

DEMENTIA AND DIAGNOSIS

THE DEMENTIA ICEBERG



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FOREWORD

Dementia is one of our biggest global public health challenges. It is a condition that will affect hundreds of millions of people around the world by 2050, with over 115 million people living directly with dementia and millions more – families, friends, colleagues, neighbours – impacted too, either by providing care or offering support.

As a leading international healthcare group and the largest international provider of specialist dementia care, Bupa is committed to helping people with dementia to live well and receive care and support that’s right for them at all stages of the condition. Receiving a diagnosis, preferably early, is fundamental. Individuals, with guidance and help from loved ones around them, must be allowed to adequately plan for the years ahead when their needs will substantially change.

Worldwide, dementia is under-diagnosed, with most people never receiving a formal diagnosis. It’s staggering to think that almost 30 million people globally currently don’t know they have dementia, robbing them of the opportunity to plan, or get access to care and support. More can be done and the opportunity from this is material for individuals, families, communities and health systems.

This report shows how screening for dementia could help increase diagnosis rates. We examined how many more people might receive a diagnosis if a memory test for all people aged 75

years old was introduced in the United Kingdom (England and Wales), Spain, Australia and New Zealand. This has not been examined anywhere in the world before. We estimate that each year, in total, almost 8,900 people would receive a diagnosis in the four countries as a direct result of the screen. Of this figure, over 5,200 people would receive a diagnosis who would otherwise never get one, while the remaining 3,600 people would receive a diagnosis earlier than they otherwise would.

The lives of all those people, and the lives of tens of thousands of people around them – in particular family and close friends – could be improved. If people know they have dementia, they can properly plan for living well with it, so we urge governments worldwide to invest in improving dementia diagnosis rates to improve quality of life for millions of people. This report will contribute to the evidence base and, I hope, prompt the discussion of how diagnosis rates can be increased, either via screening or other routes.



Stuart Fletcher
Chief Executive Officer
Bupa

SUMMARY

For too long, people have believed that memory problems are a normal part of ageing and that there is little or nothing that can be done for people living with dementia because it is a degenerative condition and there is no cure. However, Bupa, along with other global and national organisations, academics and healthcare professionals, knows that people living with dementia can still live well, provided there is the right care and support at all stages of the dementia journey.

A diagnosis is a critical first step – only once an individual knows that they have dementia can they access care and support and adequately prepare for the future. Currently, most people living with dementia have not received a formal diagnosis, while those who are formally diagnosed typically receive a diagnosis at a relatively late stage. Governments around the world that have committed to improving diagnosis rates should be congratulated but campaigners and academics will agree that progress has been slow and more must be done.

Offering memory assessments to everybody of a specific age is considered to be an option that is likely to increase dementia diagnosis rates, but it has never been investigated in depth in any country, let alone an international comparison been completed, or the cost of carrying out such a screen been estimated.

To improve the evidence base and contribute to the debate around how diagnosis rates can tangibly be increased, Bupa commissioned the London School of Economics (LSE) to conduct an international review to examine the implications of introducing memory assessments for everybody at the age of 75 in four countries – UK (England and Wales), Spain, Australia and New Zealand. This could support policy makers to make informed decisions as they consider specific policies or interventions in dementia care and support.

The review concluded that if screening for dementia at age 75 was introduced in England and Wales, Spain, Australia and New Zealand, each year almost 8,900 people would be diagnosed with dementia. Of this figure, over 5,200 people would receive a diagnosis who would otherwise never receive one, while the remaining 3,600 people would receive a diagnosis earlier than they otherwise would if the policy was not implemented.

Our analysis concluded that it would cost the UK government only £16 million per year to screen everyone aged 75 (in England and Wales), which is less than 0.02 per cent of the National Health Service’s annual budget of £108.9 billion. This can be used as a benchmark should other countries want to consider the introduction of screening.

Country	Estimated number of people aged 75 living with dementia, without a diagnosis	If screening were introduced for people at the age of 75, the number of people who would receive a diagnosis as a direct result of the screen each year
UK (England and Wales)	9,374	3,514 (including 1,974 who would otherwise never receive a diagnosis)
Spain	10,115	3,814 (including 2,326 who would otherwise never receive a diagnosis)
Australia	3,467	1,311 (including 800 who would otherwise never receive a diagnosis)
New Zealand	622	230 (including 129 who would otherwise never receive a diagnosis)
		Total: 8,869 (including 5,229 who would otherwise never receive a diagnosis)

If screening for dementia at age 75 was introduced in England and Wales, Spain, Australia and New Zealand, each year almost 8,900 people would be diagnosed with dementia. Of this figure, over 5,200 people would receive a diagnosis who would otherwise never receive one, while the remaining 3,600 people would receive a diagnosis earlier than they otherwise would.

DEMENTIA AND A DIAGNOSIS

ABOUT DEMENTIA

Dementia is a broad term that describes a set of symptoms that develop as a result of damage to the brain. The symptoms typically include memory loss, difficulty communicating and changes in mood. Dementia is a progressive condition, which means it gets worse over time.

CURRENT DIAGNOSIS RATES AROUND THE WORLD

According to Alzheimer's Disease International (ADI), a global federation of Alzheimer associations and Bupa's global dementia partner, it is clear that in most, if not all, health systems dementia is often under-diagnosed, and when diagnosis does occur this is typically at a relatively late stage in the disease process.

The ADI's 2011 World Alzheimer Report highlighted that most people currently living with dementia have not received a formal diagnosis. In high-income countries, only 20 to 50 per cent of dementia cases are recognised and documented in primary care, such as a doctor's surgery. This 'treatment gap' is certainly much greater in low and middle-income countries, with one study in India suggesting 90 per cent remain unidentified. If these statistics are extrapolated to other countries worldwide, the ADI estimate that approximately 28 million of the 36 million people living with dementia have not received a diagnosis, and therefore do not have access to treatment, care and organised support that getting a formal diagnosis can provide.

However, the ADI does acknowledge that diagnosis rates are increasing, at least in some high income countries, with growing public awareness of

dementia, people seeking help earlier, better prepared and incentivised primary care services, and expanding national networks of memory clinics.

UK, Spain, Australia, New Zealand

According to the UK Department of Health, approximately 45 per cent of people living with dementia in England currently receive a diagnosis. This is up from 39 per cent in 2010 but NHS England aims to see two-thirds of people living with dementia identified and given appropriate support by 2015.

There is currently no data available on formal diagnosis rates in Spain, Australia or New Zealand.

WHY A DIAGNOSIS IS IMPORTANT

Bupa believes that a diagnosis is fundamental to empower people to live well with dementia for the following reasons.

1. A diagnosis can enable people access to treatment, care and support

Although there is no cure for dementia, there are drugs that can temporarily slow down its progression for some people, but a healthcare professional can only prescribe them once a diagnosis has been made. If a person therefore receives an early diagnosis, they are more likely to have access to medication that can help them.

There are three medicines that are prescribed for dementia – Reminyl (Galantamine), Exelon (Rivastigmine), Aricept (Donepezil). These are known as anti dementia drugs and are only prescribed for Alzheimer's disease, which is the most common form of dementia

and accounts for up to 70 per cent of cases. These drugs can help a person for approximately 18 to 24 months.

If someone receives a diagnosis later in the journey when these drugs can no longer be used there is a medicine – Ebixa (Memantine) – that can be prescribed and psychosocial interventions that can help improve quality of life and help relieve depression and agitation. These can be discussed with a doctor or specialist clinician.

A doctor can then provide information and advice to the person living with dementia and their family, and might signpost them to local support groups, such as a dementia charity or carer support group.

2. A diagnosis can empower a person to make informed decisions about their future care needs

Dementia is a life changing condition. If an individual knows that they have dementia, they can be empowered to decide, with support from their families and friends, how they want to be looked after in the years ahead when their needs will substantially change.

A person's end of life wishes can also be discussed with them while they are able to make decisions and they can share their reasons and options with close family and friends.

3. A diagnosis can provide more time for the person and their family to plan for the years ahead

A diagnosis can give people more time to discuss care and support options with

their loved ones and agree what is best for their specific circumstance. Friends and family members are often involved, in some way but to different degrees, in providing care and support as their loved one's dementia progresses. Initially, this might mean being watchful and reassuring, then being involved helping with tasks such as the weekly food shop or driving loved ones to see friends, but towards the latter stages of the dementia journey it might require cutting down the number of hours a family member works or stopping work entirely to become a full time carer. A diagnosis will allow families to learn more about the condition and understand how it will affect their loved one and therefore they can adequately plan how best they, as a family, can manage future challenges.

A diagnosis could also give families more time to consider practical family living arrangements, including down sizing if necessary or adapting the family home, or even family members considering a move closer to the person living with dementia.

Financial and legal matters can also often be overlooked as people age but it is important they are properly managed. An early diagnosis might allow the person living with dementia to be more involved in decision making because they are still able to make decisions. A will can be written and the power of attorney, when the person appoints someone (known as an 'attorney') to make decisions on their behalf when they can no longer make decisions themselves, can also be discussed.

DEMENTIA AROUND THE WORLD

PEOPLE WITH DEMENTIA WORLDWIDE



2010



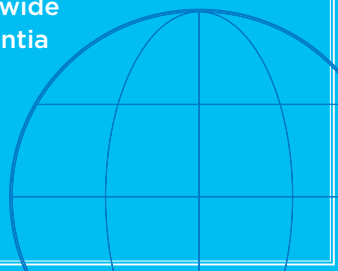
2030



2050

Estimated people worldwide with undiagnosed dementia

28 million



There are nearly



7.7m

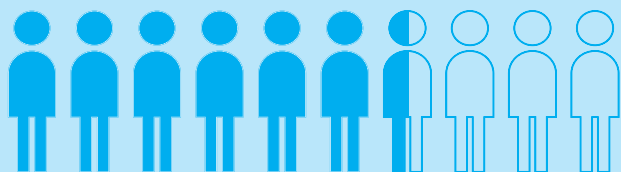
new cases of dementia each year, around the world

That's one new case of dementia every

4 SECONDS



ALZHEIMER'S IS THE MOST COMMON FORM OF DEMENTIA AND CONTRIBUTES TO 60-70% OF CASES



More than

19,000

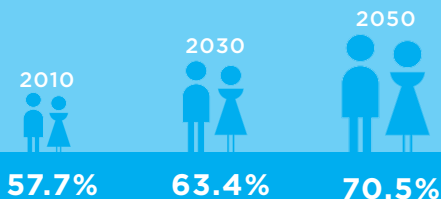
people living with dementia in Bupa care homes around the world

Estimated worldwide cost of dementia is

\$604bn

(2010)

As the number of people living with dementia increases, so does the proportion of cases in low and middle income countries



OUR INVESTIGATION

THE RESEARCH STUDY

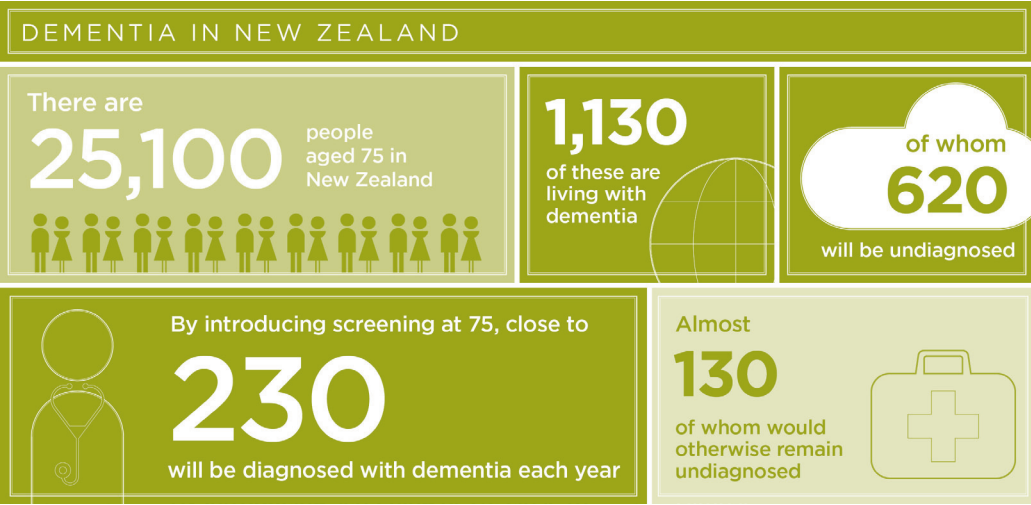
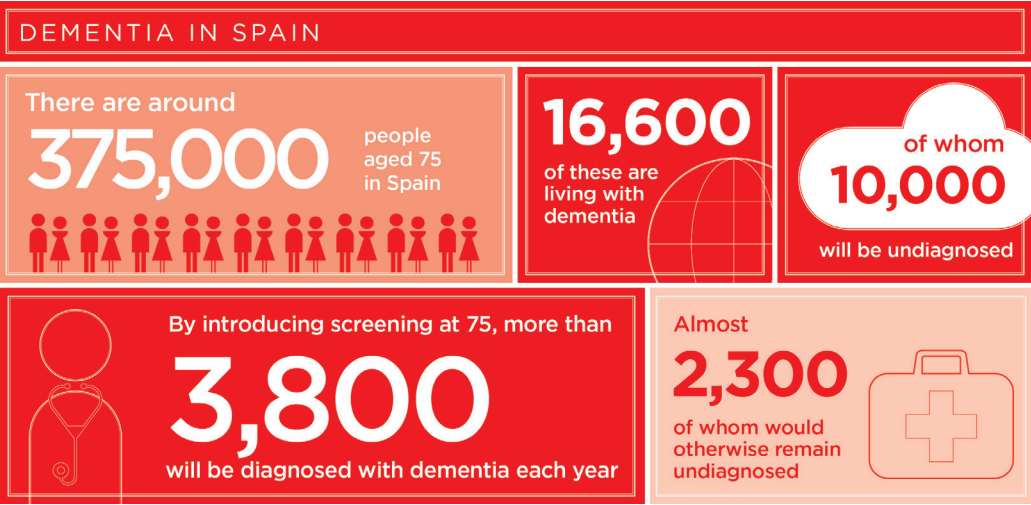
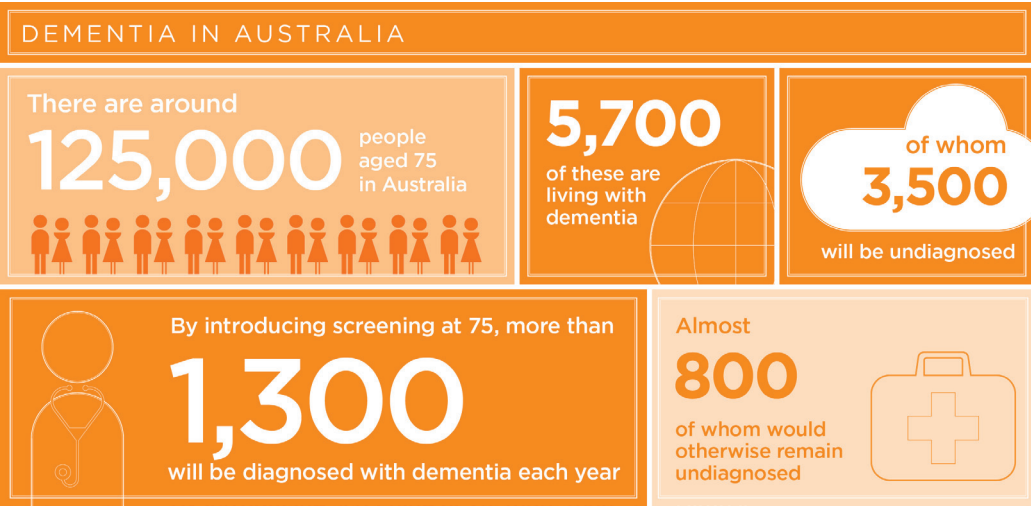
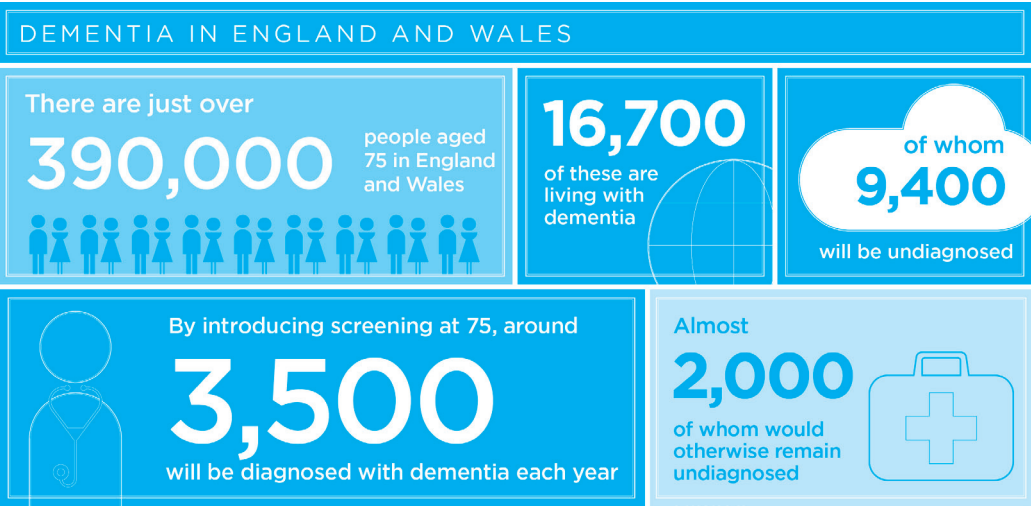
The LSE used decision modelling, a form of economic modelling that uses best available evidence to model the outcomes in specific scenarios, in this case what would happen at various stages when someone at the age of 75 is offered screening for dementia.

The research assumed that screening would occur in a primary care setting, such as a doctor's surgery, and that it would be administered by a combination of clinical nurses and General Practitioners (GPs). It was also assumed that the Mini Mental State Examination (MMSE) would be used as the screening tool because this is the most commonly used test for complaints of memory problems and is also used widely in research. An MMSE is a series of questions and tests that are used to check a number of different mental abilities, including a person's memory, attention and language. A standard 15 minute appointment was assumed and it was estimated that 81 per cent of people would agree to be screened (Holsinger et al., 2011). It was then assumed, based on the latest available research (Boustani et al., 2005), that 52 per cent of people identified as having cognitive impairments would agree to go on for further diagnostic tests at a memory clinic or with another specialist.

INTERNATIONALISING THE REPORT

The decision model used in the investigation was initially developed to review the scenario for the UK (England and Wales). It was then adapted to reflect the population and prevalence rates in Spain, Australia and New Zealand respectively. In each country, the research team estimated the total number of people aged 75 living with dementia, the total number of people aged 75 with undiagnosed dementia, the total number of additional diagnoses of dementia that could be made each year if a screening programme were introduced at age 75 and the total number of diagnoses that could be made earlier than they otherwise would.

COUNTRY SUMMARIES



RECOMMENDATIONS

UNITED KINGDOM (ENGLAND AND WALES)

There are just over 390,000 people aged 75 in England and Wales, of whom around 16,700 are believed to be living with dementia. Around 9,400 of these people will not have a diagnosis.

Our analysis concludes that by introducing screening for people at the age of 75 across England and Wales, around 3,500 people would be diagnosed with dementia as a direct result of the screen each year. Almost 2,000 of these people would otherwise never have received a diagnosis.

SPAIN

There are around 375,000 people aged 75 in Spain, of whom around 16,600 are believed to be living with dementia. Around 10,000 of these people will not have a diagnosis.

Our analysis concludes that by introducing screening for people at the age of 75 across Spain, more than 3,800 people would be diagnosed with dementia as a direct result of the screen each year. Almost 2,300 of these people would otherwise never have received a diagnosis.

AUSTRALIA

There are around 125,000 people aged 75 in Australia, of whom around 5,700 are believed to be living with dementia. Almost 3,500 of these people will not have a diagnosis.

Our analysis concludes that by introducing screening for people at the age of 75 across Australia, more than 1,300 people would be diagnosed with dementia as a direct result of the screen each year. Almost 800 of these people would otherwise never have received a diagnosis.

NEW ZEALAND

There are around 25,100 people aged 75 in New Zealand, of whom around 1,130 are believed to be living with dementia. Around 620 of these people will not have a diagnosis.

Our analysis concludes that by introducing screening for people at the age of 75 across New Zealand, close to 230 people would be diagnosed with dementia as a direct result of the screen each year. Almost 130 of these people would otherwise never have received a diagnosis.

1. Governments around the world should recognise dementia as a public health priority, at the same level as other health challenges including cancer, diabetes and heart disease.

According to the World Health Organization and ADI, the number of people living with dementia is anticipated to triple by 2050, from over 35 million today, to almost 115 million. It is therefore critical that policy makers effectively plan for the future by making sure the health and social care systems are properly structured and funded to meet future needs.

2. Governments should develop National Dementia Plans that clearly outline how high quality care and support will be provided to people living with dementia and how their loved ones will be properly supported.

A National Dementia Plan is the single most impactful mechanism to shape national dementia care for a generation. Currently only nine countries around the world – UK, Australia, Denmark, Finland, France, South Korea, USA, Norway and the Netherlands – have national plans. Bupa is working with ADI to support countries to develop plans – we are doing this by examining international learnings from national plans that already exist and providing governments with data on the prevalence and cost of dementia that can inform their planning.

3. Governments should monitor dementia diagnosis rates and commit to increasing them around the world.

A number of governments around the world have already committed to increasing diagnosis rates and should be congratulated for taking this stand, but others should follow suit. A diagnosis will allow people access to care and support and allow people more time to plan for the years ahead.

4. Governments should work with healthcare professionals to identify routes to increasing diagnosis rates.

We acknowledge that early diagnosis is viewed by some as controversial because a diagnosis might cause anxiety because there is no cure and the person's future needs will be unknown but, given the benefits that can be derived from early diagnosis, we believe it is important. This report provides new evidence on one possible route – screening – as a way to increase diagnosis rates. There are other methods so we urge governments and healthcare professionals to work together to identify the most relevant and feasible policies that can be applied to their health and social care systems to drive up diagnosis rates to help improve the lives of thousands of people.

There will be 115 million people living with dementia by 2050.

ADVICE FOR INDIVIDUALS

IF YOU WORRY ABOUT YOUR MEMORY

If you are worried that you might have dementia, consult your GP. A memory assessment is in fact a tool that is used to help diagnose dementia, as well as other conditions, some of which will be treatable. For example, a memory assessment can reveal that a person has confusion unrelated to dementia – instead, it might be due to depression, chest and urinary infections, severe constipation, vitamin and thyroid deficiencies and brain tumours, all of which have the potential for full recovery. It can also rule out other possible causes of confusion, such as poor sight or hearing and upsets such as moving house or bereavement.

IF YOU ARE DIAGNOSED WITH DEMENTIA

Dementia affects people differently, both physically and emotionally, so each person's experience of living with the condition will vary. Below is some information on what a person can do once they have received a diagnosis.

- **Speak to your doctor.** Your doctor can signpost you to useful information and advice and explain to you how the condition might develop. The more information you have, the easier it might be to make informed decisions about your future care and support needs, taking into considering your preferences and family circumstances.

- **Talk to loved ones.** Families and friends are there to support you, so speak to them about your concerns and questions or simply what's on your mind. They can help you find answers to your queries and be invaluable support when your needs will change.
- **Think about your future.** With your loved ones, try to sort out practical matters like a will and other legal and financial issues. Think about what you want to do over the coming months and years, maybe what you've always wanted to do but never found the time. Remember this is about living with dementia. But also think about your end of life wishes and tell your family what these might be. Earlier decision making could ease the burden on those around you in the future and ensure your wishes are known and met.
- **Look for a local support group.** A dementia charity, such as an Alzheimer association, might exist in your local area where you can meet new friends and speak to people in a similar situation. A local support group might not be right for everyone, but don't rule it out without looking into it.
- **Stay active.** Dementia won't immediately prevent you from doing the things you love. Continue to see friends and do the hobbies you enjoy, and try to exercise and stay physically active.

ADVICE FOR FAMILY AND FRIENDS

Families and friends can play an important role in helping to spot the signs of dementia and help a loved one receive a diagnosis. They can play an even bigger role to help their loved one to live well immediately after a diagnosis has been made.

HOW TO SPOT THE SIGNS OF DEMENTIA

- **Look out for extraordinary forgetfulness.** Dementia is more than just forgetfulness. Don't worry if someone loses the keys – we all do that. Look for forgetting names of grandchildren, or strange behaviour like putting food in the cooker when it should have gone in the fridge.
- **If you think someone might have dementia, keep a diary.** This will help you see the picture that evolves and could help with any discussion with the doctor. For example, Mum or Dad forgot my name on Saturday and didn't know his granddaughter's name on Monday.
- **When you want to take a loved one to the doctor, take advantage of another ailment.** For example, take your Mum or Dad to see the doctor about a cold but pre-warn the surgery that you'd like the doctor to check out their memory. This will make it less stressful.
- **When visiting the GP, don't be embarrassed to ask questions or take notes.** People do this all the time. And it's important to remember what they say.

WHAT TO DO AFTER A LOVED ONE RECEIVES A DIAGNOSIS

- After diagnosis, **the first thing to do is give the house a once over safety check.** Let the gas and electricity company know so they can help with safety

measures. And tell a neighbour – they can help keep them safe, like checking the front door is locked at night.

- **When speaking to someone with dementia, help them to concentrate and make it a pleasant experience.** Do this by removing all distractions – turn the TV and radio off – make eye contact and use a gentle tone of voice. They will feel more relaxed.
- **Help your loved one keep track of time.** People with dementia often lose awareness of time, so your loved one might sleep all day, or want food late at night. Buy a clock with the day, week, time on it so they can orientate themselves. This will reduce confusion.
- **Break down small tasks and make lists.** As dementia develops, basic tasks can become more challenging. Bullet point how to make a cup of tea and put it next to the kettle. Put instructions on the dishwasher and washing machine. This will help your loved one avoid making a simple mistake. Label cupboards and drawers so they know where items are kept.
- **Capture memories.** Memories can fade over time, but people with dementia often connect better with historical memories than recent ones, so get together as a family and capture them. It's a fun experience that brings you together. Pull out old photographs of their home town, childhood friend, favourite holiday and discuss them together.
- **Give yourself equal priority.** Care for yourself as a carer.

APPENDIX

This appendix sets out the methods and assumptions used in the research in further detail. The decision model used was for England and Wales and was then adapted to reflect the population and prevalence rates in Spain, Australia and New Zealand respectively. The appendix below refers to the analysis for England and Wales.

In order to arrive at the reported estimates, the research team at LSE used decision modelling, a form of economic modelling that utilises best available evidence to model the costs and outcomes in specific scenarios. This research used a simple static decision model with two arms to compare a scenario with a one-off screen for people aged 75 years (the 'intervention arm') to the status quo, a scenario with no screening programme (the 'non-intervention arm'). The evidence and data for this study came from a range of academic and administrative sources, including high-quality randomised controlled trials, Government data and national statistics. All sources are referenced.

The research assumed that screening would occur in a primary care setting and that it would be administered by a combination of clinical nurses and GPs. It also assumed that the MMSE (Mini Mental State Examination) would be used as the screening tool. Although several tools exist to test for cognitive impairment, some quicker to administer than the

MMSE, the MMSE is the most widely-used standardised tool in clinical and research settings (Harvan & Cotter, 2006) and is also one of the tests recommended by the National Institute for Health and Clinical Excellence (NICE/ SCIE, 2006). A standard 15-minute appointment was assumed. A clinical nurse to GP ratio of 3:1 for conducting the test was assumed, generating an average estimated cost of £32.50 per appointment (Curtis et al., 2012). The model assumes a dedicated appointment but it was recognised that screening could also potentially take place in the context of a general health check or other appointment.

No tool has previously been used for population-level screening for dementia so it is not certain whether the MMSE would be as effective when used in this way. However, the best existing research suggests that the MMSE is likely to accurately identify people with dementia 89 per cent of the time (based on an estimated sensitivity of 86 per cent to 92 per cent; Harvan & Cotter, 2006). This means that 89 per cent of people with dementia are identified correctly but that 11 per cent of people with dementia will not be correctly identified by the test. What is more, not everyone will agree to be screened in the first place. Acceptability figures derived from a survey of primary care patients in the United States (Holsinger et al., 2011) suggest that as many as 19 per cent of people may refuse to be screened.

The MMSE is also likely to mistakenly identify people as potentially having dementia when they do not 4 per cent of the time (96 per cent specificity, based on estimated specificity of 92 per cent to 99 per cent; Harvan & Cotter, 2006). Although a low figure, this means that around 13,500 people in England and Wales may be identified as potentially having dementia when they do not. The personal costs in terms of distress to these people and their family should be borne in mind, although the researchers assume that the 'false positives' that go on for further specialist diagnostic testing are likely to eventually be resolved, with these individuals either being given no diagnosis or otherwise being diagnosed with another condition for which cognitive impairment can be a symptom (e.g. medication toxicity, thyroid disease, liver or kidney disease or brain tumour).

Overall, the researchers estimated that, of the 391,000 75 year olds in England and Wales (ONS, 2011), around 310,000 would be screened by a clinical nurse and/or GP each year at a total cost of around £10 million. The researchers estimated that, of these, around 20,000 people would be identified as potentially having dementia and would be referred on for specialist diagnostic testing.

Specialist diagnostic testing would involve a minimum of two visits to a specialist or a memory clinic and 85

per cent of people would also receive a computerised tomography (CT) or magnetic resonance imaging (MRI) scan (NICE/ SCIE, 2006). Specialist diagnostic testing costs an average of around £600 per person (Curtis et al., 2012; NICE/ SCIE, 2006). It is possible, however, that only 52 per cent of people will agree to participate in further diagnostic tests (Boustani et al., 2005). As a result, it was thought that around 11,000 people would receive specialist diagnostic testing at a total cost of a just over £5.7 million, with around 3,500 people being diagnosed with dementia as a result.

In the intervention arm, of the 9,500 people who, at age 75 are thought to have undiagnosed dementia, 6,000 people would be expected to receive a diagnosis at some point. This figure is made up of the 3,500 people who would receive a diagnosis as a direct result of the screening programme and 2,500 that would gain a diagnosis later in life through other routes.

Of the 3,500 people diagnosed as a direct result of the screening programme, around 2,000 of these would otherwise not have received a diagnosis at all. The remaining 1,500 people would otherwise have presented at a later stage of the disease and potentially have received a diagnosis at a time of crisis, such as a during hospital admission.

The remaining 2,500 people that are diagnosed later in life are made up of those who refused screening or further diagnostic testing or who were part of the 11 per cent of people that were not identified as potentially having dementia by the MMSE test.

In the non-intervention arm, in which there is no screening programme, just over 4,100 people would be expected to be diagnosed at some point.

The researchers also looked at how these figures would be affected if some of the assumptions were changed.

In the main model it is assumed that screening is conducted using a mix of clinical nurse and GP time in a ratio of 3:1. While the research team felt confident that screening could be carried out primarily by clinical nurses, they also tested the model using the assumption that all screening would be conducted by GPs. In the model, this was assumed to have no effect on the numbers diagnosed but the costs of the screening process were increased from around £10 million to just over £17 million.

The acceptability of screening was assumed to be 81 per cent in the main model (19 per cent refusal). However, in their study, Holsinger et al. (2011) found that when the benefits of screening were fully explained the refusal rate reduced to 14 per cent (86 per cent acceptability).

Using this figure instead increased the total number screened from around 310,000 to 330,000 and the number of people diagnosed at screen from around 3,500 to 3,750. Acceptability in a general population screen, however, may be lower so the team also carried out an analysis where they assumed acceptability to be 75 per cent (25 per cent refusal). In this case the total number of people screened reduced to 288,000 and the total number of people with dementia diagnosed at screen reduced to just under 3,300.

The acceptability of further diagnostic tests was assumed, in the main model, to be 52 per cent. Given that it is a policy priority to increase awareness of dementia and reduce stigma and that, in future, more effective treatments and support may be available, we would expect the acceptability of further diagnostic tests following a positive screen to rise. We therefore re-ran the model using an acceptability figure of 65 per cent (a refusal rate of 35 per cent). This increased the number of people willing to undertake further diagnostic testing from around 11,000 to just over 13,000 and the total number of people with dementia diagnosed at screen to almost 4,400.

The decision model used in the research was then adapted to reflect the population and prevalence rates in Spain, Australia and New Zealand respectively.

In each country, the research team estimated the total number of people aged 75 with dementia, the total number of people aged 75 with undiagnosed dementia, the total number of additional diagnoses of dementia that could be made each year if a screening programme were introduced at age 75 and the total number of diagnoses that could be made earlier than they otherwise would.

The model for Spain uses an underlying dementia prevalence rate for 75 year olds of 4.4 per cent (Lobo et al., 2000; Instituto Nacional de Estadística, 2011). In Australia the underlying prevalence rate is estimated to be 4.6 per cent (Jorm et al., 2005; Australian Bureau of Statistics, 2012). The models for both Spain and Australia use a 61 per cent rate of non-diagnosis (Prince et al., 2011). The model for New Zealand uses a prevalence rate of 4.5 per cent (Access Economics, 2011; Statistics New Zealand, 2013) and a non-diagnosis rate of 55 per cent (Access Economics, 2008).

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ABOUT BUPA

- Bupa's purpose is longer, healthier, happier lives.
- A leading international healthcare group, we serve over 14 million customers in more than 190 countries.
- We offer personal and company-financed health insurance and medical subscription products, run hospitals, provide workplace health services, home healthcare, health assessments and chronic disease management services. We are also a major international provider of nursing and residential care for elderly people.
- With no shareholders, we invest our profits to provide more and better healthcare and fulfil our purpose.
- Bupa employs more than 62,000 people, principally in the UK, Australia, Spain, Poland, New Zealand and the USA, as well as Saudi Arabia, Hong Kong, India, Thailand, China and across Latin America.

About Bupa's social care services around the world

- Bupa cares for more than 30,000 people in more than 460 care homes and retirement villages in the UK, Spain, Australia, New Zealand and Poland.
- Bupa is the largest international provider of specialist dementia care, caring for more than 19,000 residents with dementia.
- In the UK, Bupa Care Services looks after more than 17,900 residents in almost 300 care homes.
- In Australia, Bupa Care Services Australia currently operates 60 care homes caring for 5,300 residents.
- In New Zealand, Bupa Care Services New Zealand cares for more than 4,600 people in 48 homes, 21 care villages and seven rehabilitation sites and also provides telecare services via a personal alarm network.
- In Spain, Bupa (Sanitas Residencial) cares for around 4,400 residents in 40 care homes.
- In Poland, Bupa (LUXMED) has a large care home in Warsaw.

