Hearing screening for life
Forward by Stephen Lloyd MP

Age-related hearing loss sounds so ordinary, so inconsequential, one could almost ask – so what?

My answer is simple: I believe, and our report proves, that age-related hearing loss, if left without treatment, leads to profound human isolation which is not only debilitating but can speed up dementia and other age related illnesses. Ask anyone who is hard of hearing about its isolating properties, or better still, imagine yourself in your work or family environment and how you would feel if your deafness meant you began to pull back from, or even pull out of, the normal social interactions we all take for granted. And this was not just for an hour as an experiment, but every day of every week for the rest of your life.

Something can be done to address this. Something must be done. And the answer is hearing screening at 65. The reason for this is that hearing aids are not like glasses. They do not replace lost hearing, all they do is boost the residual hearing you have – a bit like turning up the volume on a radio with poor reception: louder yes, but also uncomfortable and dissonant. And the challenge is that age-onset related hearing loss, by its very nature, goes hand in hand with denial. Denial of the ageing process, denial of losing our hearing – denial of a reality until it gets so obvious that the cacophony of entreaties from loved ones forces us kicking and screaming to a doctor and an audiologist tells us what we’ve known for years but refused to admit.

However, this is just the first barrier. More often the above scenario happens at 75+, and our hearing has slowly been deteriorating for nigh on 15 years. All the hearing aid does is boost what hearing we have left, and frankly we often can’t cope with the sudden increase in noise so don’t bother persisting with the aid and continue on our drift toward further isolation. Or do try to cope, but as a 75 year old, it can be a real challenge.

Now, if we launch a national Hearing Screening Campaign for everyone who hits 65, we finally have a chance to get on top of the disability early - early enough to ensure we’re in control, early enough to take charge of the impairment before it takes charge of us.
Which is why we are calling on the Coalition Government to support our campaign, starting with a pilot and then, if the results are what we sincerely believe they will be, it can be rolled out across the country.

Age-related hearing loss is a disability which affects millions of people and it has a much wider impact on people’s lives than simply being unable to hear properly. This is why I am very grateful our campaign is supported by so many charities across the ageing and disability spectrum. They know how much positive difference to the lives of their beneficiaries universal hearing screening at 65 will have. Listen to what the supporting organisations are saying, and listen to our report. Hear what we are asking for and support our goal – hearing screening for all at the age of 65.

Thank you

Stephen Lloyd MP
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Introduction

Hearing loss is a major public health issue affecting over 10 million people in the UK – one in six of the population\(^1\). It impacts on communication, causing difficulties for people interacting with their family and friends, and can lead to social isolation and depression\(^2\). It reduces the ability to access services including healthcare and can exacerbate or lead to other medical problems. In particular, new evidence suggests that there is a link between hearing loss and dementia\(^3\)^4\(^5\).

Despite the difficulties it can cause, there are an estimated four million people in the UK with unaddressed hearing loss\(^5\). It takes people an average of 10 years to seek help after they start noticing symptoms\(^6\). Hearing loss is especially prevalent among older people, with an estimated 62% of those aged 65 and over having some form of hearing loss\(^7\). However, evidence suggests that only 3% of 55-74 year olds have hearing aids\(^8\). Many try to carry on as normal to the detriment of their health and quality of life, and at the cost of millions of pounds to the public purse. By the time many people seek treatment, their ability to adapt and benefit from a hearing aid is often greatly reduced. The number of older people in our society is growing, and the issue of unaddressed hearing loss will become increasingly prevalent unless action is taken.

We are calling on the National Screening Committee to propose screening for hearing impairments at the age of 65.

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\(^1\) Action on Hearing Loss ‘Hearing Matters’ 2011
\(^2\) Saito, H. et al. ‘Hearing handicap predicts the development of depressive symptoms after three years in older community-dwelling Japanese’ *Journal of the American Geriatrics Society* 2010, 58(1), 93-7
\(^4\) Lin, F.R. et al. ‘Hearing Loss and Incident Dementia’ *Archives of Neurology* 2011, 68(2), 214-220
\(^5\) Action on Hearing Loss ‘Hearing Matters’ 2011
\(^6\) Davis, A. et al. ‘Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models’ *Health Technology Assessment* 2007, 11(42), 1-294
\(^7\) This figure is estimated on the basis of ONS population data and prevalence figures given in Action on Hearing Loss ‘Hearing Matters’ 2011
\(^8\) Davis, A. et al. ‘Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models’ *Health Technology Assessment* 2007, 11(42), 1-294
We are a campaign made up of a number of different charities, campaigning organisations and experts. We come from many different backgrounds – some members focus on social issues, some at long term conditions and some at the challenges which face an increasingly ageing population. But what we all share is a recognition that unaddressed hearing loss is detrimental to the long term health and wellbeing of the people we represent. Hearing loss can isolate people like no other condition, damaging their quality of life, putting them at risk of mental health problems and reducing their chances of accessing healthcare in a timely and effective way, which makes managing other health conditions and issues much harder.

Hearing screening at the age of 65 is necessary because the sooner people start to benefit from intervention, such as by wearing hearing aids, the more likely it is they will be able to adapt to the amplified sound and avoid becoming isolated. This is much harder if they have become used to a ‘quiet’ world\(^9\). The current average is to delay until an individual is in their mid 70s\(^10\). By that stage the hearing loss will have become worse, the individual’s ability to adapt is likely to have deteriorated and the main challenge with age-onset hearing loss will occur: the hearing aid will be discarded, or even if persevered with, the substantial benefits the wearer would have experienced earlier in the hearing loss process (i.e. at a younger age) will be lost.

Screening at this age will ease the burden on the NHS by reducing the amount of care people require to recover from a whole host of conditions. It may also reduce the prevalence and impact of other long term conditions such as dementia. Hundreds of thousands of people with hearing loss, who may have difficulties communicating and be socially isolated, will be able to interact with family and friends, engage in their communities, and access information and a wide range of services. A recent cost-benefit analysis found that hearing screening would cost an estimated £255 million over ten years, but the benefits across this period would amount to over £2 billion (see Appendix)\(^11\). A proactive introduction of hearing screening will have a host of follow on benefits and will echo the government’s focus on prevention and early intervention.

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\(^9\) RNID ‘Hidden Crisis’ 2009
\(^10\) Action on Hearing Loss ‘Hearing Matters’ 2011
\(^11\) RNID/London Economics ‘Cost benefit analysis of hearing screening for older people’ 2010
This report is divided into three sections. The first looks at the prevalence of hearing loss in the UK, the second looks at the impact of hearing loss on both quality of life and health, and the third looks at the evidence that hearing screening will help, including how acceptable and cost-effective the screen would be, and why it should be introduced now.
Hearing Loss in the UK

Over 10 million people across the UK have hearing loss. Age-related damage is the most common cause of hearing loss, which means that older people are very likely to experience hearing loss. Prevalence figures for hearing loss show that the numbers of people affected increase rapidly when people reach their 60s (see the chart on the next page)\textsuperscript{12}. 55\% of people over 60 years of age are estimated to be somewhat affected by hearing loss, and the proportion increases to 71\% for those over 70\textsuperscript{13}. The Global Burden of Disease study 2010 identified hearing loss as one of the foremost causes of increasing levels of chronic disability\textsuperscript{14}. As our population ages the number of people affected by hearing loss is set to grow - by 2031 there will be more than 14.5 million people with hearing loss in the UK\textsuperscript{15}.

Although there are robust and accessible audiological tests widely available, and there is an accepted patient pathway including provision of effective free hearing aids, support and training, many people delay seeking help for their hearing loss. In the UK, only one in three people who could benefit from hearing aids has accessed them. This means an estimated four million people currently have unmet needs\textsuperscript{16}. A hearing screening programme at the age of 65 would encourage hundreds of thousands of people to manage their hearing loss by gaining information about their condition by accessing hearing tests and hearing care. This would include hearing aids and accessing support and training at a time in their lives when they were most able to adapt and benefit.

\textsuperscript{12} Action on Hearing Loss ‘Hearing Matters’ 2011
\textsuperscript{13} Davis, A. ‘Hearing in Adults’ 1995
\textsuperscript{14} Murray, C. J. L. et al. ‘UK health performance: findings of the Global Burden of Disease Study 2010’ \textit{The Lancet} 2013, 381(9871), 997-1020
\textsuperscript{15} Action on Hearing Loss ‘Hearing Matters’ 2011
\textsuperscript{16} Action on Hearing Loss ‘Hearing Matters’ 2011
Estimated numbers with hearing loss in the UK, 2010

Source: Action on Hearing Loss ‘Hearing Matters’ 2011
The impact of hearing loss

Impact on quality of life

Hearing loss has significant personal and social costs. Untreated, it can cause communication problems, leading to high levels of anxiety, stress, and social isolation. Research shows that people with hearing loss are likely to withdraw from social activities involving large groups of people and, where they do take part, communication difficulties can cause problems such as feelings of loneliness\textsuperscript{17}.

Hearing loss can have damaging impacts on spouses and families. It can cause isolation and a decrease in joking in families and distancing between couples, including feelings of frustration and a decrease in intimate talk\textsuperscript{18,19}.

Research has found that hearing loss can also distance couples as a unit from wider social networks, and that partners of people with hearing loss often feel frustration and loneliness. They report missing out on social activities and companionship\textsuperscript{20,21}.

\textsuperscript{17} RNID ‘Hidden Crisis’ 2009
\textsuperscript{18} Brooks, D. N. et al. ‘The effects on significant others of providing a hearing aid to the hearing-impaired partner’ \textit{British Journal of Audiology} 2001, 35, 165-171
\textsuperscript{19} Hallberg, L.R-M. & Barrenas, M-L. ‘Living with a male with noise-induced hearing loss: experiences from the perspective of spouses’ \textit{British Journal of Audiology} 1993, 27, 255-261
\textsuperscript{20} RNID ‘In It Together’ 2010
**Impact on health**

The vast majority of people with hearing loss are older, and will often have other long-term conditions alongside their hearing loss. Action on Hearing Loss’s annual survey of people of all ages with a hearing loss found that 49% have another long-term condition or disability that limits their daily activities\(^{22}\). These levels will be higher in people aged 65 and over, nearly two thirds of whom will have hearing loss and among whom there will also be high levels of other long-term conditions such as cardiovascular disease, stroke, diabetes, dementia and sight loss\(^{23}\).

Communication difficulties resulting from unaddressed hearing loss cause problems for people seeking help and treatment for other health issues. For example, research from Action on Hearing Loss has found that over a quarter of people with hearing loss have been unclear about their diagnosis after visiting a GP\(^{24}\).

The social isolation that often results from hearing loss may itself lead to mental ill health. Hearing loss more than doubles the risk of depression in older people\(^{25}\), and there is evidence that hearing loss is associated with cognitive decline\(^{26}\). People with mild hearing loss have nearly twice the chance of going on to develop dementia as do people with normal hearing. The risk increases threefold for those with moderate hearing loss and fivefold for those with severe hearing loss\(^{27}\).

There is also significant co-occurrence of hearing loss with other long-term conditions including cardiovascular disease, diabetes and sight loss, as they are all experienced widely among older people. Hearing loss leads to problems diagnosing and managing these conditions, increasing their impact, lowering an individual’s quality of life and placing unnecessary costs on the NHS\(^{28}\).

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\(^{22}\) Action on Hearing Loss ‘Annual Survey report’ 2011  
\(^{23}\) Action on Hearing Loss ‘Joining Up’ 2013  
\(^{24}\) Action on Hearing Loss ‘Access All Areas?’ 2013  
\(^{25}\) Saito, H. et al. ‘Hearing handicap predicts the development of depressive symptoms after three years in older community-dwelling Japanese’ *Journal of the American Geriatrics Society* 2010, 58(1), 93-7  
\(^{27}\) Lin, F.R. et al. ‘Hearing Loss and Incident Dementia’ *Archives of Neurology* 2011, 68(2), 214-220  
\(^{28}\) Action on Hearing Loss ‘Joining Up’ 2013
Evidence that hearing screening will help

Improving hearing and communication

There is a large problem of unaddressed hearing loss in the UK. On average, people referred for hearing assessment are in their mid 70s and have had a hearing problem for 10 years or more\textsuperscript{29}. The main reason for waiting is that individuals do not recognise that they have a problem or if they do they do not consider their hearing to be sufficiently poor. 60\% of people aged 75 and over have a substantial hearing impairment, but by this age the ability to adjust and manage hearing loss is substantially reduced\textsuperscript{30}. Earlier intervention would ensure that people are supported to manage their hearing loss at an age when they are able to benefit most.

There are a wide range of services that these people could benefit from following an assessment and referral for hearing loss at the age of 65, from the provision of hearing aids to lipreading classes to support and training in communication for people with hearing loss and their families.

A recent population study found that around one in eight people (12\%) aged 55-74 years is severely annoyed, worried or upset about their hearing and would benefit from referral for hearing aids, but many of these do not seek help and only 3\% of this population currently have hearing aids\textsuperscript{31}.

The lack of earlier intervention causes reduced quality of life and isolation among individuals who could be gaining substantial benefit if they were getting help\textsuperscript{32}. There is therefore clearly a need to motivate people to address their hearing loss earlier and improve their quality of life.

\textsuperscript{29} Action on Hearing Loss ‘Hearing Matters’ 2011
\textsuperscript{30} Davis, A. et al. ‘Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models’ \textit{Health Technology Assessment} 2007, 11(42), 1-294
\textsuperscript{31} Davis, A. et al. ‘Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models’ \textit{Health Technology Assessment} 2007, 11(42), 1-294
\textsuperscript{32} Davis, A. et al. ‘Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models’ \textit{Health Technology Assessment} 2007, 11(42), 1-294
Improving communication and wider health

Addressing hearing problems also has wider benefits. It can resolve problems with communication and social isolation, bring people closer to their partners, families and communities, lower the risk of depression and overcome barriers to accessing health and social care services\textsuperscript{33}. Diagnosing and managing conditions such as cardiovascular disease, stroke, diabetes, dementia and sight loss becomes easier and less costly, as patients are more able to access services, communicate with professionals, and benefit from interventions\textsuperscript{34}.

Screening would benefit these and other groups at risk of developing hearing loss, such as those with learning disabilities\textsuperscript{35}. Specialised assessment tools and approaches to screening should be developed for those with other conditions. Getting good, effective care earlier for all people who have hearing loss will improve quality of life and save money in the longer term.

Hearing screening and the resultant management of hearing loss would be particularly likely to have a large impact in terms of minimising the risk and impact of dementia. Although research is needed to better understand the relationship, it has been suggested that taking steps to manage hearing loss may slow cognitive decline\textsuperscript{36,37}.

The fact that hearing loss and dementia often occur together and are particularly difficult to manage when they are experienced together means that large benefits would be gained from ensuring people seek help for their hearing loss and adapt before the onset or progression of dementia. A recent joint report between Action on Hearing Loss and the Deafness Cognition and Language Research Centre estimated that £28 million could be saved in delayed entry to care homes in England if hearing loss was properly diagnosed and managed in people with dementia\textsuperscript{38}.

\textsuperscript{34} Action on Hearing Loss ‘Joining Up’ 2013
\textsuperscript{35} Yeates, S. ‘Hearing loss in adults with learning disabilities’ \textit{British Medical Journal} 1991, 303, 427-8
\textsuperscript{37} Lin, F.R. et al. ‘Hearing Loss and Incident Dementia’ \textit{Archives of Neurology} 2011, 68(2), 214-220
\textsuperscript{38} Action on Hearing Loss ‘Joining Up’ 2013
Furthermore, with long term conditions such as dementia, it can often become more difficult to diagnose and manage hearing loss if it is discovered at a later stage. For example, one study of care home residents, many of whom had dementia, found that only 5% were able to complete a normal hearing assessment\(^{39}\), resulting in any hearing loss not being diagnosed. There is also a risk of hearing loss being misdiagnosed as other conditions, including dementia\(^{40}\). If hearing loss is diagnosed earlier, people have more time to adapt, making it easier and less costly to manage the hearing loss and any other conditions\(^{41}\).

\(^{39}\) Burkhalter, C.L. et al. ‘Examining the effectiveness of traditional audiological assessments for nursing home residents with dementia-related behaviors’ *Journal of American Academic Audiology* 2009, 11(9), 529-38


\(^{41}\) Action on Hearing Loss ‘Joining Up’ 2013
Acceptability of the assessment and interventions

Hearing screening, likely to involve one or more questionnaires along with very simple audiometric testing, has been found to be an acceptable intervention for between 80% and 90% of people, especially if it is undertaken at an individual’s own GP practice. There is unlikely to be anxiety around taking the screening test, and the risks of taking the test are low.

There are a variety of interventions that hearing screening would open up to people who are assessed and then diagnosed with hearing loss, including training, support, and hearing aids. Training and support are generally acceptable and beneficial activities. They allow people to mix with others facing similar issues, learn about solutions and methods to manage their hearing loss, and improve the ability to communicate. For example lipreading classes are proven to improve ability at lipreading, and participants report learning other useful communication as well. Participants benefit most if they attend classes soon after they develop a hearing loss.

Hearing aids amplify sounds, increasing the ability to listen and communicate. There is sometimes a stigma around wearing hearing aids, but health professionals can help by talking through a person’s hearing loss and the benefits to be gained from all of the possible interventions. There is very good evidence from a systematic review of the literature that hearing aids improve the quality of life of adults who use them. Along with training and support, they therefore reduce the psychological, social and emotional effects of hearing loss, improving health and independence as well as relationships with partners and families.

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42 Davis, A. et al. ‘Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models’ Health Technology Assessment 2007, 11(42), 1-294
43 Action on Hearing Loss ‘Not Just Lip Service’ 2013
44 Kochkin, S. ‘MarkeTrak VII: obstacles to adult non-user adoption of hearing aids’ The Hearing Journal 2007, 60(4), 24-50
Addressing previous concerns about hearing screening

The National Screening Committee (NSC) last reviewed the case for an adult hearing screening programme in March 2009. The NSC questioned whether take up of hearing aids would be high among those with all levels of hearing loss, and whether people would continue to use them. Hearing screening is due to be considered again in 2012/13, but the NSC has also said that it can consider it again if there is new evidence. Since 2009, public health concerns about hearing loss have increased, as new evidence has emerged that people with hearing loss are not only more likely to experience social isolation and depression\textsuperscript{49}, but are also at a higher risk of developing dementia\textsuperscript{50,51}.

There is little evidence on the uptake of training and support, but various studies have shown a substantial increase in the uptake and use of hearing aids as a result of screening. A recent population study which screened 55-74 year olds achieved an uptake of hearing aids of 36\%, of whom 43\% were still using their hearing aids when they were followed up 12 years later\textsuperscript{52}. This study offered hearing aids to all those found to have low levels of hearing loss (impairment of 25dB and above). If a screening programme targeted people with more severe hearing loss at the age of 65, the uptake and continued use are likely to be even greater – prevalence of hearing aid use among the general population doubles between the ages of 55 and 65\textsuperscript{53}, and there is evidence that uptake of and satisfaction with hearing aids

\begin{flushright}
\textit{Benefits of Amplification in Adults’} \textit{Journal of the American Academy of Audiology} 2007, 18(2), 151-183
\textsuperscript{47} National Council on Aging ‘The consequences of untreated hearing loss in older persons’ \textit{Head and Neck Nursing} 2000, 18(1), 12-16
\textsuperscript{48} Brooks, D. N., Hallam, R. S., & Mellor, P. A. ‘The effects on significant others of providing a hearing aid to the hearing-impaired partner’ \textit{British Journal of Audiology} 2001, 35, 165-171
\textsuperscript{49} Saito, H. et al. ‘Hearing handicap predicts the development of depressive symptoms after three years in older community-dwelling Japanese’ \textit{Journal of the American Geriatrics Society} 2010, 58(1), 93-7
\textsuperscript{51} Lin, F.R. et al. ‘Hearing Loss and Incident Dementia’ \textit{Archives of Neurology} 2011, 68(2), 214-220
\textsuperscript{52} Davis, A. et al. ‘Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models’ \textit{Health Technology Assessment} 2007, 11(42), 1-294
\textsuperscript{53} Davis, A. et al. ‘Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models’ \textit{Health Technology Assessment} 2007, 11(42), 1-294
\end{flushright}
increases with age and severity of hearing loss\textsuperscript{54}. Furthermore, it is proposed that a variety of other training and support interventions would be offered as well as hearing aids, which would further increase the hugely beneficial impact of a hearing screening programme.

\textsuperscript{54} Knudsen, L. V. et al. 'Factors influencing help seeking, hearing aid uptake, hearing aid use and satisfaction with hearing aids: a review of the literature' \textit{Trends in Amplification} 2010, 14(3), 127-54
Cost-benefit analyses of hearing screening

Further evidence has been provided since then by cost-benefit analyses. One analysis from Action on Hearing Loss found that significant cost savings could be gained from introducing a hearing screening programme across the UK\(^55\). It estimated that the costs of screening 65 year olds and providing interventions would be £255 million over ten years, but the benefits across this period would amount to over £2 billion, including avoided personal, employment, social and healthcare costs. This gives a benefit to cost ratio, developed in accordance with Government guidance, of more than 8:1. More information on this analysis is included in the Appendix.

A more recent analysis published in the Journal of Public Health found that such a hearing screening programme would be a more cost effective way of reducing unmet need for hearing aids and improving quality of life among older adults than the current system of referral for hearing assessments\(^56\). The costs to people of not acting are high, and the potential benefits of hearing screening are huge.

The impact of such a programme would be large - between 25,000 and 39,000 additional 65 year olds would be offered hearing aids and accept them in just the first year of such screening, and an additional large number would benefit from other interventions which would allow them to stay independent and socially included\(^57\). Over the longer term, this would mean improvements in health and quality of life for hundreds of thousands of people with hearing loss and their families across the UK.

\(^{55}\) RNID/London Economics ‘Cost benefit analysis of hearing screening for older people’ 2010

\(^{56}\) Morris, A.E. et al. ‘An economic evaluation of screening 60- to 70-year-old adults for hearing loss’ Journal of Public Health 2013, 35(1), 139-146

\(^{57}\) RNID/London Economics ‘Cost benefit analysis of hearing screening for older people’ 2010
Hearing Screening Now!

We are calling for a Hearing Screening programme to be instituted across the country for everyone as they reach the age of 65. This will bring significant benefits to their wellbeing; their ability to access care and health services; their ability to interact with their families, friends and work colleagues. It will help them to adapt earlier and stop them becoming isolated. It will assist in the diagnosis and management of other conditions, such as dementia, and lead to significant financial savings within the NHS. Earlier detection and increased use of hearing aids will also reduce the stigma surrounding hearing loss.

We would like to see a pilot programme established to examine the most practical way to deliver this nationwide screening programme, be it through audiologists, GPs, or combined with screening for other conditions. We would like to see invitations to this screening programme accompanied by information on the benefits that early diagnosis and management of hearing loss will bring.

We are asking the National Screening Committee and the Government to take the necessary steps to implement a national hearing screening programme now.

Stephen Lloyd MP
Age UK
Carers UK
Dementia UK
Independent Age
MS Society
Royal Voluntary Service
Action on Hearing Loss
Hearing Link
UKCoD
References

Action on Hearing Loss ‘Joining Up’ 2013
Action on Hearing Loss ‘Not Just Lip Service’ 2013
Action on Hearing Loss ‘Access All Areas?’ 2013
Action on Hearing Loss ‘Hearing Matters’ 2011
Action on Hearing Loss ‘Annual Survey report’ 2011


Brooks, D. N. et al. ‘The effects on significant others of providing a hearing aid to the hearing-impaired partner’ British Journal of Audiology 2001, 35, 165-171

Burkhalter, C.L. et al. ‘Examining the effectiveness of traditional audiological assessments for nursing home residents with dementia-related behaviors’ Journal of American Academic Audiology 2009, 11(9), 529-38


Davis, A. et al. ‘Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models’ Health Technology Assessment 2007, 11(42), 1-294

Davis, A. ‘Hearing in Adults’ 1995


Kochkin, S. ‘MarkeTrak VII: obstacles to adult non-user adoption of hearing aids’ The Hearing Journal 2007, 60(4), 24-50

Lin, F.R. et al. ‘Hearing Loss and Incident Dementia’ *Archives of Neurology* 2011, 68(2), 214-220

Morris, A.E. et al. ‘An economic evaluation of screening 60- to 70-year-old adults for hearing loss’ *Journal of Public Health* 2013, 35(1), 139-146


National Council on Aging ‘The consequences of untreated hearing loss in older persons’ *Head and Neck Nursing* 2000, 18(1), 12-16

RNID/London Economics ‘Cost benefit analysis of hearing screening for older people’ 2010

RNID ‘In It Together’ 2010

RNID ‘Hidden Crisis’ 2009

Saito, H. et al. ‘Hearing handicap predicts the development of depressive symptoms after three years in older community-dwelling Japanese’ *Journal of the American Geriatrics Society* 2010, 58(1), 93-7


Appendix: Cost benefit analysis of hearing screening for older people

This appendix sets out the methodology and findings of an Action on Hearing Loss / London Economics’ cost-benefit assessment of a proposed nationwide hearing screening programme for older people in the UK\(^{58}\).

**Key finding**
At a cost of £255m over 10 years, £2bn of savings can be delivered through the introduction of a hearing screening programme and interventions for people at the age of 65.

**Context and motivation**
Hearing loss affects a significant proportion of the UK population, with the majority of people affected aged over 60. It is estimated that approximately ten million people in the UK are deaf or hard of hearing, with 55% of people over 60 estimated to be somewhat affected by hearing loss\(^{59}\). Moreover, as the average age of the UK population continues to rise, the number affected is expected to increase.

Researchers have found that people who are deaf or hard of hearing can experience lower health-related quality of life: higher distress, anxiety, depression, somatisation, social isolation and loneliness with negative implications on emotional, mental, and physical health.

Hearing aids and other interventions such as support and training can limit the impacts of hearing loss. The benefits of hearing aid use (significant improvements in emotional, mental, and physical health, as well as general quality of life) are strongly supported by research findings. However, despite being available free-of-charge through the NHS, individuals wait an average of ten years from the initial onset of hearing loss before seeking to address it.

**Action on Hearing Loss proposal**
Action on Hearing Loss proposes the implementation of a nationwide hearing screening programme for older people in the hope of reducing the extent of undiagnosed hearing loss, reducing the stigma of hearing loss, increasing the take-up of hearing assistive technology (e.g. hearing aids), enhancing the quality of living of those affected and ultimately reducing the costs of health and social care to the Exchequer.

**Cost-Benefit Analysis model**

\(^{58}\) RNID/London Economics ‘Cost benefit analysis of hearing screening for older people’ 2010

National screening programmes can be expensive. However, the benefits of screening can substantially outweigh the costs, bringing about cost-savings in the longer term, so Cost-Benefit Analysis (CBA) is required. A Cost-Benefit model was developed in accordance with HM Government guidance and best practice techniques, comprising two age thresholds: screen at 55 years of age; and screen at 65 years of age.

The information and data used to populate the CBA model was sourced from:
- Review of the economics of hearing screening literature;
- Web-based search for research reports and grey (unpublished) literature;
- Publicly available data sources (e.g. Office for National Statistics, NHS information centre);
- Action on Hearing Loss expert opinion (in the absence of reliable data); and
- Expert opinion from other health policy experts.

**Estimation of screened and treated populations**
The population flows through the screening and NHS audiology system were estimated:
- The number of people to whom a GP screening invitation letter is sent;
- The number of people that attend their local GP surgery for screening;
- The number of people that undertake a full audiometry assessment under NHS; and
- The number of people that are fitted with a hearing aid under NHS.

The final estimate was adjusted down to remove individuals that would have been treated in any case without the intervention (under the status quo scenario) in order to calculate the estimated additional number of people fitted with hearing aids under the NHS per annum due to the screening programme.

It was estimated that an additional 6,688 to 7,398 55 year-olds, or 25,464 to 38,815 65 year-olds, would be fitted with hearing aids under the NHS per annum over the period 2010 to 2019.

The following tables summarise the valuation of costs and benefits, and a calculation of the net cost benefit of hearing screening. For further details of these calculations see the full report.

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60 RNID/London Economics ‘Cost benefit analysis of hearing screening for older people’ 2010
Valuation of costs

<table>
<thead>
<tr>
<th>Cost item</th>
<th>Present Value (£m) 55 years-old</th>
<th>Present Value (£m) 65 years-old</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Once-off, initial costs</strong></td>
<td>2.3</td>
<td>2.3</td>
</tr>
<tr>
<td>Cost of advertising</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Cost of providing each GP surgery with a handheld hearing screening device</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Cost of training nurses to operate the screening using the handheld hearing screening device</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td><strong>Ongoing costs (PV)</strong></td>
<td><strong>83.7</strong></td>
<td><strong>253.3</strong></td>
</tr>
<tr>
<td>PV (Cost of ongoing advertising)</td>
<td>6.5</td>
<td>6.5</td>
</tr>
<tr>
<td>PV (Cost of invitation letters)</td>
<td>5.1</td>
<td>4.4</td>
</tr>
<tr>
<td>PV (Cost of screening)</td>
<td>7.7</td>
<td>7.6</td>
</tr>
<tr>
<td>PV (Cost of full hearing assessment)</td>
<td>20.8</td>
<td>36.4</td>
</tr>
<tr>
<td>PV (Cost of fitting and provision of hearing aid)</td>
<td>22.1</td>
<td>97.0</td>
</tr>
<tr>
<td>PV (Cost of maintenance)</td>
<td>21.4</td>
<td>101.5</td>
</tr>
<tr>
<td><strong>PV (Total cost of the intervention)</strong></td>
<td><strong>86.0</strong></td>
<td><strong>255.7</strong></td>
</tr>
</tbody>
</table>

Note: A discount rate of 3.5% and a time period of 10 years have been used to calculate the PV figures.
Source: London Economics analysis
Valuation of benefits

<table>
<thead>
<tr>
<th>Present Value (PV) analysis of the benefits of the intervention</th>
<th>Present Value (£m) 55 years-old</th>
<th>Present Value (£m) 65 years-old</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefit item</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Once-off, initial benefits</strong></td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Ongoing benefits (PV)</strong></td>
<td>699.6</td>
<td>2,084.6</td>
</tr>
<tr>
<td>PV (Avoided personal and social costs of living with a HI)</td>
<td>335.6</td>
<td>1,480.9</td>
</tr>
<tr>
<td>PV (Employment-related impacts of treating HIIs)</td>
<td>339.0</td>
<td>493.6</td>
</tr>
<tr>
<td>PV (Avoided costs of Healthcare services)</td>
<td>21.2</td>
<td>92.9</td>
</tr>
<tr>
<td>PV (Avoided costs of Health care service efficiency, including missed appointments)</td>
<td>3.9</td>
<td>17.2</td>
</tr>
<tr>
<td><strong>PV (Total benefit of the intervention)</strong></td>
<td>699.6</td>
<td>2,084.6</td>
</tr>
</tbody>
</table>

Source: London Economics analysis
Net cost/benefit of the policy intervention

The proposed policy intervention, under both age thresholds, is supported by a strong positive Net Benefit and a Benefit:Cost Ratio of more than 8:1.

<table>
<thead>
<tr>
<th>Net Present Value (PV) analysis of the intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost item</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>PV (Total cost of the intervention)</td>
</tr>
<tr>
<td>PV (Total benefit of the intervention)</td>
</tr>
<tr>
<td>NPV (Net Benefit) of the intervention</td>
</tr>
<tr>
<td>Benefit:Cost Ratio</td>
</tr>
</tbody>
</table>

Note: A discount rate of 3.5% and a time period of 10 years have been used to calculate the PV figures.

Source: London Economics analysis