase overall daily energy intake.
- Increase the proportion of high fibre or wholegrain foods eaten.
- Limit intake of meat and meat products. Follow existing advice from NHS Choices to eat no more than 70g of red and processed meat a day.
- Avoid extreme dietary behaviours (such as avoiding all carbohydrates) as they are difficult to sustain and may not lead to wider improvements in health.

4.5 There is strong evidence that a Mediterranean diet can protect against heart disease even when evidence of disease is present. (Estruch 2013; Mente 2009; Threapleton 2013) The Mediterranean diet is characterised by:

- abundant use of olive oil.
- ≥ 2 daily servings of vegetables.
- ≥ 2 -3 daily servings of fruit.
- ≥ 3 weekly servings of legumes.
- ≥ 3 weekly servings of fish or seafood, including at least one of oily fish.
- ≥ 1 weekly serving of nuts or seeds.
- skinless white meat instead of red or processed meat.
- twice weekly consumption of tomato, garlic, onion and olive oil, simmered in a sauce.
- limited consumption of dairy products high in saturated fat, sugary drinks and processed sugary foods.

4.6 There is also strong evidence that low glycaemic index diets can effectively promote weight loss, reduce cholesterol levels and improve glycaemic control in diabetes patients. (Thomas 2007; 2009) The glycaemic index factor is a ranking of foods based on their overall effect on blood sugar levels. Low glycaemic index foods, such as lentils, provide a slower, more consistent source of glucose to the bloodstream, thereby stimulating less insulin release than high glycaemic index foods, such as white bread. In practice, the foods included in low glycaemic index diets are similar to those included in a Mediterranean-style diet.

Individual-level behaviour change to improve diet

4.7 Dietary advice is modestly effective in reducing blood lipid levels, blood pressure and dietary fat intake, and increasing fruit and vegetable intake. (Rees 2013) Advice can be verbal or written, face to face or through other channels, to individuals or small groups, by health professionals or other personnel. The extent of dietary change is influenced by the intensity and duration of intervention, and by perceived disease risk.

4.8 In accordance with NICE guidelines and paragraph 2.5 above on making every contact count, health, wellbeing and social care staff in direct contact with the general public should use **very brief or brief interventions** to motivate them to improve their diet and to inform people about services or interventions available. Behaviour change service providers and other health and social care staff should provide an **extended brief intervention or high intensity interventions** to people they regularly see for 30 minutes or more who are at higher risk of causing harm to their health and wellbeing, have a serious medical condition that needs specialist advice and monitoring or have not benefited from lower-intensity interventions.

4.9 Ongoing training of practitioners in behaviour change and communication skills is important. Effective interventions include the behaviour change technique clusters of 'Goals and Planning', 'Feedback and Monitoring', and 'Social Support'. It should be clearly communicated that even gradual improvements to diet can improve health.

Vitamin D supplements

- 4.10 Vitamin D is essential for bone health. Severe deficiency can result in osteomalacia in adults. The main source of vitamin D is exposure to sunlight, but it is also found in foods including eggs, oily fish, fortified spreads and breakfast cereals. NICE guidance recommends that health professionals should recommend vitamin D supplement use to at-risk groups whenever possible, for example during routine appointments and Health Checks (NICE PH56, 2014). Computerised prompts should be integrated into health and social care systems. Adults at higher risk of vitamin D deficiency include pregnant and breastfeeding women, people over 65, people who have low exposure to the sun and people who have darker skin.

Malnutrition and underweight

- 4.11 Due to the high prevalence of obesity in the UK, messages on healthy eating tend to focus on the risk of overweight and excess nutrient provision rather than underweight, and advice is tailored accordingly. However, underweight is also a risk in certain groups, so messages should focus on the importance of a balanced diet to improve health, rather than focusing on weight in isolation.
- 4.12 Malnutrition, as defined by deficiency of nutrients such as energy, protein, vitamins and minerals, causes measurable adverse effects on body composition, function or clinical outcome. Malnutrition is both a cause and a consequence of ill health. It increases a patient's vulnerability to disease. Nutritional support methods include oral nutrition support, enteral tube feeding and parenteral nutrition. NICE guidelines should be followed for adults who are malnourished or at risk of malnutrition. (NICE CG32, 2006)

<i>Intervention</i>	<i>Level of evidence of effectiveness</i>	<i>Level of evidence on cost</i>
Mediterranean diet	2+	2+
Low glycaemic index diet	1+	1+
Very brief, brief, extended brief and high intensity interventions – advice to improve diet	1+	1+
Vitamin D supplements in at risk groups	2+	2+
Nutrition support for adults at risk of malnutrition	2-	2-

5. Interventions to Support Sensible Drinking

- 5.1 The risk and type of alcohol-related harm varies according to the quantity of alcohol consumed and the pattern of drinking, with the risk of harm increasing with the more alcohol that is consumed. Approximately, 21% of adults in

Devon engage in increasing risk drinking (regularly exceeding recommended levels) and 7% in higher risk drinking (regularly drinking more than either eight units of alcohol per day or 50 units per week for men or more than either six units per day or 35 units per week for women). Harmful alcohol consumption can cause acute and chronic mental and physical health problems, ranging from poisoning to cancer, as well as social consequences, such as trouble at work, money problems or family and relationship breakdown. These harmful consequences translate to an estimated total annual cost to society of over £21 billion, comprised of £3.5 billion cost to the NHS, £7 billion from lost productivity and £11 billion from crime in England.

- 5.2 NICE Public Health guidelines PH24 ‘Alcohol-use disorders: preventing harmful drinking’ and PH49 ‘Behaviour change: Individual approaches’ and CG 115 ‘Alcohol use disorders: diagnosis, assessment and management of harmful drinking and alcohol dependence provide a strong evidence base and cost effectiveness for brief interventions, and substance misuse services and CG 115 outlines the principles of care, identification and assessment and interventions for alcohol misuse.

<i>Intervention</i>	<i>Level of evidence for effectiveness</i>	<i>Level of evidence on cost</i>
Brief intervention for alcohol	1++	1++
Investment in substance misuse services	1++	1++

6. Interventions to Support Physical Activity

- 6.1 Physical inactivity and sedentary behaviour is a public health priority. Nationally more than 40% of women and 35% of men sit still for more than six hours a day and in Devon nearly 40% of adults were not active for 150 minutes a week as recommended by the Chief Medical Officer’s Guidelines. (PHE 2014; DCC 2013) Over the last 50 years, physical activity levels have declined by 20% in the UK, with projections indicating a further 15% drop by 2030. Economic analysis has estimated that reducing physical inactivity by just one per cent a year over a five year period would save local authorities £1.2 billion. (NICE 2006)
- 6.2 The Public Health England publication ‘Everybody active, every day’ (PHE 2014) provides an evidence based approach to physical activity with a focus on the following:
- Teach every child to have and enjoy the skills to be active every day.
 - Create safe and attractive environments where everyone can walk or cycle, regardless of age or disability.
 - Make every contact count for professionals and volunteers to encourage active lives.
 - Lead by example in every public sector workspace.
 - Evaluate and share the findings so the learning of what works can grow.

- 6.3 NICE guidance on brief advice in primary care (NICE PH44, 2013) considered brief advice in primary care was cost effective and had a modest but consistent impact on physical activity levels. There is evidence of effectiveness for identifying inactive adults opportunistically or as part of a planned session on management of long term conditions. It also recommends inclusion of brief advice for physical activity in wider commissioning plans particularly for groups known to be inactive such as people 65 and over, people with a disability and people from certain ethnic minority groups. The evidence recommends training on brief advice and physical activity.

<i>Intervention</i>	<i>Level of evidence for effectiveness</i>	<i>Level of evidence on cost</i>
Brief intervention for physical activity	1++	1++

7. Secondary and Tertiary Prevention for Those with One or More Long Term Conditions

- 7.1 People with established long-term medical conditions are on disease registers and they will be on long term follow up, either through primary care, or through shared care, when their care is largely managed in General practice but guided by secondary care. However, if the condition worsens, or they otherwise need specialist reassessment, they are referred back to secondary care. As a result, they are well known to both primary and secondary care and the level of control of their primary condition known. For these individuals, making 'every contact count' is probably the most effective way of ensuring that no opportunity is missed to inform and influence them to change any persistent damaging behaviours or risk factors.

<i>Intervention</i>	<i>Evidence of effectiveness</i>	<i>Level of evidence on cost</i>
Making 'every contact count' with health professionals	2+	2+

8. Diabetes and Pre-Diabetes

- 8.1 Diabetes is defined by either a high level of plasma glucose, either fasting or after a glucose tolerance test (GTT), it can also be diagnosed after particularly high plasma glucose. Alternatively, it can be defined by glycosylated Haemoglobin (HbA1c) levels, which is seen as giving a longer term view of plasma glucose levels.

Test	Pre-diabetes	Diabetes
HbA1c	>=5.7% - 6.4%	6.5% or >
Fasting Plasma Glucose	>=100 – 125 mg/dl	126 or >
Oral Glucose Tolerance test	>= 140 – 199 mg/dl	200 or >

8.2 The established view is that pre-diabetes will proceed to type 2 diabetes unless action is taken. It is a potentially reversible condition. It is possible to decrease risk by as much as 58% by losing 7% of body weight or more and exercising moderately for 30 minutes per day.

8.3 Risk factors for pre-diabetes are as follows:

- Overweight or obese
- Waist size >40 inches for a male, >35 inches for a female
- Inactivity
- Age > 45 years
- Family history, parent or sibling with type 2 diabetes
- Race
- Gestational diabetes
- Polycystic ovary syndrome
- Disturbed sleep including obstructive sleep apnoea

8.4 Also, high blood pressure, low levels of HDL, high levels of triglycerides, obesity are associated with insulin resistance.

8.5 Without lifestyle change 15–30 % of those with pre-diabetes proceed to diabetes within five years. It is possible that metformin can prevent progression as well as controlling blood sugar.

<i>Intervention</i>	<i>Level of evidence of effectiveness</i>	<i>Level of evidence on cost</i>
Intensive lifestyle intervention to reduce weight, improve diet and increase levels of physical activity	2+	2+

Diabetic control and vascular complications, particularly in type 2 Diabetes

8.6 Normoglycaemia in diabetes is considered to be associated with less vascular complications of diabetes. Close control is more readily achievable with Type 1 diabetes where plasma glucose can be more easily titrated against insulin dose. In type 2 diabetes, the doses of oral hypoglycaemic agents are much more fixed and control is a mixture of drug treatment, dietary control and physical activity.

8.7 NICE guideline CG87 covers the treatment of type 2 diabetes, and suggests an initial approach of diet and physical activity management, which then progresses to metformin treatment, which can be incrementally increased,

and then the addition of a sulphonylurea for those in whom control has still not been achieved.

- 8.8 Rather than controlling therapy on plasma glucose alone, NICE recommends the use of Haemoglobin HbA1c, glycated haemoglobin. The general target value recommended is 6.5%, but the patient may need to agree a level above this to avoid hypoglycaemia and to fit in with their lifestyle. In order to monitor treatment and progress HbA1c can be measured at between two and six monthly intervals.
- 8.9 The aim of optimal control in Type 2 diabetes has been quoted as keeping HbA1c at a level of less than 7%, as above. However, a number of studies have suggested that this may not necessarily be best for all patients, and that wider considerations need to be taken into account, the so-called 'glucose triad' of HbA1c, fasting plasma glucose and postprandial glucose. It is argued that as well as HbA1c both fasting and postprandial glucose need to be targeted.
- 8.10 Current doctrine, which suggests that keeping HbA1c less than 6% and the lower the better, reduces the risk of complications is based on the UKPDS trial. However, later trials, such as ACCORD (Action to Control Cardiovascular Risk in Diabetes) have suggested that this might be dangerous, this trial was stopped early as it was found that there was an increased risk of death in patients trying to keep their HbA1c less than 6%, in particular, severe hypoglycaemia was associated with an increased risk of death. Also the Action on diabetes and vascular disease preterax and diamicon modified release controlled evaluation (ADVANCE), which had an HbA1c target of less than 6.5% failed to demonstrate that achievement of good glycaemic control was associated with reduction of cardiovascular risk (Artac, 2013). These findings were also supported by results from a new UK retrospective cohort study conducted in UK patients with type 2 diabetes. Low and high HbA1c was associated with increased mortality and cardiac events, the lowest risk was at 7.5% HbA1c.

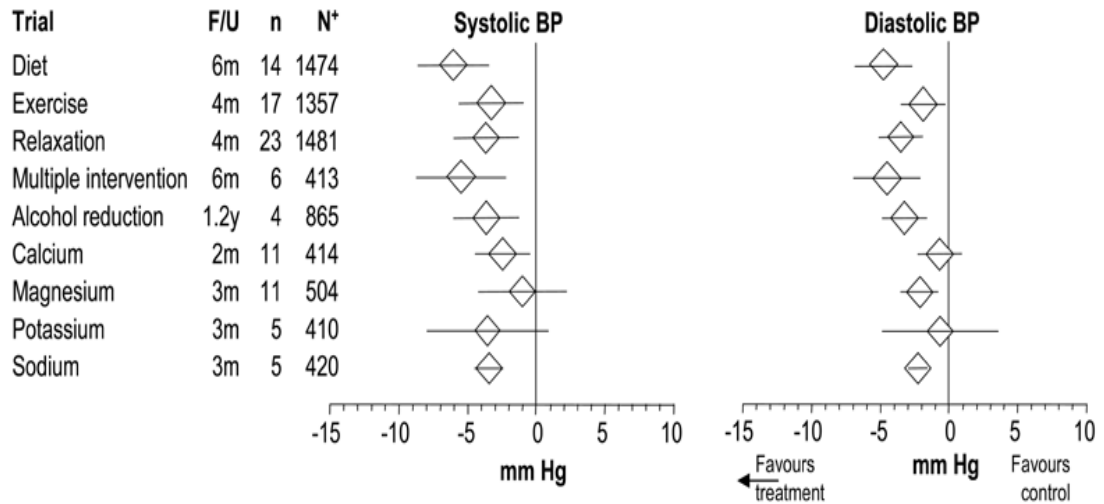
<i>Intervention</i>	<i>Level of evidence for effectiveness</i>	<i>Level of evidence on cost</i>
Tight diabetic control	2-	2+

9. Hypertension

- 9.1 Hypertension is an important risk factor for the development of cardiovascular disease. Overall about a quarter of all adults have hypertension, as the prevalence of hypertension increases with age, about half of all people over 60 years of age have hypertension. As one of the conditions screened for in the Health Check, it can be expected that more people will be diagnosed with hypertension, and in order to fully realise the potential benefits, they need to be correctly definitively diagnosed, and if appropriate, treated according to guidelines (NICE CG127, Aug 2011). The definition of treatable hypertension is a blood pressure of 140/90 and anyone who has a blood pressure in excess of this at the Health Check should be referred to their GP for further monitoring. The next stage is either ambulatory blood pressure monitoring

over a waking day, during which time the blood pressure should be measured at least twice every hour, giving a minimum of 14 readings, the average of which is taken, and if more than 140/90 hypertension is diagnosed.

Figure 2: Impact of combined lifestyle interventions on blood pressure: findings from randomised controlled trials

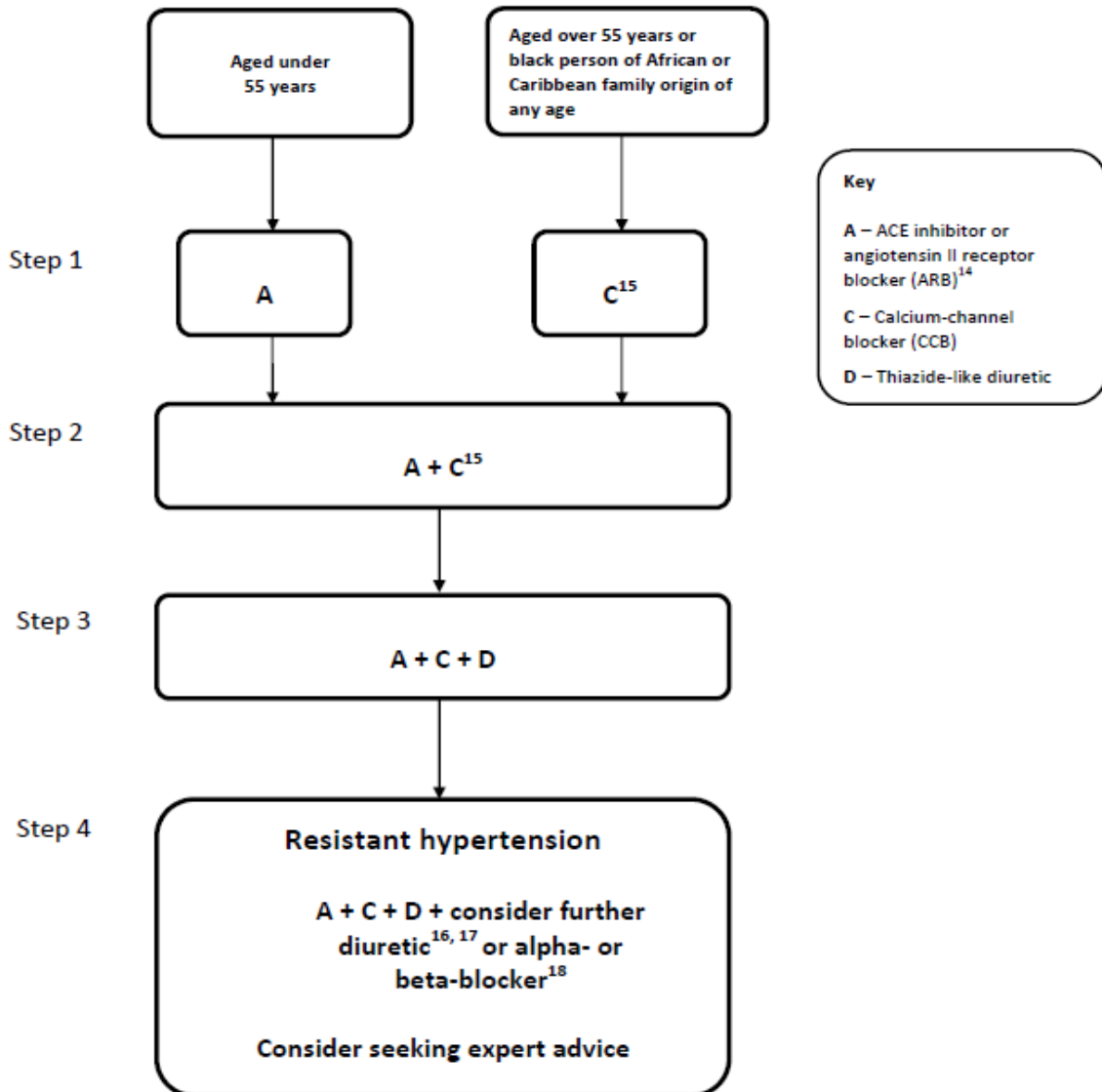


All estimates are DerSimonian-Laird Weighted Mean Differences, see individual meta-analyses for details
 + F/U: Median duration of follow up in months or years; n: number of studies; and, N: subjects randomised

Source: NICE guidance CG127 Hypertension (NICE 2011)

- 9.2 The alternative is home blood pressure monitoring, the patient should take two consecutive blood pressure readings, seated and relaxed, on at least two occasions during the day, preferably morning and evening, this needs to be repeated for at least four days, preferably seven. The first days readings should be discarded, and the rest averaged, to determine whether the patient's blood pressure exceeds the 140/90 threshold.
- 9.3 Apart from the level of hypertension measured, an assessment of target organ damage needs to be made, this includes the heart, kidneys and an assessment of whether retinopathy exists.
- 9.4 Using this information, the algorithms in NICE guidance CG127 (see figure 3 below) will guide initial treatment, which also depends on the patient's racial origin.

Figure 3: Algorithm for the Treatment of Hypertension



¹⁴ Choose a low-cost ARB.

¹⁵ A CCB is preferred but consider a thiazide-like diuretic if a CCB is not tolerated or the person has oedema, evidence of heart failure or a high risk of heart failure.

¹⁶ Consider a low dose of spironolactone¹⁷ or higher doses of a thiazide-like diuretic.

¹⁷ At the time of publication (August 2011), spironolactone did not have a UK marketing authorisation for this indication. Informed consent should be obtained and documented.

¹⁸ Consider an alpha- or beta-blocker if further diuretic therapy is not tolerated, or is contraindicated or ineffective.

Source: British Hypertension Society & NICE(CG127 2011)

<i>Intervention</i>	<i>Level of evidence for effectiveness</i>	<i>Level of evidence on cost</i>
Antihypertensive treatment to maintain blood pressure within 140/90 for the primary and secondary prevention of cardiovascular disease	1++	1++

10. Cholesterol

- 10.1 Cholesterol is considered one of the major risk factors for cardiovascular disease. NICE guideline CG181 makes recommendations on statin use in the primary and secondary prevention of cardiovascular disease. NICE now prefers to consider non-HDL cholesterol rather than LDL cholesterol (Total cholesterol – HDL cholesterol). This needs to be based on a fasting sample.
- 10.2 The statin recommended by NICE is atorvastatin, used at a dose of 20mg daily for primary prevention, and 80mg daily for secondary prevention.

<i>Intervention</i>	<i>Level of evidence for effectiveness</i>	<i>Level of evidence on cost</i>
Prescription of statins for the primary and secondary prevention of cardiovascular disease	2++	2++ (depending on where the line is drawn for primary prevention)

11. Secondary Prevention for Cardiovascular Disease

Stroke

- 11.1 Stroke ranks seventh as one of the major causes of death in North, East and Western Devon it is also a major cause of disability and death. Consequently, any intervention that can reduce its incidence and impact can potentially have substantial benefits.
- 11.2 A stroke occurs when the blood supply to part of the brain is disrupted. This can happen either when a clot, or thrombus, forms in an artery (thrombotic stroke), or when one which has formed in another part of the body travels to the arteries of the brain (embolic stroke). A stroke can also be the result of the rupture of a blood vessel (haemorrhagic stroke).
- 11.3 The majority of risk factors for thrombotic and haemorrhagic stroke are the same as those for other atherosclerotic cardiovascular disease; hypertension, high cholesterol, diabetes, low levels of physical activity and poor diet. Prevention of this process is therefore long term and amenable to the same

interventions as primary prevention of cardiovascular disease. However, embolic stroke can be more amenable to secondary preventive action as it seeks to either prevent the clot forming or repair the problem causing the clot such as atherosclerosis of the carotid artery. Carotid endarterectomy, where the lining of the carotid artery is cleaned out surgically is the major surgical intervention that can be employed to prevent recurrent stroke. The other major preventative condition that can cause stroke is atrial fibrillation.

11.4 Some strokes are preceded by Transient Ischaemic Attacks (TIAs), or ‘mini strokes’, where the effects of the event last only hours and the individual apparently suffers no loss of function. These people are at higher risk of further TIAs or a full stroke and depending on their risk factors need specialist assessment either in the next 24hrs or the next week for assessment and preventative treatment.

11.5 Standards for stroke care (SIGN) to minimise death and disability:

- Rapid transfer to hospital.
- Rapid triage.
- Access to specialist stroke services, including a coordinated multidisciplinary stroke team on a stroke unit.
- Rapid brain imaging (ischaemic/haemorrhagic).
- Rapid specialist assessment Ischaemic stroke in anterior carotid territory – potential surgery – carotid imaging.
- If possible to intervene within 4.5 hrs of onset then prescribe thrombolysis for ischaemic stroke.
- Ischaemic stroke in middle carotid artery territory – if massive oedema, decompress within 48 hrs.

11.6 Secondary prevention of stroke (SIGN):

- Low dose aspirin and dipyridamole for ischaemic stroke or TIA (possibly clopidogrel).
- Statin for all people with ischaemic stroke or TIA.
- Haemorrhagic stroke – no statin.

<i>Intervention</i>	<i>Level of evidence of effectiveness</i>	<i>Level of evidence on cost</i>
Specialist stroke service	2++	2++
Antiplatelet drugs and statins for secondary prevention of stroke	2++	2++

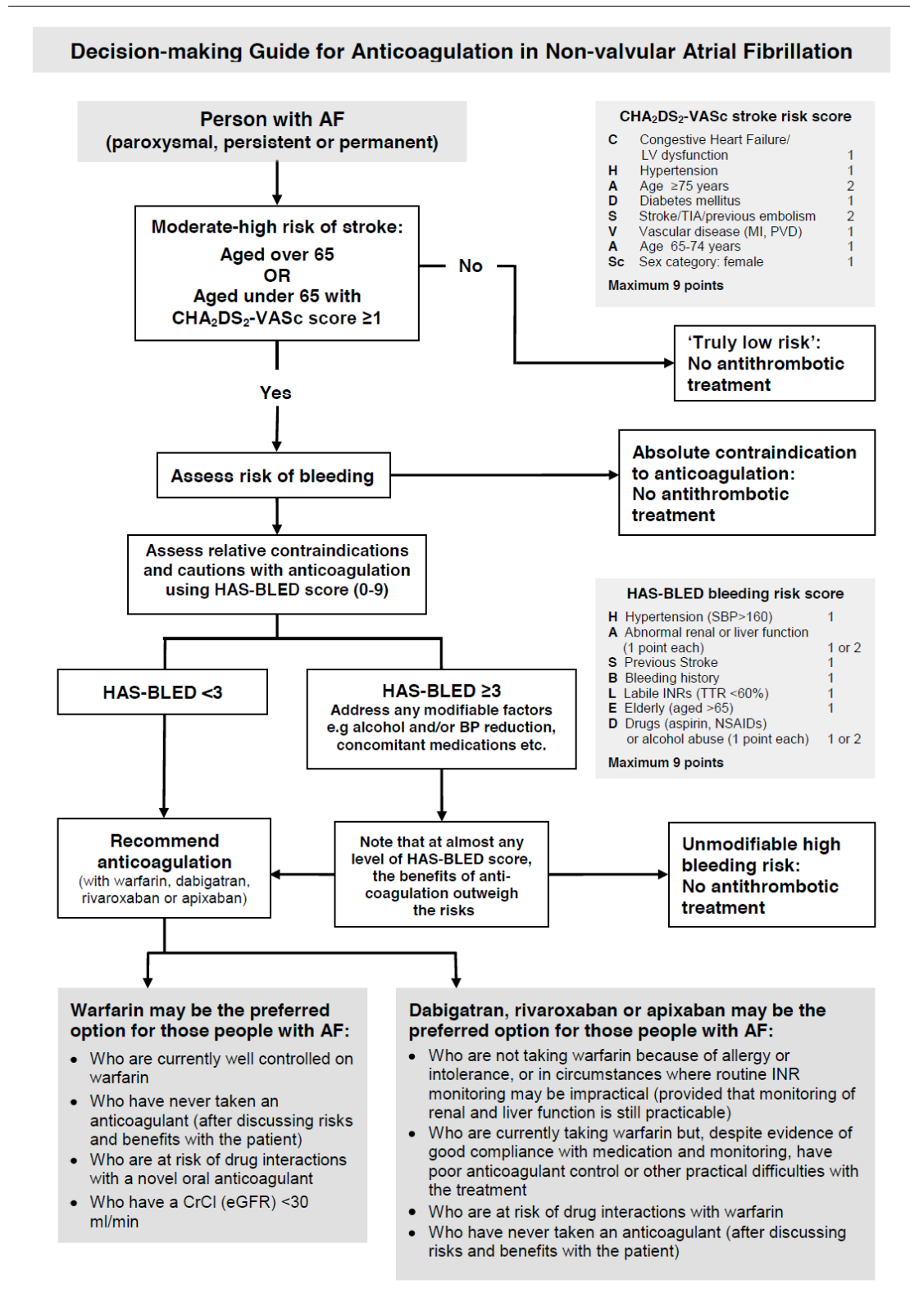
Atrial fibrillation

11.7 A major cause of embolic stroke is the dysrhythmia of the heart known as atrial fibrillation (AF). In atrial fibrillation, the atria of the heart beat at their own rate and this is transmitted through to the ventricles to a variable degree, causing an irregularly irregular heart beat and pulse. The turbulence which this causes in the atria can cause thrombus formation. The thrombus can then

be embolised out into the carotid arteries and thence to the brain. Many cases are potentially preventable by anticoagulation, preventing the clots from forming. It is estimated that currently only 50% of people with atrial fibrillation are receiving prophylactic anticoagulation for a condition that increases the risk of stroke by five.

- 11.8 Primary treatment of atrial fibrillation consists of the treatment of its underlying cause (ischaemia - revascularisation, rendering euthyroid etc), controlling the irregular rate to an acceptable level or reverting the rhythm to normal.
- 11.9 Extrapolation from National figures Lang (2010) suggests that there may be 19000 people with atrial fibrillation in Devon, of whom roughly 4000 are unaware that they have the condition. The same data suggests that roughly 2,200 admissions per year in Devon are due to atrial fibrillation, and roughly 220 strokes. On this basis it is estimated that 120 of these strokes are avoidable and 35 deaths. However, it is suggested that at present only 50% of this potential is being realised because of either patients not receiving anticoagulants, or not remaining in the therapeutic range. Warfarin, a Vitamin K antagonist, is the standard for anticoagulation, it has a good record of safety and efficacy, and the drug itself is cheap. Apart from the risk of haemorrhage, the principle disadvantages are that it has some important drug interactions and dosage requires regular monitoring. There are a family of newer anticoagulants, which work by antagonising factor Xa and do not require monitoring, although the drugs themselves are more expensive.
- 11.10 Atrial fibrillation is covered in NICE guidance CG180, which references the American College of Cardiology (ACC) guidelines and toolkit. This covers the assessment of symptoms, stroke risk assessment (CHA2DS2 – VASC), bleeding risk HAS – BLED score and a combo calculator to assess the benefits of each type of anticoagulant. There is also a therapy flow chart to assist in choosing an anti-arrhythmic agent and a dosing table for these agents. They incorporate comprehensive patient information, including information about cardioversion. The Peninsula Heart and stroke network have published guidance (Peninsula Heart and Stroke Network, 2013) which mirrors NICE and the American guidance on anticoagulation ‘New oral anticoagulants for the prevention of stroke and systemic embolisation in atrial fibrillation’ (Thorn et al, 2014) . All the guidance has warfarin as the anticoagulant of first choice, with the other agents being used where warfarin is not tolerated, control is poor or there are other reasons to choose a different agent.

Figure 4: Novel oral anticoagulant in artificial fibrillation



Source: Guidance produced by the Peninsula Heart & Stroke Network in conjunction with Paul Hughes, Deputy Head of Prescribing, NHS Cornwall & IOS, February 2013

11.11 The principle current alternative oral anticoagulants are; Apixaban (NICE 2013 TA275), dabigatran etexilate (NICE 2012 TA249), Rivaroxaban (NICE 2012 TA256) and Dromedarone (NICE 2010 TA197) all of which are factor Xa antagonists.

<i>Intervention</i>	<i>Level of evidence for effectiveness</i>	<i>Level of evidence on cost</i>
Prescription of warfarin for all patients with atrial fibrillation meeting criteria	1++	1++
Use of novel anticoagulants	2+	2+

Secondary prevention of myocardial infarction (MI) NICE 2013 CG 172

11.12 Lifestyle modification and exercise form an integral part of secondary prevention of myocardial infarction. NICE now feel confident on the basis of accumulated evidence to recommend cardiac rehabilitation for all patients. The NICE guidance recognises that multimorbidity and polypharmacy are likely to be factors in managing this group of patients.

Cardiac rehabilitation

11.13 Evidence now clearly demonstrates the benefits of cardiac rehabilitation but currently only 44% of patients start a cardiac rehabilitation programme after myocardial infarction, with an average of 53 days to initiation. Benefit is maximised if this can be started soon after hospital discharge.

11.14 NICE recommends:

- **All patients** (regardless of age) are given advice about and **offered a cardiac rehabilitation programme with an exercise component**
- Starting as soon as possible, ideally **within 10 days of discharge from hospital**
- Patients with LV dysfunction who are stable can safely be offered exercise

11.15 However, many patients do not seem to be engaging with cardiac rehabilitation while in the midst of secondary care. There is an opportunity in general practice to positively influence patients and explain the benefits.

Lifestyle

11.16 People who have had an myocardial infarction should adopt a **Mediterranean style diet** (also low sodium, regular exercise, stop smoking, moderate alcohol (no minimum recommendations) and lose weight.

11.17 The guideline removes the recommendation for oily fish or omega 3 supplementation; new evidence since the original 2007 guideline failed to demonstrate any cardiac benefit from either.

<i>Intervention</i>	<i>Level of evidence of effectiveness</i>	<i>Level of evidence on cost</i>
Cardiac rehabilitation	1+	2+
Lifestyle modification	2+	2-

Drug therapy

11.18 All patients who have had an acute myocardial infarction should be offered:

- **ACEi** - titrate to maximum tolerated dose, continue indefinitely
- **Aspirin** - 75 mg OD, give PPI if history of dyspepsia
- **Beta blocker** - titrate to maximum tolerated dose, use for at least 12 months
- **Statin** - commonly 40 mg simvastatin or 10 mg atorvastatin (as tolerated)

Beta blockers

11.19 **If a patient has normal LV function, then after one year consider stopping** - benefits in this group have not been established.

- **If patient has LV dysfunction, then continue indefinitely**
- This implies that ALL patients will need an echocardiogram to assess LV function (usually as an inpatient)

Anti-platelets

11.20 For all patients

- **Take aspirin indefinitely after myocardial infarction unless contraindicated or intolerant**
- In patients who are intolerant of aspirin, use clopidogrel monotherapy

<i>Intervention</i>	<i>Level of evidence of effectiveness</i>	<i>Level of evidence on cost</i>
Prescribing, aspirin, an ACE inhibitor a beta-blocker and a statin post myocardial infarction for all patients	1++	2+

11.21 For those who have had a NSTEMI:

- Offer clopidogrel for up to 12 months

11.22 **For those who have had a STEMI medically managed with or without thrombolysis:**

- Offer clopidogrel for at least 1 month, and consider for up to 12 months

11.23 **For those who have had a STEMI who have had a stent (drug eluting or bare metal):**

- Offer clopidogrel for up to 12 months

11.24 **For those who have had a STEMI who have had a CABG:**

- Use a second antiplatelet for up to 12 months

11.25 **In patients with other clinical vascular disease, switch aspirin to clopidogrel monotherapy after 12 months (as per NICE technology appraisal 210 from 2010)**

11.26 **Ticagrelor is an alternative option** for patients post-STEMI and PCI or NSTEMI

11.27 **Anti-coagulation combined with anti-platelets** - The guideline is clear on the benefits of this, at least up until 12 months.

- Consider bleeding, thromboembolic and cardiac risks.
- **Unless there is a high bleeding risk, continue anti-coagulation and add anti-platelet:**
 - Aspirin if MI patient was medically managed or had a balloon angioplasty or CABG.
 - Clopidogrel if MI and PCI with bare-metal or drug-eluting stents
- After 12 months post-MI, consider whether anti-platelet therapy is still required (probably be done by the cardiologist).
- Little evidence either way relating to NOACs (dabigatran, apixaban or rivaroxaban) so if a patient is on one and then has an MI, consider switching to warfarin.

11.28 **Other recommendations**

- In patients who have an acute MI and also either symptoms or signs of heart failure and left systolic dysfunction, consider adding an aldosterone antagonist (e.g. spironolactone) within 3-14 days of the cardiac event
 - Monitor renal function and potassium - if hyperkalaemia is a problem, halve or stop the aldosterone antagonist.

<i>Intervention</i>	<i>Level of evidence of effectiveness</i>	<i>Level of evidence on cost</i>
12 months anticoagulation and antiplatelet for patients post MI	1+	2+
Use Spironolactone or other aldosterone antagonist for heart failure for patients already on loop diuretic and ACEI	1+	2+

Heart failure specialist nurse

- 11.29 Heart failure is a life limiting condition that people can live with for a number of years and requires a considerable amount of costly medical care. The National Clinical Audit of Heart failure showed annual mortality among heart failure patients of 30% at one year after diagnosis. Access to a specialist heart failure service reduced mortality significantly to 23%. It is felt that discontinuity of care is responsible in part for this difference in outcome and in consequence the favoured model of care has become a heart failure multidisciplinary team led by a heart failure cardiologist working in collaboration with the GP and the Heart Failure Nurse Specialist (HFNS).
- 11.30 All patients with Heart failure due to Left ventricular systolic dysfunction should be offered ACE inhibitors and beta blockers licensed for heart failure. Patients who require additional therapy should be given either an aldosterone antagonist, an angiotensin II receptor antagonist or hydralazine plus nitrate. Newly diagnosed patients should have access to a supervised group rehabilitation programme designed for patients with heart failure, the patient should be stable and not have a condition or device that precludes exercise based rehabilitation, the programme should include an educational and psychological component.

Summary

<i>Intervention</i>	<i>Level of evidence of effectiveness</i>	<i>Level of evidence on cost</i>
Health failure specialist nurse and rehabilitation	2+	2-

12. Prevention of Chronic Obstructive Pulmonary Disease

- 12.1 Chronic Obstructive Pulmonary Disease (COPD) is one of the major causes of mortality in Devon, ranking third overall. It is a disease which also causes substantial morbidity, with frequent GP attendance and hospital admissions as well as often progressive respiratory disability. Pathogenesis of the condition is thought to largely be from cigarette smoking and pollution. The disease is characterised by episodic exacerbations when lung function deteriorates, followed by recovery, but with ongoing lung damage.
- 12.2 Strategic preventative approaches then would include collaborative working with District Councils to meet new air quality standards and continuing to work to reduce smoking prevalence.
- 12.3 There may be benefit in identifying people with COPD at an early stage, standard spirometry is not easily accessible in General practice. There is some evidence (Torn et al, 2012) that a mini-spirometer, a smaller, less bulky and more easily used machine is available that can be used to screen at-risk populations for standard spirometry. In one study, Primary care patients aged 45-85 years with a smoking history of >15 pack-years were selected. Data were collected on the Clinical COPD Questionnaire (CCQ), Medical Research Council (MRC) dyspnoea scale and smoking habits. Lung function (forced

expiratory volume in 1 and 6 s; FEV1 and FEV6, respectively) was measured by mini-spirometer (copd-6), followed by diagnostic standard spirometry. A total of 305 patients (57% females) of mean (SD) age 61.2 (8.4) years were recruited from 21 centres. COPD was diagnosed in 77 patients (25.2%) by standard diagnostic spirometry. Using the copd-6 device, mean (SD) FEV1/FEV6 was 68 (8%) in patients with COPD and 78 (10%) in patients without COPD. Sensitivity and specificity at a FEV1/FEV6 cut-off of 73% were 79.2% and 80.3%, respectively. Screening with the copd-6 device significantly predicted COPD. Gender, CCQ, and MRC were not found to predict COPD. Using the copd-6 as a pre-screening device, the rate of COPD diagnoses by standard diagnostic spirometry increased from 25.2% to 79.2%. Although the sensitivity and specificity of the copd-6 could be improved, it might be an important device for pre-screening of COPD in primary care and may reduce the number of unnecessary spirometric tests performed.

- 12.4 At an individual level it is thought that two thirds of exacerbations are caused by respiratory tract infections or air pollution, but one third present without an identifiable cause (NICE CG172, 2013). Many authorities recommend 23 valent pneumococcal vaccination as a preventative measure, but there is currently no good evidence that it reduces exacerbations. Annual influenza vaccination is also recommended with a higher level of evidence of effectiveness (Nicoll et al 2008). Smoking cessation is recommended as it mitigates lung function decline and reduces symptoms. Pulmonary rehabilitation is recommended if there has been an exacerbation within the last four weeks, but not if it was longer ago. Pulmonary rehabilitation improves quality of life, exercise tolerance and reduces dyspnoea. It is also suggested that access to a respiratory specialist monthly can help optimise therapy, which may prevent some exacerbations.
- 12.5 Pharmacologically, long-acting muscarinic antagonists (LAMA) are preferred to long acting beta agonists (LABA) as a first line to prevent exacerbations in moderate to severe disease (BMJ review 2014). The addition of a steroid to LAMA or LABA gives additional benefit with relative risk reductions of 14-24% relative to placebo, using fluticasone as the steroid doubles the risk of pneumonia. The combination of all three may be additive, but more studies are needed. Azithromycin taken prophylactically prevents exacerbations, but may prolong QT interval and increase risk of death from arrhythmia.
- 12.6 Pulmonary rehabilitation is a non-pharmacological, often multidisciplinary intervention intended to improve patient function after an exacerbation. It can be carried out on an outpatient basis in hospital, or alternatively at home or in a community clinic.
- 12.7 A number of trials (Liu et al 2014, Casey et al 2012, Puhan et al 2005) have been carried out into the effectiveness of pulmonary rehabilitation, including a meta-analysis of RCTs, the general conclusion of which has been that pulmonary rehabilitation is effective in improving patient-based factors, such as exercise tolerance, dyspnoea and general quality of life. However, there is no evidence that it improves lung function.
- 12.8 A Cochrane review from 2011 (Puhan et al 2011) suggested that evidence from nine small studies of moderate methodological quality suggest that pulmonary rehabilitation is highly effective and safe in reducing hospital admission and mortality, and improve health based quality of life in COPD

patients who have recently had an exacerbation. An earlier review suggested that respiratory rehabilitation reduced the relative risk of readmission by 0.26 (0.12 - 0.54), and the mortality relative risk by 0.45 (0.22 – 0.91). It also reduced the sensation of fatigue, improved exercise capacity, emotional functioning and control.

Summary

<i>Intervention</i>	<i>Level of evidence of effectiveness</i>	<i>Level of evidence on cost</i>
Stop smoking	1++	1++
Reduce pollution	1++	Not in A Devon context
Seasonal 'flu vaccination	2+	2+
Pneumococcal vaccination	4	2+
Appropriate prescribing of LAMAs, LABAs and steroids	2+	2-
Pulmonary rehabilitation	2+	2+

13. Dementia (NICE CG42)

13.1 Dementia is a largely irreversible, progressive degenerative illness with some different aetiologies but a similar clinical picture and course:

- Alzheimer's type
- Dementia with Lewy bodies (DLB) – similar to Dementia in Parkinson's disease
- Frontotemporal dementia
- Vascular dementia
- Mixed

Prevention

13.2 Primary prevention of vascular type as for cerebrovascular/cardiovascular disease, smoking, excessive alcohol consumption, obesity and diabetes. Some types have a genetic basis which is currently not amenable to early intervention.

13.3 **Clinical management of dementia:**

- A person with dementia may retain positive personality traits and personal attributes.
- However they may have a combination of; memory loss, language impairment, disorientation, personality change, difficulties with the

activities of daily living, self-neglect, psychiatric symptoms and out-of-character behaviour.

- If a diagnosis of dementia is suspected, then this can be further explored using the mini mental state examination, the six item cognitive impairment test, or the seven minute screen. In anyone who presents with mild cognitive impairment, dementia should be considered.
- Single point of referral for further assessment – memory assessment service.
- Imaging by preferably MRI or CT recommended to exclude other cerebral pathology and to confirm sub-type of dementia.
- Secondary prevention, address risk factors for cerebrovascular disease, smoking, excessive alcohol consumption, obesity and diabetes.
- Manage according to dominant aetiology/sub-type.
- All patients should have access to a structured group cognitive stimulation programme.
 - Acetylcholinesterase inhibitors are not suitable for people with vascular dementia.
- Acetylcholinesterase inhibitors choose from donepezil, galantamine, or rivastigmine for mild or moderate dementia, start with least expensive.
- Monitor response and side effects, can switch if side effects are a problem, stop if no response.
- Memantine can be used for severe dementia or if side effects from acetylcholinesterase inhibitors make these unacceptable, or they don't work.

Summary

<i>Intervention</i>	<i>Level of evidence of effectiveness</i>	<i>Level of evidence on cost</i>
Primary prevention of dementias – healthy lifestyle combined with mental activity	2 -	2-
Use of acetylcholinesterase inhibitors to improve symptoms of dementia	2+	2+

14. The Treatment of Anxiety Disorders

14.1 Anxiety disorder is subdivided into a number of sub-categories:

- Generalised anxiety disorder, prevalence 4.4% of population.
- Social anxiety disorder.
- Post-traumatic stress disorder, prevalence 3.0% of population.
- Panic disorder, prevalence 1.1% of population.
- Obsessive compulsive disorder prevalence 1.1% of population.
- Body dysmorphic disorder.

- 14.2 These sub-conditions may occur singly or in combination, for instance, it is not uncommon for individuals to have generalised anxiety disorder (GAD) and panic disorder co-existing. The symptoms of anxiety are very common in the population, but only a minority of people ever receive treatment from health services. The mixed disorder of anxiety/depression is also recognised, commonly the depressive element is treated, but the anxiety may be missed. There is a wide spectrum of severity, from minor symptoms that do not interfere with day-to-day functioning, to a disability that severely limits activity. Anxiety is commonly a lifelong condition, with a pattern of relapses and remissions. Assessment of severity of frequency and intrusiveness of anxiety is done using the GAD 2 scale, this uses two questions to assess how often an individual feels nervous and the other question looks at how much control the individual has over controlling worrying. There is also a GAD 7 scale, but as this is longer and not much more informative than GAD 2, GAD 2 is the standard primary care tool. (NICE CG113)
- 14.3 The expectation of primary care is to recognise the disorder, and define the type(s) of the disorder present and define its severity in terms of its impact on the individuals function in terms of employment, leisure and interpersonal relationships. Primary care should be able to offer help based on the stepped care table in NICE CG113. The preferred interventions are the evidence based psychological interventions, but SSRI antidepressants are suggested as a possible pharmacological intervention. The suggestion is that benzodiazepines or antipsychotics should not be prescribed unless specifically indicated, and the guidance suggests that this should be recommended by a specialist mental health service. People under treatment for anxiety disorder should have their treatment response assessed at each session and treatment adjusted as necessary.

Summary

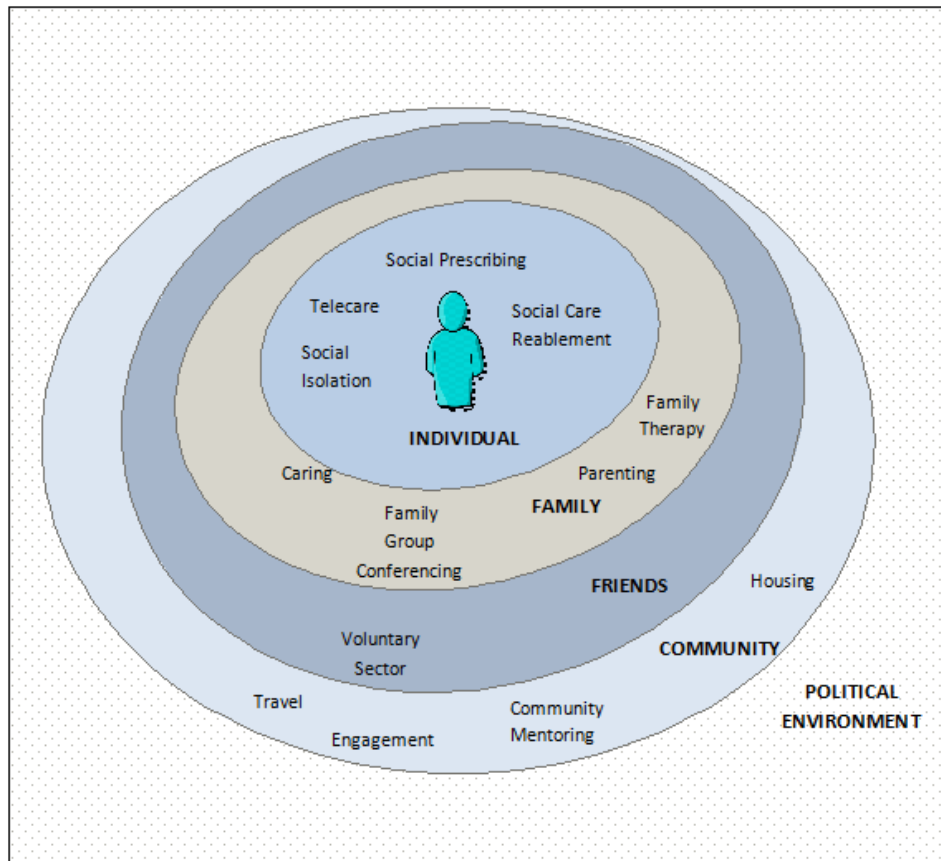
<i>Intervention</i>	<i>Level of evidence of effectiveness</i>	<i>Level of evidence on cost</i>
Stepped treatment of anxiety (CBT), starting with education and information	1++	1++
Use either high intensity psychological intervention (CBT or applied relaxation) or drug therapy with an SSRI if low intensity psychological interventions fail	1+	1+

PART B

Update of Evidence for Social & Community Interventions

Figure 5 acknowledges the role that a number of “spheres” of support which determine the health and wellbeing of people living in Devon - individual, family, friends and community (together with the prevailing political environment). The figure shows how the different social interventions considered in this paper to promote independence and wellbeing fall into these different “spheres”. The rapid review of the evidence base for each of the interventions is below.

Figure 5: Spheres of support



15. Digital Solutions – Assistive Technology (Telecare and Telehealth)

Telecare was defined in the Our Health Our Care Our Say (DH, 2006) White Paper as “a combination of equipment monitoring and response that can help individuals to remain independent at home. It can include basic community alarm services able to respond in an emergency and provide regular contact by telephone as well as detectors which detect factors such as falls fire or gas and trigger a warning to a response centre. Telecare can work in a preventative or monitoring mode for example through monitoring signs which can provide early warning of deterioration prompting a response from family or professionals. Telecare can also provide safety and security by protecting against bogus callers and burglary.”

Telecare differs from telehealth, which has a narrower focus on clinical symptoms and information.

Summary

<i>Intervention</i>	<i>Level of evidence on effectiveness</i>	<i>Level of evidence for cost</i>
Telecare	1+	1+
Telehealth	1++	1++

Recommendation

- 15.1 Some forms of telecare in vulnerable groups have been shown to be effective but better data on long-term outcomes and on cost-benefit are needed to support local implementation.

Update

- 15.2 No further evidence is available on telecare.
- 15.3 A whole systems demonstrator telehealth trial has now been fully evaluated with findings that telehealth does not seem to be a cost effective addition to standard support and treatment’ (Henderson, 2013) and an evidence synthesis of 20 years of telemedicine in chronic disease management concluded that ‘the evidence base for the value of telemedicine in managing chronic diseases is on the whole weak and contradictory’ (Wooton, 2012)

16. Social media and social networks – (New)

Web 2.0 describes World Wide Web sites that emphasize user-generated content, usability, and interoperability. Although Web 2.0 suggests a new version of the World Wide Web, it does not refer to an update to any technical specification, but rather to cumulative changes in the way Web pages are made and used.

A Web 2.0 site may allow users to interact and collaborate with each other in a social media dialogue as creators of user-generated content in a virtual community, in contrast to Web sites where people are limited to the passive viewing of content. Examples of Web 2.0 include social networking sites, blogs, wikis, folksonomies, video sharing sites, hosted services, Web applications, and mashups (Wikipedia; http://en.wikipedia.org/wiki/Web_2.0, accessed 22 March 2015).

Summary

<i>Intervention</i>	<i>Level of evidence on effectiveness</i>	<i>Level of evidence for cost</i>
Web-based technologies	2-	Evidence not available

- 16.1 The dramatic growth of Web 2.0 technologies and online social networks offers immense potential for the delivery of health behaviour change campaigns. However, it is currently unclear how online social networks may best be harnessed to achieve health behaviour change (Maher, 2014).
- 16.2 A systematic review assessed whether health behaviour change interventions that use online social networks are effective (Maher, 2014). Ten studies involving a total of 113,988 participants (ranging from n=10 to n=107,907) were included in the review. Interventions included commercial online health social network websites (n=2), research health social network websites (n=3), and multi-component interventions delivered in part via pre-existing population online social network websites (Facebook n=4 and Twitter n=1). The authors concluded that there is very modest evidence that interventions incorporating online social networks may be effective. Further research is needed to determine how to maximise retention and engagement, whether behaviour change can be sustained in the longer term, and to determine how to exploit online social networks to achieve mass dissemination.
- 16.3 Draft NICE Guidance has been published on Dementia, disability and frailty in later life – mid-life approaches to prevention (NICE, 2014). The aim of this guidance is to increase the number of older people who can lead independent, healthy and active lives. In developing this guidance, NICE commissioned three separate reviews of the evidence (NICE, 2014a). Review 3 assessed the effectiveness and cost-effectiveness of mid-life interventions for increasing the uptake and maintenance of healthy lifestyle behaviours and the prevention or delay of dementia, disability, frailty and non-communicable chronic diseases related to modifiable lifestyle risk factors. The review concluded that internet and telephone services are beneficial when attempting to produce positive changes in physical activity; however, effect sizes are small and some evidence suggested that technological solutions are no more effective than print materials, face-to-face programmes and other health promotion methods. There is insufficient evidence to assess whether face-to-face interventions or remote approaches are more effective at promoting physical activity. Internet and telephone technologies should therefore be considered as an addition to other delivery methods and not seen or used as a replacement for services. The ability of Internet and telephone delivered interventions to produce change in long-term physical activity remains unclear.

- 16.4 The review from the Draft NICE Guidance (NICE, 2014a) also concluded that lifestyle interventions targeting more than one behaviour can be effective in improving health behaviour and that internet-based methods to deliver these interventions can be effective. However, social networking sites are not recommended for delivery of lifestyle interventions to people in mid-life.
- 16.5 The review did not consider the wider use of ‘apps’ or ‘connected thing’ such as internet use to control heating and other devices and wider application.

17. Social Care Reablement

Reablement involves services for people with poor physical or mental health that help them accommodate their illness by learning or relearning the skills necessary for daily living (CSIP, 2007 quoted in Allen and Glasby, 2010). It is different from rehabilitation, which involves services for people with poor physical or mental health to help them get better.

Original Summary

<i>Intervention</i>	<i>Level of evidence on effectiveness</i>	<i>Level of evidence for cost</i>
Social care reablement	2-	2-

Original Recommendation

- 17.1 Making decisions about local spending on reablement may be easier when national studies of effectiveness and cost-benefit have been completed.

Update

- 17.2 The prospective study of reablement services across a number of local authorities – for which interim findings were only previously available - has been completed (Glendinning 2010). The study examined the immediate and longer-term impacts of home care reablement, the cost-effectiveness of the service, and the content and organisation of reablement services. People who received home care reablement were compared with a group receiving conventional home care services, both groups were followed for up to one year. The study found that:

- Reablement was associated with a significant decrease in subsequent costs of social care service use.
- Reablement had positive impacts on users' health-related quality of life and social care-related quality of life, in comparison with users of conventional home care services.
- Using the National Institute for Health and Clinical Excellence cost-effectiveness threshold, reablement was cost effective in terms of health and social care costs.
- The reduction in social care costs was almost entirely offset by the initial cost of the reablement intervention. The average cost of a reablement

episode was 2,088 pounds with a mean cost of 40 pounds per hour of service user contact time.

- 17.3 A Cochrane Systematic Review is underway – results not yet available - to assess the effects of home-care 'reablement' services compared to usual care, or to a wait list control group, in terms of maintaining and improving the functional independence of older adults.
- 17.4 The Social Care Institute for Excellence (which is NICE accredited) concludes that there is good evidence that reablement improves service outcomes (prolongs people's ability to live at home, and removes or reduces the need for standard home care). There is moderately good evidence that reablement improves outcomes for users, in terms of restoring the ability to perform activities of daily living (ADL) or improving morale. Where users' views have been collected, users welcome the emphasis on helping them to regain their independence and level of function (SCIE 2015).

Updated Summary

<i>Intervention</i>	<i>Level of evidence on effectiveness</i>	<i>Level of evidence on cost</i>
Social care reablement	2++	2++

Updated Recommendation

- 17.5 There is good evidence that reablement improves services outcomes (prolonging people's independence) and moderately good evidence that it improves outcomes for users (in terms of restoring the ability to perform activities of daily living or improving morale). There is evidence that reablement can result in longer-term cost savings (although it is generally more expensive to deliver than the control).

18. Intermediate Care

Intermediate care is provided to individuals who would otherwise face long hospital stays or be referred to in-patient care inappropriately. It involves individualised care intended to maximise independence and enable individuals to live in their own homes. Intermediate care involves a single comprehensive assessment framework and cross-professional working and information sharing. It should be provided for six weeks at most. (Adapted from DH, 2001)

Summary

<i>Intervention</i>	<i>Level of evidence on effectiveness</i>	<i>Level of evidence for cost</i>
Intermediate care	2+	2-

Recommendation

- 18.1 Specific forms of intermediate care have the potential to be beneficial when aligned with other elements of the care system. Ongoing monitoring and evaluation of outcomes and costs are needed.

Update

- 18.2 No further evidence available

19. Self-care – (New)

Self-care (or self-management) support can be viewed in two ways: as a portfolio of techniques and tools to help patients choose healthy behaviours; and a fundamental transformation of the patient-caregiver relationship into a collaborative partnership (de Silva, 2011)

Summary

<i>Intervention</i>	<i>Level of evidence on effectiveness</i>	<i>Level of evidence for cost</i>
Self-care	2++	Evidence not available

- 19.1 The King's Fund report "*Transforming our health care system*" lists then priorities for commissioners: the first is "*Active support for self-management*" (Naylor, 2013). At the heart of the chronic disease management model (Wagner, 1996) is the informed, empowered patient with access to continuous self-management support (Naylor, 2013).
- 19.2 Self-management has potential to improve health outcomes in some cases, with patients reporting increasing in physical functioning (Challis, 2010). Self management can improve patient experience, with patients reporting benefits in terms of great confidence and reduce anxiety (Challis, 2010). Self-management programmes have been shown to reduce unplanned hospital admissions for chronic obstructive pulmonary disease and asthma (Purdy, 2010) and to improve adherence to treatment and medication (Challis, 2010), but evidence that this translates into cost savings is more equivocal. A cost analysis performed in the United States did indicate that expenditure in other parts of the system can be reduced (Stearns, 2000).
- 19.3 There are a number of well-established self-management programmes that aim to empower patients to improve their health. A review of the evidence has highlighted the importance of ensuring the intervention is tailored to the condition (De Silva, 2011). For example, structured patient education can be beneficial for people with diabetes, while people with depression may benefit more from cognitive and behavioural interventions.

19.4 Recent work conducted by the Richmond Group of Charities and The King's Fund (2012) called for patients to be offered the opportunity to co-created a personalised self-management plan which could include the following:

- Patient and carer education programmes.
- Medicines management advice and support.
- Advice and support about diet and exercise.
- Use of telecare and telehealth to aid self-monitoring.
- Psychological interventions (e.g. coaching).
- Telephone-based health coaching.
- Pain management.
- Patient access to their own records.

20. Social Prescribing – (New)

Social (or 'community') prescribing is a mechanism for linking patients with non-medical sources of support within the community. These might include opportunities for arts and creativity, physical activity, learning new skills, volunteering, mutual aid, befriending and self-help, as well as support with, for example employment, benefits, housing debt and legal advice or parenting problems. Social prescribing is usually delivered via primary care – for example, through 'exercise on prescription' or 'prescription for learning' although there is a range of different models and referral options (Scottish Development Centre for Mental Health, 2007)

Summary

<i>Intervention</i>	<i>Level of evidence on effectiveness</i>	<i>Level of evidence for cost</i>
Social prescribing	1-	Evidence not available

20.1 Brandling and House outline the concept, benefits and challenges of social prescribing (Brandling and House, 2009). In this article they highlight that the idea of social prescribing is simple but the reality is complex:

- How can a busy GP and others in primary care know what is available?
- There is a multiplicity of options
- What is the evidence that it works?
- Which patients might benefit?
- Is it yet another unwanted role to be foisted onto GPs, or a welcome path away from the medicalization of society?

20.2 There is no NICE guidance that looks specifically at the effect of social prescribing interventions on health and wellbeing outcomes.

20.3 The University of York, Centres for Reviews and Disseminations undertook a rapid appraisal of available evidence on the effectiveness of social prescribing (University of York, CRD, 2015). The review identified very little good quality

evidence. Most of the evidence that was available described evaluations of pilot projects but failed to provide sufficient detail to judge either success or value for money. The authors call for better evaluation of new schemes and recommend that evaluations should be of a comparative design; examine for whom and how well a scheme works; the effect it has and its costs.

- 20.4 An important focus of research in this area has been using social prescribing, to improve mental health (Scottish Development Centre for Mental Health, 2007). Cochrane Reviews have assessed the effect of individual interventions - including music (Maratos, 2008) and dance (Meekums, 2015) therapy - for depression. One systematic review (not a Cochrane Review) looked at the effect of exercise referral schemes in primary care on physical activity and improving health outcomes (Pavey, 2011). In line with the findings from the University of York review, all three reviews concluded that there was considerable uncertainty as to the effectiveness of the interventions.
- 20.5 One Cochrane Review examined the effect of music interventions on stress and anxiety in people with coronary heart disease (Bradt 2013). The review included 26 trials – individuals trials were small in size – with a total of 1369 participants. The findings suggest that listening to music may have a beneficial effect on systolic blood pressure and heart rate in people with coronary heart disease. Listening to music also appears to be effective in reducing anxiety in people with myocardial infarction, especially when they are given a choice of which music to listen to. Listening to music may also reduce pain and respiratory rate. However the size of the effects on pain and respiratory rate is small. Therefore, its clinical importance is unclear. Finally, listening to music appears to improve patients' quality of sleep following a cardiac procedure or surgery. We found no evidence of effect for depression or heart rate variability, and inconsistent results for mood. No adverse effects of music interventions were reported. The majority of the studies examined the effects of listening to pre-recorded music. More research is needed on the effects of music interventions offered by a trained music therapist. Overall, the quality of the evidence is not strong thus the results should be interpreted with caution.

21. Social Isolation Interventions – (New)

Social isolation and loneliness can be associated with higher risk of mortality and morbidity (Holt-Lunstad 2010) but people can 'recover' from loneliness meaning there is scope for interventions (Victor, 2012; Social Care Institute for Excellence, 2014). Older people are particularly vulnerable to social isolation and loneliness owing to loss of friends and family, mobility or income.

Summary

<i>Intervention</i>	<i>Level of evidence on effectiveness</i>	<i>Level of evidence for cost</i>
Social isolation interventions –	1-	Evidence not available

befriending and navigator services		
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- 21.1 Interventions targeting social isolation in older people: A systematic review concluded that well-conducted studies of the effectiveness of social interventions for alleviating social isolation are needed to improve the evidence base (Dickens, 2011b). However, it found that common characteristics of effective interventions were those developed within the context of a theoretical basis, and those offering social activity and/or support within a group format. Interventions in which older people are active participants also appeared more likely to be effective. Future interventions incorporating all of these characteristics may therefore be more successful in targeting social isolation in older people.
- 21.2 The Social Care Institute for Excellence has published a research briefing entitled: 'Loneliness and social isolation: interventions and outcomes' (Social Care Institute for Excellence, 2014) and concludes that people who use befriending or community navigator services reported they were less lonely and socially isolated following the intervention; the report concluded that research needs to include different genders, populations and localities and that there is a need for further research which incorporates standardised quality-of life and cost measures.

Recommendation

Interventions to reduce social isolation have not been set up or evaluated consistently so the evidence base has not yet developed. Befriending and community navigator services are shown to reduce loneliness and interventions should be robustly evaluated.

22. Falls Prevention

Falls prevention involves interventions or packages of interventions intended to reduce falls and fall-related harm. The prevention may be primary (intended to prevent falls and fall-related harm in those who have never fallen) or secondary (intended to prevent further falls and related harm in those who have previously fallen).

Original Summary

<i>Intervention</i>	<i>Level of evidence on effectiveness</i>	<i>Level of evidence for cost</i>
Fracture liaison service	2++	2++

Original Recommendation

- 22.1 According to Department of Health estimates, the introduction of a fracture liaison service has the potential to save around £120,000 over a five-year period. Locally fracture liaison services have been deemed not to be cost effective.

Update

22.2 NICE has published guidelines on effective interventions for the assessment and prevention of falls in older people (NICE CG161, 2013) to support healthcare and other professionals and staff who care for older people who are at risk of falling. To prevent falls the key priorities are that:

- Healthcare professionals should ask older people routinely whether they have fallen in the past year and the frequency and context and characteristics of the falls.
- Older people who present for medical attention because of a fall, report recurrent falls or demonstrate abnormalities of gait and/or balance should be offered a multifactorial falls risk assessment as part of a multifactorial intervention. Specific recommendation on preventing falls in hospital settings are also covered by the guidance.

Updated Summary

22.3	<i>Intervention</i>	<i>Level of evidence on effectiveness</i>	<i>Level of evidence for cost</i>
	Fracture liaison service	2++	2++

Updated Recommendation

22.4 According to Department of Health estimates, the introduction of a fracture liaison service has the potential to save to save around £120,000 over a five-year period. Locally fracture liaison services have been deemed not to be cost effective. NICE have issued priorities for implementation to prevent falls in older people.

23. Parenting – (New)

Parenting encompasses much more than feeding and clothing children, keeping them clean and warm, and protecting them from harm. The quality of parenting affects children's long-term physical, emotional, social and educational outcomes. Differences in parenting between social groups have implications for health inequalities (Public Health England, 2014).

23.1 The Faculty of Public Health have produced an overview of the evidence for parenting programmes (Faculty of Public Health, 2010). This overview provides the basis for this section.

23.2 Many different approaches to parenting support have been developed and trialled, and the research literature on parenting intervention is very large. It is also important to highlight that there are a great number of theories about the best way to bring up children but many of these have not been tested in real life (NAPR, 2015).

- 23.3 Most trials and evaluations have been carried out with mothers, but effective programmes for fathers are now beginning to appear. This literature is now summarised in reviews of reviews (MacMillan 2009; Barlow 2008).
- 23.4 A database of programmes available in the UK and the evidence to support them has been developed by the National Academy for Parenting (NAPR, 2015).
- 23.5 Two NICE reviews have been produced – one relating to parenting programmes to prevent and treat conduct disorder (NICE, 2013) and one in relation to supporting social and emotional development in the vulnerable under fives (NICE, 2012).
- 23.6 The Faculty of Public Health review (Faculty of Public Health, 2010) and a more recent review by Public Health England and the Institute of Equity (Public Health England, 2014) summarise the programmes for which there is now clear evidence of effectiveness:

Infancy

- **Universal infant programmes** include programmes offered in the context of antenatal care and programmes offered at birth to help all parents develop sensitivity to their infants.
- **Targeted infant programmes** cover high risk groups, typically teenage mothers. These are usually offered on a one-to-one basis through home visiting. The best known example of this approach is the Family Nurse Partnership which is currently being trialled in the UK (Barnes, 2011).
- Programmes to address postnatal depression cover prevention in high risk groups and interventions in mothers with established depression.

Older children

- A great many programmes have been developed for this age group. Most target families where children have or are at high risk of developing behaviour problems, but universal programmes are available. They almost all address behaviour management principles: pay attention to good behaviour, where possible ignore bad; set clear boundaries and use positive discipline to reinforce. They vary in the extent of relationship building they provide.
- 23.7 A recent systematic review has looked at the impact of parenting programmes in European countries on reducing inequalities in children's health and development (Morrison 2014). The review found 23 interventions in total which aimed to improve parenting abilities (however, some had additional components such as day-care provision, improving housing conditions and speech and psychological therapies). Two interventions were universally proportionate and all other were aimed at a specific target population. Programmes offering intensive support, information and home visits using a psycho-educational approach and aimed at developing parent's and children's skills showed more favourable outcomes. These were parenting behaviours, overall children's health and higher level of fine motor skills and cognitive functioning. Child injuries and abuse were also reduced.
- 23.8 A review of the evidence from cost-effectiveness studies indicates that parenting programmes have the potential to be cost-saving in the long-term; however, gaps in the evidence include: lack of follow-up of families who drop

out of programmes, absence of control groups in longer-term follow-ups and little information about costs and effects of programmes in routine practice. The size of savings resulting from implementation of effective parenting programmes will depend on the extent to which families likely to be most costly to society attend and experience lasting benefit (Stevens, 2014).

Summary

<i>Intervention</i>	<i>Level of evidence on effectiveness</i>	<i>Level of evidence for cost</i>
Parenting programmes	1+	1+

Recommendation

There is evidence that a range of parenting programmes designed for families with children of a particular age are effective. Parenting programmes have the potential to be cost-saving in the long term.

24. Family Group Conferencing – (New)

Family group decision making is an umbrella term for practice models that shift planning for children away from “professionally driven” towards a more “family-centred” approach, with the premise that families are experts on their own situations, and as such should be considered well qualified to contribute to plans designed to promote the safety and well-being of their children. FGDM models typically involve one or more meetings between the extended family and other professionals during which time a plan is developed for the care and safety of the child(ren): they can be used in any area of family and child care practice, e.g. children in need and looked-after children, youth justice, and education (NSPCC, 2009). There are numerous models of FGDM used internationally, including **Family Group Conferencing** (FGC) (Shlonsky 2009)

- 24.1 In 2007, The Scottish Executive published an assessment of the use and impact of family group conferencing (Barnsdale 2007). In their review of the literature and during discussions with professionals, FGC was viewed as an ethically sound and practically effective way of working with families whose strengths and resources often remain untapped by mainstream practice. In terms of the research evidence, the report concludes that it is well established that most participants are positive about the FGC process and that, with appropriate information and support, extended families can develop plans which are acceptable to social work services. However, there is less research evidence about how plans are implemented and about longer term benefits for children.
- 24.2 A more recent review article examining outcomes and challenges in implementing FGC also emphasised that research in this area is limited (Frost 2014).

- 24.3 The Scottish Executive report stated that there is a lack of reliable evidence on cost benefits. They concluded that the available evidence indicates that FGC is likely to be cost neutral or to provide savings. The most evident savings accrue when a period of accommodation is reduced or avoided.

Summary

<i>Intervention</i>	<i>Level of evidence on effectiveness</i>	<i>Level of evidence for cost</i>
Family Group Conferencing	3	3

Recommendation

Family group conferencing is viewed as a practically effective way of working with families. Most participants are positive about the FGC process but there is limited evidence about how the resulting plans are implemented, longer term benefits for children and cost-effectiveness.

25. Health and Wellbeing of Carers – (New)

Informal carers provide a substantial amount of care for dependent people in the community. This is not only provided by people of working age, but also by those at both ends of the age spectrum; 114,000 children aged between 5 and 15 provide informal care and 9000 provide at least 50 hrs of care a week (Doran, Drever and Whitehead 2003), over a million people aged 65 and over provided informal care and 381,000 of these provided at least 50 hours of care a week (Doran, Drever and Whitehead 2003).

Summary

<i>Intervention</i>	<i>Level of evidence on effectiveness</i>	<i>Level of evidence for cost</i>
Supporting carers	2-	2-

- 25.1 It might be expected that the physical and mental strains of providing care for relatives would result in adverse health outcomes for carers. Indeed, carers have a higher prevalence of physical health problems, such as back pain and hypertension than age-equivalent peers without caring responsibilities (Pinquart and Sorensen 2003). Mental health problems are more common, with up to 90% of carers experiencing psychological distress or depression (Carers UK 2012). There can also be financial issues, with one in three carers giving up work to care (Carers UK 2012) and half falling into debt as a result of caring (Carers UK 2008).
- 25.2 Carers are then, in need of care and support themselves to continue to care for others. This has been recognised by the Royal College of General Practice in its guide for GPs and their teams, ‘Supporting Carers’ (RCGP 2011). Carers also value regular GP health checks to identify health issues that they may have otherwise neglected due to their caring responsibilities. Supporting carers can be cost effective, as the consequence of informal

carers being lost is the statutory health and social care sector having to take over.

25.3 Research from the University of Leeds (Centre for international research on care, labour and equalities, University of Leeds 2009), identified the following ways in which statutory services can support informal carers

- Ensuring appropriate services are accessible at key points in the carer's journey.
- Enabling all agencies to work together to support carers in an effective network.
- Resourcing and valuing the non-statutory sector to befriend and offer peer support to carers.
- Ensure that carers can take breaks from caring in a way that is appropriate for them.

Recommendation

Devon has a significant number of carers and a significant population of people aged over 85 and this will increase. The role of carers in the future will continue to be significant as are support programmes for carers. The evidence identified.

26. Volunteering

Volunteering involves working without payment, typically towards some social, political, or cultural cause.

Summary

Intervention	Level of evidence on effectiveness	Level of evidence for cost
Volunteering	2++	2--

Recommendation

26.1 Volunteering covers a wide range of activities so costs and outcomes vary widely but some interventions have good potential. Further scoping of individual programmes is needed ahead of commissioning decisions.

Update

26.2 A systematic review assessed the evidence of volunteering on the health and survival of volunteers (Jenkinson 2013). Non-trial (cohort studies) evidence showed volunteering had favourable effects on depression, life satisfaction, wellbeing but not on physical health but this was not confirmed by experimental studies. Combined data from five cohort studies found volunteers to be at lower risk of mortality but there was insufficient evidence to demonstrate consistent influence of volunteering type or intensity on outcomes. The authors conclude that there is limited robustly designed research to guide the development of volunteering as a public health promotion intervention.

26.3 This review does not change the original summary or recommendation.

27. Engagement – (New)

Historically, professionals developed strategies to promote health with little or no input from the targeted populations. However, community engagement has more recently become central to guidance and national strategy for promoting public health. Community engagement is the involvement of communities in decision-making and in the planning, design, governance and delivery of services. Community engagement activities can take many forms, including service user networks, health-care forums, volunteering or interventions delivered by trained peers (O'Mara-Eves 2013).

- 27.1 A systematic review has been published by the National Institute for Health Research identifying those community engagement approaches that are effective in reducing health inequalities (O'Mara-Eves 2013). Results from 131 studies included in a meta-analysis indicate that there is solid evidence that community engagement interventions have a positive impact on health behaviours, health consequences, self-efficacy and perceived social support outcomes, across various conditions.
- 27.2 There is insufficient evidence to determine whether one particular model of community engagement (e.g. peer-/lay delivered interventions compared with interventions that involve community members in the design of the intervention) is likely to be more effective than any other. There are also insufficient data to test the effects on health inequalities, although there is some evidence to suggest that interventions that improve social inequalities (as measured by social support) also improve health behaviours.
- 27.3 There is weak evidence from the effectiveness and process evaluations that certain implementation factors may affect intervention success.
- 27.4 From the economic analysis, there is weak but inconsistent evidence that different types of community engagement interventions can be cost-effective, and that implementation factors may affect intervention success.

Summary

<i>Intervention</i>	<i>Level of evidence on effectiveness</i>	<i>Level of evidence on cost</i>
Community engagement to reduce inequalities	2++	2++

Recommendation

Overall, community engagement interventions are effective across a wide range of contexts and using a variety of mechanisms. Evaluations should place greater emphasis on long-term outcomes, outcomes for beneficiaries, process evaluation, and reporting costs and resources data.

28. Community Mentoring

Community mentoring is targeted at older people at risk of social isolation and loss of independence. The aim of the service is to promote social re-engagement through mentors who enable older people to make use of existing resources, engage with friendship or interest groups, and if necessary to respond to existing service provision.

Original Summary

<i>Intervention</i>	<i>Level of evidence on effectiveness</i>	<i>Level of evidence on cost</i>
Upstream	3	?
Community Mentoring	2+	2+

Original Recommendation

- 28.1 Evidence did not demonstrate the effectiveness and potential for cost-saving of Community Mentoring in the format it was in at the time the evaluation was completed.

Update

- 28.2 A trial published on the Cochrane Central Register of Controlled Trials in 2011 examined the effectiveness of a community-based mentoring service for improving mental health, social engagement and physical health for socially isolated older people (Dickens 2011a). The trial, which included nearly 400 participants, found no evidence that mentoring was beneficial on health status, social activity and depression. The trial provides no substantial evidence to support the use of community mentoring as an effective means of alleviating social isolation in older people.

Updated Summary

<i>Intervention</i>	<i>Level of evidence on effectiveness</i>	<i>Level of evidence for cost</i>
Upstream	3	?
Community Mentoring	2+	2+

Updated Recommendation

- 28.3 The evidence does not demonstrate the effectiveness and potential for cost-saving of Community Mentoring in the format it was in at the time the evaluation was completed.

29. Housing Interventions – (New)

The impact of housing on health is well-documented and the Kings Fund and Local Government Association (2014) has calculated a return on investment in housing; for every £1 invested in housing interventions to keep people warm and safe it can save £70 for the NHS over 10 years. The Building Research Establishment (BRE) published a briefing paper on the cost of poor housing to the NHS based on the first treatment costs of the most hazardous properties (BRE 2015). The report states that the return on investment for hazards such as serious trip hazards is less than five years but action would need to be targeted at the most cost effective improvements to the poorest housing occupied by the most vulnerable.

Summary

<i>Intervention</i>	<i>Level of evidence on effectiveness</i>	<i>Level of evidence on cost</i>
Housing interventions	1++	?

- 29.1 Three Cochrane reviews related to housing interventions have identified that there is a limited amount of high quality research to guide policy and decision making and many studies are difficult to compare and of varying quality. This is due to the quality of evidence rather than absence of effectiveness.

Interventions to modify the home environment to reduce injuries

- 29.3 Injuries in the home are very common and most of the injuries to older people and children under five occur at home. Many people are encouraged to alter their home to try and reduce injury and injury risk. Common alterations include the fitting of locks on cupboards, installing stair gates, improvement of lighting in halls and stairways, and the removal of trip hazards. The review found that there is insufficient evidence from studies to show that such changes reduce the number of injuries in the home but does not conclude that these interventions are ineffective. Home alterations need to be evaluated by larger and better designed studies which include injuries and their outcomes. (Turner 2011)

Interventions for preventing or reducing respiratory tract infections and asthma symptoms in mould-damaged buildings

- 29.4 Moisture damage is a very common problem in private houses, workplaces and public buildings globally. It has been associated with asthma and respiratory symptoms of the inhabitants. The study found repairing houses to remove mould reduced asthma-related symptoms and respiratory infections when compared to doing nothing; it also decreased the use of asthma medication in asthmatics. (Sauni, 2015) The quality of evidence varied from very low to moderate quality. Many different symptoms were measured and studies were set up differently, therefore it was difficult to draw hard conclusions. It concluded better research is needed, preferably with a cluster-randomised design and with better measurement of the symptoms.

Housing improvement as an investment to improve health

- 29.5 The review searched widely for studies from anywhere in the world which had investigated whether or not investment to improve housing conditions is linked with improvement in health, the review only looked at studies where changes in health for the original population were being investigated rather than changes for the area. (Thomson 2013) The studies covered a wide range of housing improvements. The housing improvements in high income countries, and conducted in the past 30 years, included refurbishment, rehousing, relocation, installation of central heating and insulation. Overall, it would appear that improvements to housing conditions can lead to improvements in health. Improved health is most likely when the housing improvements are targeted at those with **poor health and inadequate housing conditions, in particular inadequate warmth**. Improvements in warmth and affordable warmth may be an important reason for improved health. Improved health may also lead to reduced absences from school or work. Improvements in energy efficiency and provision of affordable warmth may allow householders to heat more rooms in the house and increase the amount of usable space in the home. Greater usable living space may lead to more use of the home, allow increased levels of privacy, and help with relationships within the home. An overview of the best available research evidence suggests that housing which promotes good health needs to be an appropriate size to meet household needs, and be affordable to maintain a comfortable indoor temperature.
- 29.6 NICE guideline (NG 6) entitled '*Excess winter deaths and morbidity and the health risks associated with cold homes*' makes a number of recommendations relating to cold homes for a range of stakeholders. The evidence review for the guidance identified a lack of UK evidence on how to prevent cold-related deaths (particularly relating to interventions). The review did not identify any urban or rural differences but noted that rural properties are more likely to be 'off grid' and so reliant on more expensive forms of fuel and there may be more installation difficulties. The economic evaluation did conclude that providing home heating and insulation interventions to households where someone has COPD, heart disease or is older than 65 was found to be cost effective from a health perspective, it makes an important distinction that if ventilation is poor and this leads to health problems, the intervention will not necessarily be cost effective. Fuel subsidies may be more cost effective for short term interventions. The evidence review and economic analysis does not relate to specific interventions but provides a guide to the relative merits of broad interventions.

Recommendation

The evidence has highlighted a lack of comparable studies to determine which specific intervention is effective but shows that home improvements should be targeted at those in poor health and living in inadequate housing conditions, in particular adequate warmth.

30. Extra Care Housing

Extra-care housing is an extension of sheltered housing that aims to meet the housing, care and support needs of older people, while helping them to

maintain their independence in their own private accommodation. The qualifying age for entry may be below 65 years but most entrants are older than this. Extra-care housing offers support and care to residents for 24 hours a day, and has been viewed as a possible alternative to moving into a care home. (DH 2005).

Summary

<i>Intervention</i>	<i>Level of evidence on effectiveness</i>	<i>Level of evidence on cost</i>
Extra-care housing	2+	2+

Recommendation

- 30.1 Extra-care housing can lead to improved individual wellbeing at a higher cost. Modelling of cost-benefit is needed to determine whether this represents value for money.

Update

- 30.2 No further evidence available.

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APPENDIX 1

Reviewing and Grading the Evidence

Evidence relating to clinical effectiveness was reviewed and graded using the hierarchical system presented in the table below. This system reflects the susceptibility to bias inherent in particular study designs and is the same as the system used by NICE, the National Institute of Health and Clinical Excellence.

In assessing the quality of the evidence, NICE recommends each study is given a quality rating coded as “++”, “+” or “-”. The highest possible evidence level (EL) is a well-conducted systematic review or meta-analysis of RCTs (EL = 1++) or an individual RCT (EL = 1+). Studies of poor quality are rated as “-”. NICE recommends studies rated as “-” should not be used as a basis for making a recommendation although they can be used to inform recommendations.

Levels of Evidence for Intervention Studies

Level	Source of evidence
1++	High-quality meta-analyses, systematic reviews of randomised controlled trials (RCTs), or RCTs with a very low risk of bias
1+	Well-conducted meta-analyses, systematic reviews of RCTs, or RCTs with a low risk of bias
1-	Meta-analyses, systematic reviews of RCTs, or RCTs with a high risk of bias
2++	High-quality systematic reviews of case-control or cohort studies; high-quality case-control or cohort studies with a very low risk of confounding, bias or chance and a high probability that the relationship is causal
2+	Well-conducted case-control or cohort studies with a low risk of confounding, bias or chance and a moderate probability that the relationship is causal
2-	Case-control or cohort studies with a high risk of confounding, bias or chance and a significant risk that the relationship is not causal
3	Non-analytical studies (for example case reports, case series)
4	Expert opinion, formal consensus