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UK National Screening Committee Screening for Hearing Loss in Adults - an evidence review

Consultation comments pro-forma

Name:	John Day, BSA Trustee	Email address:	xxxx xxxx
Organisation (if appropriate):	British Society of Audiology		
Role:	The BSA is the pre-eminent learned Audiological Society in the UK. Its membership works in the full range of disciplines in the field of Audiology, predominantly in professional clinical practice, clinical and scientific research, but also in higher education. Its aims are to advance audiological research, learning, practice and clinical impact. The BSA has an important role in providing expert independent, evidence-based advice and is influential at a national level. We therefore believe that the BSA is well placed to comment on this evidence review and it's findings.		
Do you consent to your name being published on the UK NSC website alongside your response? Yes x No <input type="checkbox"/>			
Section and / or page number	Text or issue to which comments relate	Comment	
Summary		We request that the summary be re-written to reflect amendments to the main contents.	
1 Introduction		The paper primarily reviews evidence published up to December 2012 yet is being presented for consultation in summer 2015. The review therefore is not up to date, it has not considered more recent literature including where this relates to the impact of hearing loss, particularly relating to dementia.	
2.3	'All the cost-effective primary prevention interventions should have been implemented as far as practical'	We consider it reasonable for the conclusion to this section to state that cost effective primary prevention interventions have been implemented as far as is practical in this context. Legislation to help prevent noise induced hearing loss extends back to the Health & Safety at Work Act (1974), through to the more exacting Control of Noise at work Regulations of 2005. So, aside from questions about the effectiveness of noise control interventions, such controls have been recognised and in place in the workplace for decades. It is now less likely that any more stringent future legislation will yield a	

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		significant reduction in numbers of adults with hearing loss relevant to this review. For those adult patients presenting to Audiologists for rehabilitation, the dominant feature is their age (and presbycusis) rather than any history of notable noise exposure.
3.1	'There should be a simple, safe, precise and validated screening test'	<p>In addition to those tests described, many of a very basic nature, we draw your attention to more precise tests described more recently; hand-held screeners and to speech in noise tests that should also be considered.</p> <p>We also draw attention to the content Health Technology Assessment 11(42) on this matter which concludes: <i>'The best screen judged in terms of d_ and cost for this target group was two questions and a hearing screen using a pure tone at 3 kHz 35 dB HL.'</i></p> <p>Parving et al (2008) Evaluation of a hearing screener, <i>Audiological Medicine</i> 6(2), 115-9;</p> <p>Davis et al (2012) Diagnosing patients with age-related hearing loss and tinnitus: supporting GP clinical engagement through innovation and pathway redesign in audiology services, <i>International Journal of Otolaryngology</i>.</p> <p>Watson (2012) Telephone screening tests for functionally impaired hearing: current use in seven countries and development of a US version. <i>Journal of the American Academy of Audiology</i> 23, 757-767.</p> <p>Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, <i>Health Technology Assessment</i> 11(42).</p>
3.5	'There should be an agreed policy on the further diagnostic investigation of individual with a positive test result and on the choices available to those individuals.'	There are established management routes for patients presenting for assessment through the traditional GP route to Audiology. Examples exist at national and local levels informed by professional and learned society guidance. We see no reason why assessment of patients referred from screening would differ from existing routes. The clinical management decisions made by Audiologists are complex as they consider individual patient needs and attitudes as well as empirical data such as audiometric results. A highly formulaic approach is therefore not appropriate. It would therefore be


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		wrong to conclude that this as area of uncertainty
4.1 & 4.2	'There should be an effective treatment or intervention for patients identified through early detection, with evidence of early treatment leading to better outcomes'	<p>Some points of correction: Nearly all hearing aids are now digital. Reference to analogue hearing aids is therefore irrelevant.</p> <p>Reference to cochlear implantation (CI) in this screening paper is irrelevant as candidates for CI will have severe/profound hearing loss and gross /immediate needs if unassisted. They would present without the need for screening. Numbers however are relatively small and most candidates will be existing users of hearing aids.</p> <p>The content of sections 4.1 and 4.2 is not cohesive and would benefit from sub sections.</p> <p>In terms of effectiveness of the intervention it should be recognised that hearing aids are not the only effective intervention and objective of screening. For patients identified through screening there is merit in providing information, counselling and directing individuals towards use of assistive listening devices. This can translate into more informed clinical practices and better patient choice.</p> <p>Evidence for the benefits of hearing aids is presented under the following headings with references following:</p> <p>Benefits of early amplification: It is well recognised that providing hearing aids to someone early is more beneficial than waiting. The UK Health Technology Assessment (1) reported that <i>'those identified early had greater benefit than those of the same age and hearing impairment who were fitted with hearing aids later'</i> (p. 145). This reflects in part age-related co-morbidities (eg reduced manual dexterity) impacting on use, satisfaction and benefit from hearing aids, but also likely neuro-degenerative effects associated with underuse of the auditory pathway. Therefore, continued auditory stimulation and familiarization with hearing aids for those with mild losses can be</p>

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		<p>regarded as <u>preventing</u> more disabling hearing impairment if hearing aids were provided many years later – as would be the case if the variation proposal were implemented.</p> <p>Magnitude of health improvement. A UK Health Technology Assessment (1) found a significant improvement on the generic quality of life indicator the Health Utilities Index (HUI) of 0.075 (95% CI 0.038 to 0.112) for individuals fitted with hearing aids from mild losses onwards. Other studies (2,3,4) have reported HUI-3 improvements from hearing aids are 0.06, 0.12, and 0.08, respectively. There are also well established impacts of hearing aid use on condition specific measures (5, 6).</p> <p>Strength and quality of evidence. Most randomised controlled trials (RCTs) of hearing aids compare their features or fittings (7). There are few RCTs investigating the effectiveness of hearing aids per se. This is because their benefits are long recognized and demonstrated, and in today's research funding climate it is doubtful that any grant funder would fund a RCT to show the benefit of hearing aids. In many ways a hearing aid is the 'best-proven' intervention for hearing loss, which in a UK context provides difficulties in performing an ethical RCT study. However, two available RCTs have demonstrated clear benefits of hearing aids to hearing-related quality of life (8,9). A Cochrane Review of the Effectiveness of hearing aid for mild-moderate hearing loss is currently underway to synthesise the up-to-date evidence, which will provide high-quality evidence on the published research. This will help inform future research directions.</p> <p>Aside from the research evidence base, we believe that it also important to consider practice-based evidence. Audiology has been at the forefront in the use of patient reported outcomes measures (PROMS) within service delivery. Extensive use of research validated PROMS is used to manage individual patients and monitor impact of interventions across cohorts of patients. Data such as from the Glasgow Hearing Aid</p>
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		<p>Benefit Profile (10) should be available from the local services and should also be considered by the review.</p> <p>Prevention of future illness. There is increasing evidence of an independent association between hearing loss, declining cognitive function (13) and dementia (14). Hearing aid use has been associated with better cognition (15) and evidence of the benefit of hearing aids on communication (see above). Consequently, a reasonable hypothesis is that hearing aids will slow the rate of cognitive decline that would ordinarily lead to a diagnosis of dementia. A separate paper providing an update on dementia and hearing loss is attached.</p> <p> Dementia and hearing loss literature</p> <p>Given the scale of impact and burden of dementia on individuals, their carers and society, as well as its current prominence in on the health-care planning agenda, it would be prudent to encourage access to an intervention that has a positive impact on communication ability in the elderly.</p> <p>Benefits for people with existing health problems. Amplification has a positive impact for people with existing health conditions such as depression (9) and dementia (16). If people can hear and understand better then they can manage their other morbidities so much better, as well as reduce the disability and handicap they might develop in the future. It also reduces barriers to communications with their doctors or other health-care providers: indeed, one could argue that good communication is fundamental to all health care. Hearing aids should be available to support all with mild hearing loss to i) mitigate the impact of other health problems (e.g. depression) and ii)</p>
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		<p>optimise outcomes of other healthcare interventions.</p> <p>Addressing health inequalities. The impact of hearing loss is not randomly spread; it predominates in the elderly, those who have had more noisy work associated with lower paid occupations (17) and those from lower socio-economic groups (18). As a group they may be expected to predominate in areas of deprivation. This provides for an underlying health inequality associated with hearing loss.</p> <p>In view of the above evidence, we believe that there is an effective treatment or intervention available for patients identified through screening, with evidence of early treatment leading to better outcomes</p> <p>References:</p> <ol style="list-style-type: none">1. Davis A, Smith P, Ferguson M, Stephens D, Gianopoulos I. 2007. Acceptability, benefit and cost of early screening for hearing disability: a study of potential screening tests and models. Health Technol Assess. 2007; 11(42)2. Barton GR, Bankart J, Davis AC, Summerfield QA. Comparing utility scores before and after hearing-aid provision : results according to the EQ-5D, HUI3 and SF-6D. Appl Health Econ Health Policy. 2004;3(2):103-5.3. Grutters J P, Joore M A, van der Horst F, Verschuure H, Dreschler W A, Anteunis L J. Choosing between measures: comparison of EQ-5D, HUI2 and HUI3 in persons with hearing complaints. Qual Life Res. 2007; 16:1439–1449.4. Swan IR, Guy FH, Akeroyd MA. Health-related quality of life before and after management in adults referred to otolaryngology: prospective national study. Clin Otolaryngol. Feb 2012; 37(1): 35-435. Chisolm TH et al. A systematic review of health-related quality of life and hearing aids: final report of the American Academy of Audiology Task Force on the health-related quality of life benefits of amplification in adults. J. Am. Acad. Audiol. 2007; 18:151-83
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		<p>6. Bainbridge K and Wallhagen M. Hearing Loss in an Aging American Population: Extent, Impact, and Management. <i>Annu Rev Public Health</i>. 2014; 35:139–52</p> <p>7. Metselaar M, et al. Self-reported disability and handicap after hearing-aid fitting and benefit of hearing aids: comparison of fitting procedures, degree of hearing loss, experience with hearing aids and uni- and bilateral fittings. <i>Eur Arch Otorhinolaryngol</i>. 2009; 266:907–917</p> <p>8. Mulrow C D et al. Quality-of-Life Changes and Hearing Impairment: A Randomized Trial. <i>Ann Intern Med</i>. 1990;113(3):188-194.</p> <p>9. Yueh B et al. Randomized Trial of Amplification Strategies001 – Arch Otol Head and Neck Surgery, vol 127.</p> <p>10. Gatehouse, S. A self-report outcome measure for the evaluation of hearing-aid fittings and services, <i>Health Bulletin</i>, 1999; 57:424-436</p> <p>11. NICE. Guide to the methods of technology appraisal. 2013 http://www.nice.org.uk/article/pmg9/resources/non-guidance-guide-to-the-methods-of-technology-appraisal-2013-pdf</p> <p>12. Morris A E et al. An economic evaluation of screening 60 to 70-year old adults for hearing loss. <i>Journal of Public Health</i>. 2012; 35(1):139-146.</p> <p>13. Lin F, et al. Hearing Loss and Cognitive Decline in Older Adults. <i>JAMA Intern. Med</i>. 2013; 173: 293-99</p> <p>14. Lin F, et al. Hearing loss and incident dementia. <i>Archives of Neurology</i>, 2011; 68(2):214-220</p> <p>15. Dawes P, et al. Hearing loss and cognition: The role of hearing aids, social isolation and depression. <i>PLoS ONE</i>. 2015. Published on line March 11. 10(3): e0119616.doi:10.1371/journal.pone.0119616</p> <p>16. Palmer, C. V., Adams, S. W., Bourgeois, M., Durrant, J., & Rossi, M., 1999. Reduction in caregiver-identified problem behaviors in patients with Alzheimer disease post-hearing-aid fitting. <i>J Speech Lang Hear Res</i>, 42, 312-328</p>
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		<p>17. Lutman, ME & Spencer H S, Occupational noise and demographic factors in hearing. Acta Otolaryngol Suppl, 476, 74-84.</p> <p>18. Ecob R, et al. Is the relationship of social class to change in hearing threshold levels from childhood to middle age explained by noise, smoking, and drinking behaviour? International Journal of Audiology. 2008. 47: 100-108</p>
4.2	There should be agreed evidence-based policies covering which individuals should be offered treatment and the appropriate treatment to be offered.	See comments to 3.5 above
5.1	'Evidence from RCTs.....'	We draw attention to findings of other randomised controlled trials such as Mulrow 1990 and other studies and modelling of screening such as Davis et al 2007 and Morris et al 2013.
6	<p>Conclusions</p> <p>Including stated area of uncertainty: 'capacity of audiological services to meet potential screening programme increased demand'</p>	<p>The conclusions section needs to be revised to reflect the above.</p> <p>It is not unreasonable to suggest that existing services would have difficulty managing additional activity referred from screening within existing resources – there is clearly unlikely to be spare capacity in any NHS service at present. The question should be: 'can additional capacity be developed to manage demand generated by screening?' This could be addressed by phased introduction of screening programmes, not least to allow for supporting resources to be secured. Consideration of the financial implications should consider savings to the health economy and beyond. If hearing loss is acknowledged as a significant health issue (eg as highlighted in respective home country National Action Plans for Audiology) it justifies a pro-active approach to identification and management.</p>

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6.2	Implications for research	<p>In the absence of a recommendation to introduce screening, a programme of research should be instigated that systematically addresses outstanding practical questions in UK settings.</p> <p>The programme should be devised to address any remaining areas of uncertainty. In relation to hearing aids as an intervention; this can be guided by the recent top 10 research priorities for mild to moderate hearing loss that have been identified by the National Institute for Health Research funded James Lind Alliance Priority Setting Partnership (weblink). Notably the top four priorities are:</p> <ul style="list-style-type: none">(i) What adverse effects are associated with not treating mild to moderate hearing loss in adults?(ii) Does the early fitting of hearing aid(s) result in increased patient benefit and/or improved cost-effectiveness of the service?(iii) Does the early fitting of hearing aids slow the rate of cognitive decline?(iv) Does early identification, diagnosis and treatment of mild to moderate hearing loss prevent further deterioration of hearing? <p>There is evidence that readiness to take action (i.e. takeup hearing aids) and increased intrinsic motivation is associated with increased hearing aid takeup and greater success with hearing aids (Ridgeway, Laplante). A simple screening question to assess readiness and motivation could enhance the effectiveness a simple audiometric screen (Ferguson) Further research to assess readiness and motivation to screen for hearing aid uptake is warranted.</p> <p>Rather than state the implications for research, the report should be firmer in asserting</p>

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		<p>research priorities and actively prompt UK research commissioning bodies to support such research. The BSA believes that there is now sufficient evidence and momentum to test hearing screening for adults through large scale RCTs at service level.</p> <p>Selected additional references:</p> <p>http://www.hearing.nihr.ac.uk/news/latest-news/article/top-10-research-priorities-for-mild-moderate-hearing-loss-in-adults</p> <p>RIDGEWAY, J., HICKSON, L. & LIND, C. 2015. Autonomous motivation is associated with hearing aid adoption. <i>International Journal of Audiology</i>.</p> <p>LAPLANTE-LÉVESQUE, A., HICKSON, L. & WORRAL, L. 2013. Stages of change in adults with acquired hearing impairment seeking help for the first time: application of the transtheoretical model in audiology rehabilitation. <i>Ear Hear</i>, 34, 447-457.</p> <p>FERGUSON, M., MAIDMENT, D. W., RUSSELL, N., GREGORY, M. & NICHOLSON, R. Accepted. Feasibility and evaluation of motivational engagement in first-time hearing aid users. <i>International Journal of Audiology</i>.</p>
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Name:	Brian Lamb OBE	Email address:	xxxx xxxx
Organisation (if appropriate):	Hearing Loss and Deafness Alliance		
Role:	Chair		
<p>Do you consent to your name being published on the UK NSC website alongside your response?</p> <p style="text-align: center;">Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>			
Section and / or page number	Text or issue to which comments relate	Comment	
		<i>Please use a new row for each comment and add extra rows as required.</i>	
General	General	<p>The Hearing Loss and Deafness Alliance is a national coalition of the major public, private and voluntary sector organisations with an interest in hearing loss. The following members have supported this response:</p> <ul style="list-style-type: none"> • Action on Hearing Loss • Action for Deafness • Action Deafness • British Hearing Aid Manufacturers Association • British Academy of Audiology • British Society of Hearing Aid Audiologists • British Association of Teachers of the Deaf • British Society of Audiology • British Tinnitus Association • Cambridgeshire Hearing Help • Cochlear Implanted Children's Support Group 	

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		<ul style="list-style-type: none">• Ear Foundation• Exeter Academy• Hearing Dogs• Hearing Link• National Association of Deafened People• National Cochlear Implant Users Group• Royal Association for Deaf People• SENSE• SignHealth• SONUS• Signature• UK Council On Deafness (UKCOD) <p>Ten million people across the UK have hearing loss – that’s one in six of the population¹. Hearing loss has been shown to have major impacts on communication, health and quality of life, and can lead to isolation, depression and dementia as well as creating issues for the management of all other health conditions. From support services, cochlear implants and equipment to lipreading classes, counselling and hearing therapy, there are services available that would help all of these people, including six million of them who could benefit from hearing aids². However, there are massive unmet needs³ – on average people wait ten years to seek help</p>
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¹ Davis (1995) Hearing in Adults, London: Whurr; Action on Hearing Loss (2011) Hearing Matters, London: Action on Hearing Loss.

² Action on Hearing Loss (2011) Hearing Matters, London: Action on Hearing Loss.

³ Many other studies have found high levels of unrecognised hearing loss – see for example Ramdoo et al (2014) Opportunistic hearing screening in elderly inpatients, SAGE Open Medicine 2; Ramdoo, Singh, Tatla, London Northwest Healthcare (in publication).

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		<p>for their hearing loss, and of the six million who could benefit from hearing aids only two million people have them – meaning that four million people who could benefit from hearing aids do not have them⁴.</p> <p>Most hearing loss is age-related, with prevalence rising from 42% of over 50 year olds to 71% of over 70s. It affects people at a time when they are most at risk of many other health conditions, impacting on their ability to hear and communicate with friends, family and health professionals, and therefore on their ability to manage other health conditions, maintain active lives and live independently. With more of us living longer and with the strong link between ageing and hearing loss, the number of people with hearing loss is estimated to increase from 10 million to 14.5 million by 2031⁵. Given that far too few people seek help when they first notice symptoms and many wait for long periods, the number with unaddressed needs will also increase unless something is done. Despite recent reforms to make it easier for people to access services, for example by providing services in people's communities, and reforms that have ensured effective services are in place that can deal with increased numbers of patients, most people with hearing loss are still not seeking help. This is why the UK</p>
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⁴ Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, *Health Technology Assessment* 11(42); Action on Hearing Loss (2011) Hearing Matters, London: Action on Hearing Loss.

⁵ Davis (1995) Hearing in Adults, London: Whurr; Action on Hearing Loss (2011) Hearing Matters, London: Action on Hearing Loss.

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		<p>Government recently launched a cross-government strategy, the Action Plan on Hearing Loss⁶, which called for action across government to tackle this “major public health issue”. A recent government strategy in Northern Ireland, the Physical and Sensory Disability Strategy and Action Plan 2012-2015⁷, also aimed to improve service provision, and in Scotland the 2014 See Hear strategic framework for sensory impairments highlighted the need for early diagnosis and intervention for hearing loss, and stated that screening for sensory loss should be included in care pathways⁸.</p> <p>There is clear evidence, outlined in this response, showing that early intervention is needed to encourage people to seek help, that hearing aids work, and that they are acceptable and bring major benefits to people with hearing loss. It is therefore vital that hearing screening is introduced now, to ensure that people are encouraged to get the help they need from hearing aids as well as other support; are made aware of the impacts of hearing loss and the effectiveness of the interventions available; are able to communicate, manage and reduce the risk of other health conditions; and remain active, independent and healthy. A health technology</p>
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⁶ The Department of Health and NHS England (2015) The Action Plan on Hearing Loss. London: Department of Health and NHS England. Available from: <http://www.england.nhs.uk/2015/03/23/hearing-loss/>.

⁷ Department of Health, Social Services and Public Safety (2012) Physical and sensory disability strategy and action plan 2012-2015, Belfast: Department of Health, Social Services and Public Safety.

⁸ The Scottish Government (2014) See hear: a strategic framework for meeting the needs of people with a sensory impairment in Scotland, Edinburgh: Scottish Government.

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		assessment, which along with other evidence is largely missing from this review, has set out how screening meets the NSC's criteria ⁹ . In our response we set out how this and numerous other pieces of evidence fulfil the NSC's criteria.
Page 3	Summary	<p>This literature review was undertaken in December 2012, nearly three years ago. The review states that some additional papers were included, but the review was not re-run at this time. Therefore key pieces of recent evidence are missing.</p> <p>As a consequence, the review misses many significant pieces of evidence, particularly around the impact of screening and hearing aids and the link with dementia, which we detail throughout this response. Crucially, the review has also not taken into account the focus on earlier diagnosis and service improvements for hearing loss in recent national government strategies¹⁰, including the UK Government strategy released earlier this year, the Action Plan on Hearing Loss¹¹, which sets out the need for earlier identification and diagnosis of hearing</p>

⁹ Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, *Health Technology Assessment* 11(42).

¹⁰ See General section above - The Scottish Government (2014) See hear: a strategic framework for meeting the needs of people with a sensory impairment in Scotland, Edinburgh: Scottish Government; Department of Health, Social Services and Public Safety (2012) Physical and sensory disability strategy and action plan 2012-2015, Belfast: Department of Health, Social Services and Public Safety.

¹¹ The Department of Health and NHS England (2015) The Action Plan on Hearing Loss. London: Department of Health and NHS England. Available from: <http://www.england.nhs.uk/2015/03/23/hearing-loss/>.

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		<p>loss:</p> <p>“Early identification and intervention are key actions that should make a real difference in reducing risks and attaining better hearing health outcomes throughout life. It is particularly important in reducing the impact and cost of congenital hearing loss and of long term conditions such as adult onset progressive hearing loss”.</p> <p>The review also misses the impact of improvements to pathways and capacity, for example following the modernising of NHS hearing aids¹², and through the Any Qualified Provider policy in England, which a Monitor review¹³ found has led to flexible and innovative pathways. These changes mean the system is well positioned to deal with the increased numbers of people seeking help that would be expected from the introduction of screening.</p>
Page 5, section 2.2.	The condition, health impact	<p>This review has not included most of the evidence around the impacts of hearing loss, particularly on social isolation, depression and dementia (see also our response to sections 4.1 and 4.2 below for missed evidence on the benefits of hearing aids in reducing these impacts).</p>

¹² See for example Davis et al (2012) Diagnosing patients with age-related hearing loss and tinnitus: supporting GP clinical engagement through innovation and pathway redesign in audiology services, *International Journal of Otolaryngology*. Available from <http://dx.doi.org/10.1155/2012/290291>.

¹³ Monitor (2015) NHS adult hearing services in England: exploring how choice is working for patients, London: Monitor. Available from: <https://www.gov.uk/government/publications/nhs-adult-hearing-services-in-england-exploring-how-choice-is-working-for-patients>.

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		<p>The evidence is clear that hearing loss often leads to communication difficulties, hindering an individual's interaction with friends, family, and colleagues, which can lead to social isolation and loneliness¹⁴. Gopinath et al (2012) examined more than 800 older hearing impaired people over five years and found that older, hearing-impaired adults were “significantly more likely to experience emotional distress and reduced social engagement restrictions (self-perceived hearing handicap) directly due to their hearing impairment”¹⁵. From a study of 73 hearing-impaired subjects and 96 controls, Monzani et al concluded that “sensory impairment, with its associated disability, may discourage hearing-impaired individuals from exposing themselves to socially challenging situations, producing isolation that leads to depression, irritability, feelings of inferiority”¹⁶.</p>
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¹⁴ Herbst et al (1990) Implications of hearing impairment for elderly people in London and in Wales. *Acta Oto-laryngologica* 476, 209-214; Du Feu and Fergusson (2003) Sensory impairment and mental health. *Advances in psychiatric treatment*. 9, 95-103; Monzani et al (2008) Psychological profile and social behaviour of working adults with mild or moderate hearing loss. *Acta Otorhinolaryngologica Italica*. 28(2), 61-6; Barlow et al (2007) Living with late deafness: insight from between worlds. *International Journal of Audiology*. 46(8), 442-8; Héту et al (1993) The impact of acquired hearing loss on intimate relationships: implications for rehabilitation. *Audiology* 32(3), 363–81; Gopinath et al (2012) Hearing-impaired adults are at increased risk of experiencing emotional distress and social engagement restrictions five years later. *Age and Ageing* 41(5), 618–623; Echaliér (2010) In it together – the impact of hearing loss on personal relationships, London: Action on Hearing Loss. Available from: www.hearingloss.org.uk/~media/Documents/Policy%20research%20and%20influencing/Research/Previous%20research%20reports/2010/In%20it%20together/In%20it%20Together.ashx; National Council on the Aging (2000) The consequences of untreated hearing loss in older persons. *Head & Neck Nursing* 18(1), 12-6; Pronk et al (2011) Prospective effects of hearing status on loneliness and depression in older persons: identification of subgroups. *International Journal of Audiology* 50(12), 887-96.

¹⁵ Gopinath et al (2012) Hearing-impaired adults are at increased risk of experiencing emotional distress and social engagement restrictions five years later. *Age and Ageing* 41(5), 618–623.

¹⁶ Monzani et al (2008) Psychological profile and social behaviour of working adults with mild or moderate hearing loss. *Acta Otorhinolaryngologica Italica* 28(2), 61-6.

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		<p>As summarised in Arlinger’s review of the literature on the negative consequences of uncorrected hearing loss, unaddressed hearing loss “gives rise to disabilities of various kinds” and can “often lead to withdrawal from social activities... this, in turn, leads to reduced intellectual and cultural stimulation, and an increasingly passive and isolated social citizen”¹⁷.</p> <p>Extensive research shows that, if it is not addressed early and effectively, hearing loss can increase the risk of mental health problems¹⁸. Anxiety, paranoia and depression are particular risks; research has shown that the hard of hearing are over-represented among samples of patients suffering from paranoid psychoses in later life¹⁹ and older people with hearing loss are more than twice as likely to develop depression as their peers without hearing loss²⁰.</p> <p>A growing body of evidence has identified a strong</p>
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¹⁷ Arlinger (2003) Negative consequences of uncorrected hearing loss – a review. *International Journal of Audiology* 42(2), 17-20.

¹⁸ Eastwood et al (1985) Acquired hearing loss and psychiatric illness: an estimate of prevalence and co-morbidity in a geriatric setting. *British Journal of Psychiatry* 147, 552–556; Saito et al (2010) Hearing handicap predicts the development of depressive symptoms after three years in older community-dwelling Japanese. *Journal of the American Geriatrics Society* 58(1), 93-7; National Council on the Aging (2000) The consequences of untreated hearing loss in older persons. *Head & Neck Nursing* 18(1), 12-6; Cacciatore et al (1999) Quality of life determinants and hearing function in an elderly population: Osservatorio Geriatrico Campano Study Group. *Gerontology* 45, 323-323; Genther et al (2013) Association of hearing loss with hospitalization and burden of disease in older adults. *Journal of the American Medical Association* 309(22), 2322; Monzani et al (2008) Psychological profile and social behaviour of working adults with mild or moderate hearing loss. *Acta Otorhinolaryngologica Italica*. 28(2), 61-6.

¹⁹ Cooper (1976) Deafness and psychiatric illness. *British Journal of Psychiatry* 129, 216-226.

²⁰ Saito et al (2010) Hearing handicap predicts the development of depressive symptoms after three years in older community-dwelling Japanese. *Journal of the American Geriatrics Society* 58(1), 93-7.

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		<p>association between all levels of hearing loss and cognitive decline and dementia²¹. People with mild hearing loss are twice as likely to develop dementia as people without any hearing loss. The risk increases to three times for those with moderate hearing loss, and people with severe hearing loss are five times as likely to develop dementia²². Recent research found that hearing loss not only increases the risk of the onset of dementia, but also accelerates the rate of cognitive decline.²³</p> <p>Hearing loss has also been shown to have a negative impact on overall health. Studies have found hearing loss to be independently associated with increased</p>
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²¹ Lin et al (2011) Hearing loss and incident dementia. *Archives of Neurology* 68(2), 214-220; Lin et al (2013) Hearing loss and cognitive decline in older adults. *Internal Medicine* 173(4), 293-299; Lindenberger and Baltes (1994) Sensory functioning and intelligence in old age: a strong connection. *Psychology and Aging* 9, 339-355; Lindenberger and Baltes (1997) Intellectual functioning in old and very old age: cross-sectional results from the Berlin aging study. *Psychology and Aging* 12, 410-432; Uhlmann et al (1989) Relationship of hearing impairment to dementia and cognitive dysfunction in older adults. *Journal of the American Medical Association* 261, 1916-1919; Gurgel et al (2014) Relationship of hearing loss and dementia: a prospective, population-based study. *Otology & Neurotology* 35(5), 775-81; Cacciatore et al (1999) Quality of life determinants and hearing function in an elderly population: Osservatorio Geriatrico Campano Study Group. *Gerontology* 45, 323-323.

²² Lin et al (2011) Hearing loss and incident dementia. *Archives of Neurology* 68(2), 214-220; Lin et al (2013) Hearing loss and cognitive decline in older adults. *Internal Medicine* 173(4), 293-299.
293-299; Lindenberger and Baltes (1994) Sensory functioning and intelligence in old age: a strong connection. *Psychology and Aging* 9, 339-355; Lindenberger and Baltes (1997) Intellectual functioning in old and very old age: cross-sectional results from the Berlin aging study. *Psychology and Aging* 12, 410-432; Uhlmann et al (1989) Relationship of hearing impairment to dementia and cognitive dysfunction in older adults. *Journal of the American Medical Association* 261, 1916-1919; Gurgel et al (2014) Relationship of hearing loss and dementia: a prospective, population-based study. *Otology and Neurotology* 35(5), 775-81.

²³ Lin et al (2013) Hearing loss and cognitive decline in older adults. *Internal Medicine* 173(4), 293-299; Gurgel et al (2014) Relationship of hearing loss and dementia: a prospective, population-based study. *Otology & Neurotology* 35(5), 775-81.

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		health care use and burden of disease among older adults ²⁴ , more frequent falls ²⁵ , and an increased risk of mortality ²⁶ . There is also evidence to suggest that there are associations between hearing loss and diabetes ²⁷ , cardiovascular disease ²⁸ , stroke ²⁹ , Parkinsons ³⁰ and sight loss ³¹ . Communication issues between patients and health professionals, coupled with reduced participation and mental health issues, mean that hearing loss can cause problems for the diagnosis and management of any other health condition – and this is particularly a problem given the high prevalence of hearing loss in
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²⁴ Genter et al (2013) Association of hearing loss with hospitalization and burden of disease in older adults. *Journal of the American Medical Association* 309(22), 2322; The Ear Foundation (2014) The Real Cost of Adult Hearing Loss: Reducing its impact by increasing access to the latest hearing technologies. Nottingham: The Ear Foundation.

²⁵ Lin and Ferrucci (2012) Hearing loss and falls among older adults in the United States. *Archives of Internal Medicine* 172(4), 369-371; Viljanen et al (2009) Hearing as a predictor of falls and postural balance in older female twins. *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences* 64(2), 312-7.

²⁶ Appollonio et al (1996) Effects of sensory aids on the quality of life and mortality of elderly people: a multivariate analysis. *Age and Ageing* 25, 89-96; Karpia et al (2010) Associations between hearing impairment and mortality risk in older persons: the Blue Mountains Hearing Study. *Annals of Epidemiology* 20(6), 452-9.

²⁷ Kakarlapudi et al (2003) The effect of diabetes on sensorineural hearing loss. *Otology and Neurotology* 24(3), 382-386; Mitchell et al (2009) Relationship of Type 2 diabetes to the prevalence, incidence and progression of age-related hearing loss. *Diabetic Medicine* 26(5), 483-8; Chasens et al (2010) Reducing a barrier to diabetes education: identifying hearing loss in patients with diabetes. *Diabetes Education* 36(6), 956-64.

²⁸ Helzner et al (2011) Hearing sensitivity in older adults: associations with cardiovascular risk factors in the health, aging and body composition study. *Journal of the American Geriatric Society*, 59 (6), 972-9; Rosenhall et al (2006) Age-related hearing loss and blood pressure. *Noise Health*, 8 (31), 88-94.

²⁹ Formby et al (1987) Hearing loss among stroke patients. *Ear and Hearing* 8(6), 326-32; Gopinath et al (2009) Association between age-related hearing loss and stroke in an older population. *Stroke* 40(4), 1496–1498.

³⁰ Pisani et al (2015) An investigation of hearing impairment in de-novo Parkinson's disease patients: a preliminary study. *Parkinsonism & Related Disorders* Jun 9

³¹ Chia et al (2006) Association between vision and hearing impairments and their combined effects on quality of life. *Archives of Ophthalmology* 124(10), 1465-70.

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		<p>older people who are at a higher risk of developing many other health conditions³². As the national Government strategy, the Action Plan on Hearing Loss states, the challenge of tackling hearing loss is a “major public health issue”, particularly in relation to the growing numbers of older people with hearing loss, for whom hearing loss has a “disproportionate effect on their wider physical and mental health, independence and ability to work”. Hearing loss is “responsible for an enormous personal, social and economic impact throughout life”³³.</p> <p>As well as the health impacts outlined above, hearing loss has major impacts on employment. People with hearing loss are less likely to be employed compared with people without hearing loss³⁴, and many don’t fulfil their potential or retire early because of their hearing loss³⁵. The International Longevity Centre has estimated that in 2013, the UK economy lost £24.8 billion in potential economic output because people with hearing loss are unable to work³⁶. Because of the ageing population and people staying in work for longer, they</p>
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³² Action on Hearing Loss / DCAL (2013) *Joining up*, London: Action on Hearing Loss; McKee et al (2011) Perceptions of cardiovascular health in an underserved community of deaf adults using American Sign Language. *Disability and Health* 4(3), 192-197; National Council on the Aging (2000) The consequences of untreated hearing loss in older persons. *Head & Neck Nursing* 18(1), 12-6.

³³ The Department of Health and NHS England (2015) The Action Plan on Hearing Loss. London: Department of Health and NHS England. Available from: <http://www.england.nhs.uk/2015/03/23/hearing-loss/>.

³⁴ Office for National Statistics (ONS) (2015) Labour Force Survey January – March 2015, analysis cited in House of Commons debate 9 June 2015 c 1723W.

³⁵ Arrowsmith (2014) *Hidden disadvantage: why people with hearing loss are still losing out at work*. London: Action on Hearing Loss.

³⁶ International Longevity Centre (ILC) UK (2013) *Commission on hearing loss: final report*, London: ILC-UK.

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		estimate that this will increase to £38.6 billion lost per year by 2031 ³⁷ .
Page 6, section 2.3.	All the cost-effective primary prevention interventions should have been implemented as far as practicable	This section of the review does not take into account the fact that although some forms of hearing loss are preventable, research suggests that age-related hearing loss – the most prevalent form of hearing loss – cannot be prevented. Therefore no primary prevention interventions have been shown to reduce the prevalence of age-related hearing loss. It is clear from the focus in this review on over 50s that any screening programme would target older people, who make up the vast majority of people affected by hearing loss, and most of whom will have age-related hearing loss. This should therefore not be a reason why a screening programme should not be introduced.
Pages 6-9, section 3.1	There should be a simple, safe, precise and validated screening test	A number of screening tests and pieces of evidence are relevant here but are not included in this review. Missing tests include speech in noise tests ³⁸ , which can be undertaken online or over the phone, and an easy to use, low cost hand-held screener which uses pure tones to screen for sensorineural, conductive and mixed hearing losses at different frequencies and severities ³⁹ . Because it uses pure tones itself, the hand-held screener

³⁷ International Longevity Centre (ILC) UK (2013) Commission on hearing loss: final report, London: ILC-UK.

³⁸ Smits (2006) How we do it; the Dutch functional hearing-screening tests by telephone and internet. Dept of Otolaryngology/Audiology, EMGO Institute, VU University Medical Centre, Amsterdam; Watson (2012) Telephone screening tests for functionally impaired hearing: current use in seven countries and development of a US version. *Journal of the American Academy of Audiology* 23, 757-767.

³⁹ Parving et al (2008) Evaluation of a hearing screener, *Audiological Medicine* 6(2), 115-9.

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		<p>has been shown to have high negative and positive predictive values, and there was good correlation when its results were compared with full audiometric testing⁴⁰. It is non-invasive, safe and easy to use, it has been shown to be cost effective⁴¹, and it was successful and popular when it was piloted by GPs⁴². This test would be effective at predicting full audiometric testing and at predicting the benefit a patient would get from hearing aids, and it would therefore be effective in a screening programme.</p> <p>The conclusion of the health technology assessment, a major large scale study which found that the optimal cut off for screening was 35 dB HL, and that the most effective screening test was to ask two verified questions alongside pure tone audiometry, is also missing here⁴³. Since that time screening tools such as the handheld screener above have been developed, which like full audiometry uses pure tones to effectively screen for hearing loss. There is therefore good evidence that a</p>
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⁴⁰ Parving et al (2008) Evaluation of a hearing screener, *Audiological Medicine* 6(2), 115-9; Davis et al (2012) Diagnosing patients with age-related hearing loss and tinnitus: supporting GP clinical engagement through innovation and pathway redesign in audiology services, *International Journal of Otolaryngology*. Available from <http://dx.doi.org/10.1155/2012/290291>.

⁴¹ Action on Hearing Loss / London Economics (2010) Cost benefit analysis of hearing screening for older people. Available from: www.actiononhearingloss.org.uk/supporting-you/policy-research-and-influencing/research/our-research-reports/research-reports-2010.aspx.

⁴² Parving et al (2008) Evaluation of a hearing screener, *Audiological Medicine* 6(2), 115-9; Davis et al (2012) Diagnosing patients with age-related hearing loss and tinnitus: supporting GP clinical engagement through innovation and pathway redesign in audiology services, *International Journal of Otolaryngology*. Available from <http://dx.doi.org/10.1155/2012/290291>.

⁴³ Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, *Health Technology Assessment* 11(42).

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		simple, safe, precise and validated screening test is available, and is easy to use and low cost.
Page 10, section 3.3	The test should be acceptable to the population	There are studies on the acceptability of hearing screening, and there is little risk to the population of screening or hearing aid use. The health technology assessment showed that hearing screening is acceptable to the older population ⁴⁴ , and a systematic review has shown hearing aids are acceptable and used – studies showed that 80-90% of people continue to use their hearing aids ⁴⁵ . Page 12 of this review states that “[h]arms are unlikely to be greater than minimal because screening and confirmatory testing are non-invasive and treatment with hearing aids is not associated with significant harms”. This should therefore not be a reason why screening is not introduced.
Page 11, section 3.5	There should be an agreed policy on the further diagnostic investigation of individuals with a positive test result and on the choices available to those individuals	Evidence is missing here on current policy around the diagnosis and management of hearing loss, recent experience of changes to pathways and how these have dealt well with increased and variable numbers of patients and so would be appropriate for screen detected cases. Only around one in three people who could benefit from hearing aids currently has them, and evidence shows

⁴⁴ Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, *Health Technology Assessment* 11(42).

⁴⁵ Perez and Edmonds (2012) A systematic review of studies measuring and reporting hearing aid usage in older adults since 1999: a descriptive summary of measurement tools, *PLoS ONE* 7(3), e31831.

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		<p>that people wait on average ten years to seek help for their hearing loss⁴⁶. There is clearly extensive undiagnosed hearing loss and unmet need for hearing aids and other management. Furthermore, the current pathway from GP to hearing services (such as audiology) or to ENT and then on to other services works well. Research from the UK and elsewhere shows that GPs are seen as credible sources of information and their advice and support can motivate patients to manage their hearing loss⁴⁷, and the vast majority of people are satisfied with hearing services and the hearing aids they receive⁴⁸. Hearing screening would lead to increased numbers of patients seeking help and needing support from services. However, there is previous experience of individual hearing services responding to increased numbers of patients resulting from the modernising of hearing aids. In response to this, the way services were commissioned was reformed, so that they are now able to cope with increasing levels of patient numbers⁴⁹. In recent years, further reforms such as the introduction of any qualified provider (AQP) in adult hearing services in England have increased flexibility in provision, so commissioners pay only per patient and can respond</p>
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⁴⁶ Action on Hearing Loss (2011) *Hearing Matters*, London: Action on Hearing Loss; Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, *Health Technology Assessment* 11(42); See also: Ramdoo et al (2014) Opportunistic hearing screening in elderly inpatients, *SAGE Open Medicine* 2; Ramdoo, Singh, Tatla, London Northwest Healthcare (in publication).

⁴⁷ Gilliver and Hickson (2011) Medical practitioners' attitudes to hearing rehabilitation. *International Journal of Audiology* 50(12), 850-856.

⁴⁸ Eurotrak data (2012). Available from: http://www.anovum.com/publikationen/Anovum_EuroTrak_2012_UK_EuroTrak%202012.pdf

⁴⁹ Davis et al (2012) Diagnosing patients with age-related hearing loss and tinnitus: supporting GP clinical engagement through innovation and pathway redesign in audiology services, *International Journal of Otolaryngology*. Available from <http://dx.doi.org/10.1155/2012/290291>.

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		<p>quickly to changes in numbers of patients seen through flexibility in provision⁵⁰.</p> <p>Reforms to hearing services mean there are now effective and flexible pathways for people diagnosed with hearing loss, reducing the risk of increased patient numbers leading to a lack of capacity and increased waiting lists⁵¹. AQP means that services must provide a high quality service, and are paid a set tariff per patient, so increased numbers of patients are easily dealt with. Strict service standards and an effective pathway were developed and agreed between the Department of Health, hearing loss charities and providers. This includes referral criteria, clinical guidance and standards for the timing of follow up and how often tests should take place. It has been shown to work well and would respond well to cases detected through screening⁵².</p> <p>Across the whole the UK, including outside of AQP areas, some GPs and other health professionals do screen and check people's hearing, and refer positive cases to audiology or ENT. There are large variations in</p>
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⁵⁰ Monitor (2015) NHS adult hearing services in England: exploring how choice is working for patients, London: Monitor. Available from: <https://www.gov.uk/government/publications/nhs-adult-hearing-services-in-england-exploring-how-choice-is-working-for-patients>.

⁵¹ Monitor (2015) NHS adult hearing services in England: exploring how choice is working for patients, London: Monitor. Available from: <https://www.gov.uk/government/publications/nhs-adult-hearing-services-in-england-exploring-how-choice-is-working-for-patients>.

⁵² Department of Health (2012) Adult hearing AQP implementation pack, London: Department of Health; Monitor (2015) NHS adult hearing services in England: exploring how choice is working for patients, London: Monitor. Available from: <https://www.gov.uk/government/publications/nhs-adult-hearing-services-in-england-exploring-how-choice-is-working-for-patients>.

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		the numbers of audiological assessments between different areas ⁵³ , but those people seeking help have generally been dealt with well and waiting times have been kept low. Evidence from areas where increased numbers of people have sought help suggests that services are flexible enough to deal with increased numbers of people seeking help , and are appropriate to manage the further diagnostic investigation and management of screen detected cases of hearing loss.
Pages 11-15, sections 4.1 and 4.2	There should be an effective treatment or intervention for patients identified through early detection, with evidence of early treatment leading to better outcomes than late treatment; There should be agreed evidence-based policies covering which individuals should be offered treatment and the appropriate treatment to be offered.	<p>The 2007 health technology assessment showed the benefits of earlier diagnosis and fitting of hearing aids, and therefore the need for a screening programme to ensure people get the most from hearing aid fittings by getting these earlier - this is particularly important given that people wait on average ten years before they seek help for their hearing loss, and so only a minority of people who could benefit from hearing aids currently have them⁵⁴. This key evidence is missing here.</p> <p>The review of the evidence of the effectiveness of</p>

⁵³ Public Health England (2013) NHS Atlas of Variation in Diagnostic Services: reducing unwarranted variation to increase value and improve quality, London: Public Health England; The Department of Health and NHS England (2015) The Action Plan on Hearing Loss. London: Department of Health and NHS England. Available from: <http://www.england.nhs.uk/2015/03/23/hearing-loss/>.

⁵⁴ Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, *Health Technology Assessment* 11(42); **MacMahon (2013) The need for improved detection and management of adult-onset hearing loss in Australia, *International Journal of Otolaryngology*, Article ID 308509.**

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		hearing aids in this section (pages 13-15) is severely lacking. Key systematic reviews ⁵⁵ have been overlooked, and randomised controlled trials ⁵⁶ that have shown the benefits of hearing aids, alongside many robust studies which find health improvement benefits of hearing aids using quality of life outcome measures have not been included here, some of which cover long periods of time (up to 11 years) and some cover screening. These include: Swan et al 2012 ⁵⁷ ; Barton et al 2004 ⁵⁸ ; Appollonio et al 1996 ⁵⁹ ; Davis et al 2007 ⁶⁰ ; Mondelli and Souza 2012 ⁶¹ ; Lotfi et al. 2009 ⁶² ; McArdle et al 2005 ⁶³ ; Mizutari et al 2013 ⁶⁴ ; National Council on the Aging
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⁵⁵ Chisolm et al (2007) A systematic review of health-related quality of life and hearing aids: final report of the American Academy of Audiology task force on the health-related quality of life benefits of amplification in adults. *Journal of American Academy of Audiology* 18, 151-183; Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, *Health Technology Assessment* 11(42); Chao and Chen (2008) Cost-effectiveness of hearing aids in the hearing-impaired elderly: a probabilistic approach. *Otology and Neurotology* 29(6), 776-83.

⁵⁶ Mulrow et al (1990) Quality-of-life changes and hearing impairment, a randomized trial. *Annals of Internal Medicine* 113(3), 188-94; Yueh et al (2001) Randomized trial of amplification strategies. *Archives of Otolaryngology - Head and Neck Surgery* 127(10), 1197-204; Jerger et al (1996) Comparison of conventional amplification and an assistive listening device in elderly persons. *Ear and Hearing* 17(6), 490-504.

⁵⁷ Swan et al (2012) **Health-related quality of life before and after management in adults referred to otolaryngology: a prospective national study.** *Clinical Otolaryngology* 37(1), 35-43.

⁵⁸ Barton et al (2004) Comparing utility scores before and after hearing aid provision : results according to the EQ-5D, HUI3 and SF-6D. *Applied Health Economics and Health Policy* 3(2), 103-5.

⁵⁹ Appollonio et al (1996) Effects of sensory aids on the quality of life and mortality of elderly people: a multivariate analysis. *Age and Ageing* 25, 89-96.

⁶⁰ Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, *Health Technology Assessment* 11(42).

⁶¹ **Mondelli and Souza (2012) Quality of life in elderly adults before and after hearing aid fitting.** *Revista Brasileira de Otorrinolaringologia* 78(3), 49-56.

⁶² Lotfi et al (2009) Quality of life improvement in hearing-impaired elderly people after wearing a hearing aid. *Archives of Iranian Medicine* 12(4), 365-70.

⁶³ McArdle et al (2005) The WHO-DAS II: Measuring outcomes of hearing aid intervention for adults. *Trends in Amplification* 9(3), 127-43.

⁶⁴ **Mizutari et al (2013) Age-related hearing loss and the factors determining continued usage of hearing aids among elderly community-dwelling residents.** *PLoS One* 8(9), e73622.

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		<p>2000⁶⁵; Yueh et al 2010⁶⁶; Dawes et al 2015⁶⁷. Reviews of the literature have taken the large number of positive studies as proof that hearing aids provide significant benefits to communication, health, wellbeing and quality of life⁶⁸.</p> <p>This is on top of the evidence of other benefits from hearing aids – as detailed above, hearing loss is associated with an increased risk and increased impact of numerous other health conditions, and evidence not included in this review shows that hearing aids reduce the risk and impact of other health conditions – for example one study showed that hearing aids reduce the risk of isolation associated with hearing loss⁶⁹, evidence shows that hearing aids reduce the risk of depression⁷⁰,</p>
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⁶⁵ National Council on the Aging (2000) The consequences of untreated hearing loss in older persons. *Head & Neck Nursing* 18(1), 12-6.

⁶⁶ Yueh et al (2010) Long-term effectiveness of screening for hearing loss: the screening for auditory impairment--which hearing assessment test (SAI-WHAT) randomized trial. *Journal of the American Geriatrics Society*, 58(3), 427-34.

⁶⁷ Dawes et al (2015) Hearing-aid use and long-term health outcomes: hearing handicap, mental health, social engagement, cognitive function, physical health, and mortality, *International Journal of Audiology*, early online 1-7. Available from:

<http://informahealthcare.com/doi/abs/10.3109/14992027.2015.1059503?journalCode=ija>.

⁶⁸ Chao and Chen (2008) Cost-effectiveness of hearing aids in the hearing-impaired elderly: a probabilistic approach. *Otology and Neurotology* 29(6), 776-83.

⁶⁹ Pronk et al (2011) Prospective effects of hearing status on loneliness and depression in older persons: identification of subgroups. *International Journal of Audiology* 50(12), 887-96.

⁷⁰ Saito et al (2010) Hearing handicap predicts the development of depressive symptoms after three years in older community-dwelling Japanese. *Journal of the American Geriatrics Society* 58(1), 93-7; National Council on the Aging (2000) The consequences of untreated hearing loss in older persons. *Head & Neck Nursing* 18(1), 12-6; Mulrow et al (1990) Quality-of-life changes and hearing impairment, a randomized trial. *Annals of Internal Medicine* 113(3), 188-94; Mulrow et al (1992) Sustained benefits of hearing aids. *Journal of Speech & Hearing Research* 35(6), 1402-5; Acar et al (2011) Effects of hearing aids on cognitive functions and depressive signs in elderly people. *Archives of Gerontology and Geriatrics*, 52(3), 250-2; Goorabi et al (2008) Hearing aid effect on elderly depression in nursing home patients. *Asia Pacific Journal of Speech, Language and Hearing* 11(2), 119-123.

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		<p>and new evidence suggests that hearing aids may reduce the risk of developing dementia⁷¹. By enabling communication between patients and health professionals, and improving participation and mental health, hearing aids certainly improve the diagnosis and management of other health conditions⁷². Although it is not always recognised by commissioners, there is very good evidence that hearing aids are beneficial and cost effective – in particular at a very low cost they lead to major cost savings in terms of quality of life, employment and NHS and social care spend over the long term⁷³. Not providing hearing aids or restricting their provision is a false economy.</p> <p>Despite the quality and quantity of the evidence of the benefits of hearing aids, the review says that the evidence is limited. Since there are robust studies, including randomised controlled trials and systematic reviews, which show the clear benefits of hearing aids in terms of communication, mental health outcomes, quality of life, risk of and management of other health conditions, and general health, there is no reason why</p>
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⁷¹ Deal et al (2015) Hearing impairment and cognitive decline: a pilot study conducted within the atherosclerosis risk in communities neurocognitive study. *American Journal of Epidemiology*, 181 (9), 680-690; Lin et al (2011) Hearing loss and incident dementia. *Archives of Neurology*, 68 (2), 214-220; Lin et al (2013) Hearing loss and cognitive decline in older adults. *Internal Medicine*, 173 (4), 293-299.

⁷² Action on Hearing Loss / DCAL (2013) *Joining up*, London: Action on Hearing Loss; McKee et al (2011) Perceptions of cardiovascular health in an underserved community of deaf adults using American Sign Language. *Disability and Health* 4(3), 192-197; National Council on the Aging (2000) The consequences of untreated hearing loss in older persons. *Head & Neck Nursing* 18(1), 12-6.

⁷³ The Ear Foundation (2014) *The Real Cost of Adult Hearing Loss: Reducing its impact by increasing access to the latest hearing technologies*. Nottingham: The Ear Foundation.

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		more evidence in these areas is required. Evidence is already available that shows the benefits of hearing aids. Undertaking long term randomised controlled trials to test the benefits of an intervention in a population where it is already provided to everyone who wants it for free would be unnecessary and may be unethical. It would involve withholding hearing aids from people with hearing loss for long periods of time despite knowledge that they would derive significant benefits from those hearing aids.
Page 11, sections 4.1 and 4.2	There should be an effective treatment or intervention for patients identified through early detection, with evidence of early treatment leading to better outcomes than late treatment; There should be agreed evidence- based policies covering which individuals should be offered treatment and the appropriate treatment to be offered	Evidence is not included here of the benefits of other services for people who are unlikely to benefit from hearing aids and are not fit for surgery for cochlear implants – for example assistive equipment and support services, lipreading classes, hearing therapy, training and counselling ⁷⁴ . This is important as it shows that screening would be useful and provide a benefit for these groups of people as well.
Page 12, sections	There should be an effective treatment or intervention for patients identified through early	It is a common misconception that people who are provided with hearing aids do not use them. The

⁷⁴ See for example Hickson et al (2007) A randomized controlled trial evaluating the active communication education program for older people with hearing impairment, *Ear and Hearing* 28(2), 212-30; Barker et al (2014) Interventions to improve hearing aid use in adult auditory rehabilitation, *Cochrane Database of Systematic Reviews* 7, CD010342; Ringham (2013) Not just lip service, London: Action on Hearing Loss, available at: <http://www.actiononhearingloss.org.uk/notjustlipservice.aspx>; see also best practice guidance from the British Society of Audiology, available at: http://www.thebsa.org.uk/wp-content/uploads/2014/04/BSA_APD_Management_1Aug11_FINAL_amended17Oct11.pdf and http://www.thebsa.org.uk/wp-content/uploads/2014/04/BSA_PPC_Rehab_Final_30August2012.pdf, and guidance from the American Speech-Language-Hearing Association, available at: <http://www.asha.org/public/hearing/Hearing-Assistive-Technology>

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4.1 and 4.2	detection, with evidence of early treatment leading to better outcomes than late treatment; There should be agreed evidence- based policies covering which individuals should be offered treatment and the appropriate treatment to be offered	<p>evidence shows that most people do use and gain benefit from their hearing aids. More recent evidence from a systematic review and from two studies undertaken showing data from the UK shows that acceptance of hearing aids is higher than the figures quoted here. A systematic review showed that although studies used different time periods and measures, very high numbers of people continued to use and benefit from hearing aids, usually around 80-90%⁷⁵. A recent study of numbers across Europe, including in the UK, and a study undertaken into the introduction of AQP in England also showed that the vast majority of people wore and gained benefit from their hearing aids, and were satisfied with their hearing aids⁷⁶.</p> <p>Furthermore, with proper information and support, including self-management, levels of hearing aid use increase and people have improved ability to hear and communicate⁷⁷.</p>
Page 15-16, section 4.3	Clinical management of the condition and patient outcomes should be optimised in all healthcare providers prior to participation in	<p>See response to Summary and section 3.5 above. Clear published evidence shows that waiting times have improved, and this review misses the reforms to</p>

⁷⁵ Perez and Edmonds (2012) A systematic review of studies measuring and reporting hearing aid usage in older adults since 1999: a descriptive summary of measurement tools. *PLoS ONE* 7 (3), e31831.

⁷⁶ Monitor (2015) NHS adult hearing services in England: exploring how choice is working for patients, London: Monitor. Available from: <https://www.gov.uk/government/publications/nhs-adult-hearing-services-in-england-exploring-how-choice-is-working-for-patients>; Eurotrak data (2012). Available from: http://www.anovum.com/publikationen/Anovum_EuroTrak_2012_UK_EuroTrak%202012.pdf

⁷⁷ Leighton et al (2013) Evaluation of interactive video tutorials to educate first-time hearing aid users, *The European Journal of Public Health* 23 (1); Barker et al (2014) Interventions to improve hearing aid use in adult auditory rehabilitation, *Cochrane Database of Systematic Reviews* 7, CD010342.

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	a screening programme.	pathways following the introduction of AQP. The experience in some areas shows that the health system can deal with increased numbers of patients, and is already working well in encouraging patients to use, and gain benefit from, their hearing aids. Although improvements can always be made, the central needs of most people who seek help are being met by high quality hearing services and hearing aid provision. A systematic review showed that although studies used different time periods and measures, very high numbers of people continued to use and benefit from hearing aids, usually around 80-90% ⁷⁸ . A recent study of numbers across Europe, including in the UK, and a study undertaken into the introduction of AQP in England also showed that the vast majority of people wore and gained benefit from their hearing aids, and were satisfied with their hearing aids ⁷⁹ . Where the pathway is currently not working is at the start – many more people must be encouraged to seek help for their hearing loss in the first place, and the best and most cost effective way to do this would be to introduce a screening programme.
Pages 16-18, sections 5.1 and	There should be evidence from high quality Randomised Controlled Trials that the	This section does not take into account the extent of unmet need for the diagnosis and management of

⁷⁸ Perez and Edmonds (2012) A Systematic Review of Studies Measuring and Reporting Hearing Aid Usage in Older Adults since 1999: A Descriptive Summary of Measurement Tools. PLoS ONE 7 (3), e31831

⁷⁹ Monitor (2015) NHS adult hearing services in England: exploring how choice is working for patients, London: Monitor. Available from: <https://www.gov.uk/government/publications/nhs-adult-hearing-services-in-england-exploring-how-choice-is-working-for-patients>; Eurotrak data (2012). Available at: http://www.anovum.com/publikationen/Anovum_EuroTrak_2012_UK_EuroTrak%202012.pdf

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5.2.	screening programme is effective in reducing mortality or morbidity. Where screening is aimed solely at providing information to allow the person being screened to make an “informed choice” (eg. Down’s syndrome, cystic fibrosis carrier screening), there must be evidence from high- quality trials that the test accurately measures risk. The information that is provided about the test and its outcome must be of value and readily understood by the individual being screened; There should be evidence that the complete screening programme (test, diagnostic procedures,	hearing loss – on average people with hearing loss wait ten years to seek help, and only one in three people who need hearing aids currently has them ⁸⁰ . It is clear that for long periods of time, most people with hearing loss simply do not seek help from anyone, and it is unusual for them to be referred for diagnosis opportunistically by other health professionals. This section misses the significant findings of other randomised controlled trials such as Mulrow 1990 ⁸¹ and other studies and modelling of screening such as Davis et al 2007 ⁸² , Dawes et al 2015 ⁸³ and Morris et al 2013 ⁸⁴ . As discussed in our response to sections 4.1 and 4.2 above, this review does not include many of the systematic reviews ⁸⁵ , randomised controlled trials ⁸⁶ and
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⁸⁰ Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, *Health Technology Assessment* 11(42).

⁸¹ Mulrow et al (1990) Quality-of-life changes and hearing impairment, a randomized trial. *Annals of Internal Medicine* 113(3), 188-94.

⁸² Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, *Health Technology Assessment* 11(42).

⁸³ Dawes et al (2015) Hearing-aid use and long-term health outcomes: hearing handicap, mental health, social engagement, cognitive function, physical health, and mortality, *International Journal of Audiology*, early online 1-7. Available from: <http://informahealthcare.com/doi/abs/10.3109/14992027.2015.1059503?journalCode=ija>

⁸⁴ Morris et al (2013) An economic evaluation of screening 60- to 70-year-old adults for hearing loss. *Journal of Public Health* 35(1), 139 – 146.

⁸⁵ Chisolm et al (2007) A systematic review of health-related quality of life and hearing aids: final report of the American Academy of Audiology task force on the health-related quality of life benefits of amplification in adults. *Journal of American Academy of Audiology* 18, 151-183; Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, *Health Technology Assessment* 11(42); Chao and Chen (2008) Cost-effectiveness of hearing aids in the hearing-impaired elderly: a probabilistic approach. *Otology and Neurotology* 29(6), 776-83.

⁸⁶ Mulrow et al (1990) Quality-of-life changes and hearing impairment, a randomized trial. *Annals of Internal Medicine* 113(3), 188-94; Yueh et al (2001) Randomized trial of amplification strategies. *Archives of Otolaryngology - Head and Neck Surgery* 127(10): 1197-204; Jerger et al (1996) Comparison of conventional amplification and an assistive listening device in elderly persons. *Ear and Hearing* 17(6), 490-504.

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	<p>treatment/ intervention) is clinically, socially and ethically acceptable to health professionals and the public.</p>	<p>other studies⁸⁷ showing the benefits of hearing aids – further randomised controlled trials would be unnecessary and may be unethical.</p> <p>Hearing loss increases with age – with prevalence rising from 42% of over 50 year olds to 71% of over 70s⁸⁸. There is good evidence from a health technology assessment and economic cost modelling that screening people at the age of 65 would be the most cost effective⁸⁹.</p> <p>As stated above, there is no evidence of any risks from a screening test for hearing loss, and evidence shows it, along with the clinical pathway of diagnosis and</p>
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⁸⁷ Swan et al (2012) Health-related quality of life before and after management in adults referred to otolaryngology: a prospective national study. *Clinical Otolaryngology* 37(1), 35-43; Barton et al (2004) Comparing utility scores before and after hearing aid provision: results according to the EQ-5D, HUI3 and SF-6D. *Applied Health Economics and Health Policy* 3(2), 103-5; Appollonio et al (1996) Effects of sensory aids on the quality of life and mortality of elderly people: a multivariate analysis. *Age and Ageing* 25, 89-96; Mondelli and Souza (2012) Quality of life in elderly adults before and after hearing aid fitting. *Revista Brasileira de Otorrinolaringologia* 78(3), 49-56; Lotfi et al (2009) Quality of life improvement in hearing-impaired elderly people after wearing a hearing aid. *Archives of Iranian Medicine* 12(4), 365-70; McArdle et al (2005) The WHO-DAS II: Measuring outcomes of hearing aid intervention for adults. *Trends in Amplification* 9(3), 127-43; Mizutari et al (2013) Age-related hearing loss and the factors determining continued usage of hearing aids among elderly community-dwelling residents. *PLoS One* 8(9), e73622; National Council on the Aging (2000) The consequences of untreated hearing loss in older persons. *Head & Neck Nursing* 18(1), 12-6; Yueh et al (2010) Long-term effectiveness of screening for hearing loss: the screening for auditory impairment--which hearing assessment test (SAI-WHAT) randomized trial. *Journal of the American Geriatrics Society*, 58(3), 427-34; Dawes et al (2015) Hearing-aid use and long-term health outcomes: hearing handicap, mental health, social engagement, cognitive function, physical health, and mortality, *International Journal of Audiology*, early online 1-7. Available from: <http://informahealthcare.com/doi/abs/10.3109/14992027.2015.1059503?journalCode=ija>.

⁸⁸ Action on Hearing Loss (2011) *Hearing Matters*, London: Action on Hearing Loss; Davis (1995) *Hearing in Adults*, London: Whurr.

⁸⁹ Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, *Health Technology Assessment* 11(42); Morris et al (2013) An economic evaluation of screening 60- to 70-year-old adults for hearing loss. *Journal of Public Health* 35(1), 139 – 146; Action on Hearing Loss / London Economics (2010) Cost benefit analysis of hearing screening for older people. Available from: www.actiononhearingloss.org.uk/supporting-you/policy-research-and-influencing/research/our-research-reports/research-reports-2010.aspx.

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		management, are acceptable to people with hearing loss ⁹⁰ . Also as stated above, this review misses a number of screening tests and pieces of evidence. Missing tests include speech in noise tests ⁹¹ , which can be undertaken online or over the phone, and an easy to use, low cost hand-held screener which uses pure tones to screen for sensorineural, conductive and mixed hearing losses at different frequencies and severities ⁹² . Because it uses pure tones itself, the hand-held screener has been shown to have high negative and positive predictive values, and there was good correlation when its results were compared with full audiometric testing ⁹³ . It is safe and easy to use, and it was successful and popular when it was piloted by GPs ⁹⁴ . It is estimated that with bulk buying the hand-held screener would cost around £50 per unit, meaning that providing one to every
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⁹⁰ Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, *Health Technology Assessment* 11(42).

⁹¹ Smits (2006) How we do it; the Dutch functional hearing-screening tests by telephone and internet. Dept of Otolaryngology/Audiology, EMGO Institute, VU University Medical Centre, Amsterdam; Watson (2012) Telephone screening tests for functionally impaired hearing: current use in seven countries and development of a US version. *Journal of the American Academy of Audiology* 23, 757-767.

⁹² Parving et al (2008) Evaluation of a hearing screener, *Audiological Medicine* 6(2), 115-9.

⁹³ Parving et al (2008) Evaluation of a hearing screener, *Audiological Medicine* 6(2), 115-9; Davis et al (2012) Diagnosing patients with age-related hearing loss and tinnitus: supporting GP clinical engagement through innovation and pathway redesign in audiology services, *International Journal of Otolaryngology*. Available from <http://dx.doi.org/10.1155/2012/290291>.

⁹⁴ Parving et al (2008) Evaluation of a hearing screener, *Audiological Medicine* 6(2), 115-9; Davis et al (2012) Diagnosing patients with age-related hearing loss and tinnitus: supporting GP clinical engagement through innovation and pathway redesign in audiology services, *International Journal of Otolaryngology*. Available from <http://dx.doi.org/10.1155/2012/290291>.

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		<p>GP surgery across the UK would cost around £508,000⁹⁵. This screening test would be effective at predicting full audiometric testing and at predicting the benefit a patient would get from hearing aids, and it would therefore be effective in a screening programme.</p> <p>The conclusion of the health technology assessment, which found that the optimal cut off for screening was 35 dB HL, and that the most effective screening test was to ask two verified questions alongside pure tone audiometry, is also missing here⁹⁶. Since that time screening tools such as the handheld screener above have been developed, which like full audiometry uses pure tones to effectively screen for hearing loss. There is therefore good evidence that screening tests are available that work well, are acceptable, and given the current effective pathway for the diagnosis and management of hearing loss, introducing such a test would improve outcomes for many people with hearing loss.</p>
Page 19, section 5.6.	The opportunity cost of the screening programme (including testing, diagnosis and treatment, administration, training and	The hearing screening test using a hand-held screener is estimated to cost £13 per person, with full treatment around £100 ⁹⁷ . The NHS provides hearing aids and

⁹⁵ Action on Hearing Loss / London Economics (2010) Cost benefit analysis of hearing screening for older people. Available from: www.actiononhearingloss.org.uk/supporting-you/policy-research-and-influencing/research/our-research-reports/research-reports-2010.aspx.

⁹⁶ Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, *Health Technology Assessment* 11(42).

⁹⁷ Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, *Health Technology Assessment* 11(42).

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	quality assurance) should be economically balanced in relation to expenditure on medical care as a whole (i.e. value for money). Assessment against these criteria should have regard to evidence from cost benefit and/or cost effectiveness analyses and have regard to the effective use of available resource.	management of hearing loss at a fraction of the cost of private providers because of its bulk buying power, and (as detailed above) since the vast majority of people use and gain benefit from hearing aids once they are provided, a screening programme would be very cost effective. A detailed cost-benefit analysis, not taken into account here, has been undertaken by Action on Hearing Loss which estimates that a hearing screening programme at the age of 65 would cost £255 million over ten years but the benefits would amount to over £2 billion in that time, 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 ⁹⁸ . There is strong evidence that such a screening programme would be cost effective.
Page 20, section 5.7.	All other options for managing the condition should have been considered (e.g. improving treatment, providing other services), to ensure that no more cost- effective intervention could be introduced or current interventions increased within the resources available.	As stated above in response to Summary and sections 3.5 and 4.3, improvements to pathways, increased access and more flexibility to deal with increased numbers of patients have already been introduced across many areas of the UK. Despite this, most people who have hearing loss and could benefit from interventions such as hearing aids still do not seek help. As detailed in section 5.6 of this review and in our response to section 5.6 above, introducing hearing screening would be cost effective and would encourage

⁹⁸ Action on Hearing Loss / London Economics (2010) Cost benefit analysis of hearing screening for older people. Available from: www.actiononhearingloss.org.uk/supporting-you/policy-research-and-influencing/research/our-research-reports/research-reports-2010.aspx.

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		more people to seek help.
Page 20, sections 5.8, 5.9 and 5.10.	There should be a plan for managing and monitoring the screening programme and an agreed set of quality assurance standards; Adequate staffing and facilities for testing, diagnosis, treatment and programme management should be available prior to the commencement of the screening programme; Evidence-based information, explaining the consequences of testing, investigation and treatment, should be made available to potential participants to assist them in making an informed choice.	Quality standards and appropriate pathways are already in place that would be well suited to the introduction of a screening programme, along with flexible services that can respond well to increased numbers of patients, as stated above in our response to section 3.5. Services already provide information, support and advice to patients about the consequences of testing and the choices they can make, so this would continue under any screening programme.
Page 20, section 6.	Conclusions	There is clear evidence from a health technology assessment, randomised controlled trials and systematic reviews, and from recent changes to service delivery in the UK that is not taken into account throughout this review. This evidence, detailed throughout this response, fulfils the criteria listed in this conclusion. The age at which screening should take place has been investigated, with screening at 65 found to be the most cost effective and beneficial. The optimal cut off for screening is 35 dB HL and the most effective screening test is to ask two verified questions alongside pure tone audiometry. The long term benefits of hearing aids, including in improving quality of life, has been proven by numerous robust studies, detailed above, and evidence from the changes made to services in areas of the UK

2. HEARING LOSS & DEAFNESS ALLIANCE

		<p>show that effective and flexible diagnostic pathways have the potential to deal effectively with increasing numbers of patients seeking help.</p> <p>Although the frequency of screening is not mentioned in the rest of this review, it is mentioned in the conclusions section. Since hearing aids last around 3-5 years, and most people's hearing does deteriorate as they age, it is recommended that people are invited back for another hearing test every three years after the age of 65⁹⁹.</p> <p>There is clear evidence that early intervention improves outcomes for people with hearing loss and that hearing aids work, are acceptable to people with hearing loss and bring major benefits. As the national government strategy the Action Plan on Hearing Loss¹⁰⁰ has stated, unaddressed age-related hearing loss is a major public health issue which will cause increasing issues for people unless something is done. A hearing screening programme would encourage people to get the help they need from hearing aids and other support, ensure they are made aware of the impacts of hearing loss and the effectiveness of the interventions available, and ultimately will lead to thousands more people being able to communicate, manage and reduce the risk of other</p>
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⁹⁹ Department of Health (2012) Adult hearing AQP implementation pack, London: Department of Health; Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, *Health Technology Assessment* 11(42).

¹⁰⁰ The Department of Health and NHS England (2015) The Action Plan on Hearing Loss. London: Department of Health and NHS England. Available from: <http://www.england.nhs.uk/2015/03/23/hearing-loss/>.

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		health conditions, and remain active, independent and healthy.
Page 21, section 6.2.	Implications for research	<p>A large amount of evidence, detailed in our response, has not been included in this review. We believe this evidence is sufficient to fulfil the criteria and introduce screening for hearing loss in adults over 65 years. Governments across the UK have already made tackling hearing loss and improving its diagnosis a priority¹⁰¹, and Public Health England has committed to strengthen the evidence base on the diagnosis and management of hearing loss¹⁰². Following this consultation, if the National Screening Committee does not believe existing evidence justifies a change in policy, it must provide the reasons why and highlight specifically where it believes additional evidence is needed. This will allow Public Health England and the wider government to meet its commitments in the Action Plan on Hearing Loss by commissioning or securing any relevant research and ensuring that the growing challenge of hearing loss is met.</p>

¹⁰¹ The Department of Health and NHS England (2015) The Action Plan on Hearing Loss. London: Department of Health and NHS England. Available from: <http://www.england.nhs.uk/2015/03/23/hearing-loss/>; The Scottish Government (2014) See hear: a strategic framework for meeting the needs of people with a sensory impairment in Scotland, Edinburgh: Scottish Government; Department of Health, Social Services and Public Safety (2012) Physical and sensory disability strategy and action plan 2012-2015, Belfast: Department of Health, Social Services and Public Safety.

¹⁰² The Department of Health and NHS England (2015) The Action Plan on Hearing Loss. London: Department of Health and NHS England. Available from: <http://www.england.nhs.uk/2015/03/23/hearing-loss/>.

3. BRITISH ASSOCIATION OF AUDIOVESTIBULAR PHYSICIANS

Name:	British Association of Audiovestibular Physician	Email address:	xxxx xxxx
Organisation (if appropriate):			
Role:			
<p>Do you consent to your name being published on the UK NSC website alongside your response?</p> <p style="text-align: center;">Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>			
Section and / or page number	Text or issue to which comments relate	Comment	
		<i>Please use a new row for each comment and add extra rows as required.</i>	
Summary	Line 4 and last paragraph	Is it <35 dB or >35 dB?	
The Condition, 2.2	Definition	The WHO criteria is used in the document. Being a UK document, the BSA criteria should also appear in the documents. The author should perhaps give reasons for favouring one over the other.	
Section 2.2	Conductive hearing loss, line 2	Insert 'does' after 'mild to moderate, and..'	
	Conductive hearing loss, line 4	Suggest delete 'caused by infection'. Glue ear is not necessarily infective.	
	Types of hearing loss – Page 4, line 4	Sentence beginning: 'On an audiogram test..'. Suggest delete 'test for hearing problems'.	
	Types of hearing loss, Page 4, line 9	'exchange rate of 3 dB' should be deleted. Suggest ending the sentence as follows: 'Estimation of a "safe" duration is possible. As 3 dB represents	
	Ditto, last line of paragraph 1	'...then hearing impairment will occur'. Suggest replacing 'will' with 'may'. Exposure to noise levels 85 dB or more does not	

3. BRITISH ASSOCIATION OF AUDIOVESTIBULAR PHYSICIANS

		always result in hearing loss.
Section 4.2	Page 12	Define HHIE
	Page 12	British Society of Audiology instead of '...of Audiologists'

General Comments:

- *The pages of the document were not numbered*
- *We agree with the broad conclusions of the review:*
 - *There is not enough evidence to recommend routine screening due to challenges addressed fully in the review*
 - *The HTA recommendations of a prospective RCT study and development and trial of simple, low cost audiometric screen devices etc.*

4. INTERNATIONAL LONGEVITY CENTRE

International Longevity Centre response to Screening for Hearing Loss in Older Adults, external review against programme appraisal criteria for the UK National Screening Committee (UK NSC) - September 2015

1. Introduction and executive summary

- a. Hearing loss is a major public health issue in the UK, with an estimated 10 million people experiencing hearing loss today. Hearing loss is set to become an even bigger issue over the coming decade given the rising number and proportion of older people in the population. By 2031, it is expected that there will be 14.1 million people in the UK with hearing loss – accounting for nearly 20% of the total populationⁱ.
- b. Hearing loss can have significant implications for the individual with hearing loss, as well as for their family, with research showing that those with hearing loss are more likely to have communication difficulties, become socially isolated and have mental and physical health problems. There is also a growing body of research showing an association between hearing loss and dementia. These serious demographic challenges and the needs of a changing and ageing population cannot be ignored. It is vital that all bodies working in the sector should co-operate to get these issues the political and public attention they merit.
- c. The International Longevity Centre (ILC) Commission on Hearing Loss, with the support of Boots Hearingcare, gathered evidence on this hugely important subject and published its report in July 2014. The commissioners at the time comprised Baroness Sally Greengross as Chair; Paul Breckell, Chief Executive, Action on Hearing Loss; William Brassington, President of the British Academy of Audiology; Peter Ormerod, Boots Hearingcare; Baroness Howe of Idlicote; and Rosie Cooper, MP for West Lancashire.
- d. Reflecting the findings of the UK NSC, the ILC Commission report recognised that the impacts of hearing loss could be avoided if there were better screening services for those with hearing loss; greater assistance on prevention and aftercare support;

4. INTERNATIONAL LONGEVITY CENTRE

improved provision and take-up of hearing aids and a focus on awareness and information for patients.

2. Why are individuals with hearing loss not getting the support they need?

- a. Hearing loss has a slow onset and, partly for this reason, it takes on average 10 years before someone with hearing loss recognises that they have it and subsequently seeks support. There is a stigma associated with hearing loss which acts to prevent people from seeking help, with misperceptions about what hearing loss represents and about the nature of the interventions that are possible to support those with it.
- b. Currently, in order to have a hearing test from which an NHS hearing aid can be fitted, individuals must be first referred from their GP. Yet there is evidence which suggests that 45% of people who go to their GP to seek help for their hearing loss, do not get referred on. While the GP does refer over half of people with hearing loss, there is a fundamental question about whether the system should be opened up to ensure fewer barriers before having a hearing test.
- c. Having a hearing aid fitted is different from having a pair of glasses fitted. The audiogram – the test used as the basis for fitting the aid – is not perfect and can mean that individuals require further appointments to fine-tune the aid. Follow-up appointments and ongoing aftercare are critical to ensuring people get the most out of their hearing aids, but the knowledge and prevalence of aftercare is varied.

3. There is a need for a management strategy on hearing loss

- a. Despite the significant and growing numbers of people with hearing loss and the grave impacts that it can have on personal health and wellbeing, as well as the wider economy, the Government is yet to design and implement a strategy to integrate and improve screening services for people with hearing loss.
- b. Rather than considering the wider cost of hearing loss, including treatment for more serious conditions further down the line, there is a temptation for increasingly resource-constrained CCGs to focus on the relatively small immediate costs of providing hearing services, without considering the extensive longer-term

4. INTERNATIONAL LONGEVITY CENTRE

benefits – including their associated cost savings. As a counterpoint to this, based on a cost benefit analysis of a one-off screening programme for everyone aged 65, it is estimated that hearing screening would cost £255 million over 10 years, but the benefits across this period would amount to over £2 billion.¹⁰³

4. There is a lack of wider support for those with hearing loss

- a. There is an apparent lack of knowledge and support across society as a whole about hearing loss. This lack of knowledge pervades through many aspects of our daily lives including institutional settings such as GP surgeries, hospitals and care homes as well as other areas such as the entertainment sector and transport.
- b. The entire process of having a hearing aid fitted can be quite clinical and often takes place within hospital settings following referral by the GP. While hospitals undoubtedly have a role to play in supporting the needs of those with hearing loss, a community, person-centred approach to screening and fitting – emphasising the needs and experiences of the individual – would allow more weight to be put on the social impacts of hearing loss.

5. Recommendations

- a. There is an urgent need to detect hearing loss earlier. To support this aim there is a need for a national screening programme for adults and for hearing loss to be built into health check-ups for those likely to be at risk of hearing loss. There will need to be pilots of alternative models such as self-referral to see what works best.
- b. There should be enough flexibility in the way hearing screening is provided to ensure that it matches people's preferences. This may include an expansion of community-based hearing care services provided by the public, private and voluntary sectors, as well as home visits.
- c. Each person fitted with a hearing aid should receive a face-to-face follow-up appointment and ongoing aftercare where needed. These should also be provided

¹⁰³ <http://www.actiononhearingloss.org.uk/supporting-you/policy-research-and-influencing/research/our-research-reports/research-reports-2010.aspx>

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in accessible and convenient ways so that people are able to access help easily. Measures should also be taken to properly assess and quantify the impact of proper follow-up and aftercare.

- d. Strategic direction is needed now, given the possibility of some CCGs reducing their hearing services and the wider demographic challenge of population ageing and the need for more holistic and integrated hearing services. In this regard, quality standards should ensure high quality screening services are consistently provided and developed in consultation with patient groups, individuals and professionals representing all sectors.
- f. Uncorrected hearing loss is associated with other physical and mental health issues, so a failure to provide support early will result in greater overall costs to the NHS and to the local CCG as a consequence of more complex health issues developing.
- g. There is a clear need for a public information campaign on hearing loss as part of a wider long-term strategy to raise awareness amongst the general population about the support on offer in terms of screening and long term assistance.
- h. Training requirements for health and social care professionals must include specific points about the impacts of hearing loss on individuals and society as a whole, as well as recognising and screening hearing loss, referral to hearing services and the effective and mutually beneficial management of hearing loss.

Submitted by:

International Longevity Centre
11 Tufton Street
London SW1P 3QB

ⁱ Action on Hearing Loss (2011) ONS Population Projections: Principal Projection 2012 and author's calculations

5. NATIONAL COMMUNITY HEARING ASSOCIATION

Initial communication (preceding formal response using comments template):

Our actual response will be backed by evidence etc. but I do find the situation a little amusing from an academic point of view and awfully depressing for our ageing population.

A brief of the record, insight

Hearing screening would be nice, but there are indeed gaps in the evidence as the Spiby report highlights.

I read Spibt's review with some interest.

Hearing care itself is straightforward, but the mechanisms that lead to a "lack of evidence" are very complex –e.g.

- *licensing of medical devices is very different to licensing medicines, hence arguably we have less RCTs as result and correcting that is an international not local cost/benefit question (which is unlikely to change given the risk are low and current system promotes innovation)*
- *a similar challenge on cost-effectiveness because EQ5D is not sensitive to vision or hearing loss (NICE know this) and so the "effect" is difficult to measure on the instrument rather than there being no effect.... and on and on. So even if you do a RCT there are methodological challenges that need the kind of experts that seem not to be interested in hearing care*
- *status quo bias and the lack of root cause analysis – e.g. a hospital model of care could result in the distance decay effect, less people being aware of or accessing the intervention. We know care closer to home, especially when there is an unmet need, can boost access (and it has, Monitor the sector regulator acknowledges this in its 2015 report, also that choice and capacity can improve standards, lower prices etc.).*

Really is a fascinating sector to be part of – e.g. do you need a screening system if you have care closer to home? And what is then the incremental cost/benefit once you have started to improve access for the majority via commissioning services using evidence rather than sticking to models of care that make little sense... this public health challenge I suspect can be tackled easily by ensuring there is good access and promoting the service is supported (e.g. NHS England do so - <http://www.england.nhs.uk/resources/resources-for-ccgs/out-frwrk/dom-2/healthy-ageing/> but local commissioners don't like this service being promoted, the history (as your report states rightly) shows that the NHS has never taken hearing loss seriously, and as the Five Year Forward View states, it has not taken public and preventative health seriously either – the

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challenge for all of us is how do we change that culture... itself a public health intervention (getting NHS commissioners and providers to understand public health)..

One day we might go back to fundamentals. We will get there, but only through evidence-based thinking and testing – perhaps most importantly challenging each other and demanding greater transparency.

I suspect the UK NSC might be asked to screen for refractive error today if all opticians were based in hospitals.

Kind Regards and thanks again

*Harjit Sandhu
Director of Policy
National Community Hearing Association (NCHA)
199 Gloucester Terrace,
London, W2 6LD*

*Tel: +XXXX XXXX
<http://www.the-ncha.com/>*



5. NATIONAL COMMUNITY HEARING ASSOCIATION

FORMAL RESPONSE:

Name:	Harjit Sandhu		Email address:	xxxx xxxx
Organisation (if appropriate):	National Community Hearing Association			
Role:	Director of Policy			
Do you consent to your name being published on the UK NSC website alongside your response? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
Section and / or page number	Text or issue to which comments relate	Comment		
		<i>Please use a new row for each comment and add extra rows as required.</i>		
General		<p>With the ageing population and clearer links between hearing loss, loneliness, isolation and cognitive decline, hearing loss has become a major public health issue². It is in that context that we welcome the opportunity to comment on the UK National Screening Committee's (NSC) "<i>screening for hearing loss in older adults – an evidence review</i>".</p> <p>We accept the NSC's evidence-based decision not to recommend a screening programme at this stage.</p> <p>Our submission however recommends that specific sections of the NSC report be updated so that key stakeholders¹⁰⁴ better understand</p> <ul style="list-style-type: none"> • gaps in the evidence • the uncertainty associated with implementing a screening programme for older adults with hearing loss • why these pose significant barriers to meeting the criteria for national 		

¹⁰⁴ Including: policymakers, patient groups, health economists, public health experts, health care professionals and other researchers

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		<p>screening.</p> <p>Our main concern is that, without further clarity and evidence-based leadership (which the NSC is best placed to deliver), little meaningful progress will be made before the NSC reviews “screening for hearing loss in older adults” in three years’ time – i.e. the knowledge in the system will be no further advanced .</p> <p>A further major concern is that, in its current form, the NSC report might be misinterpreted or misrepresented by NHS commissioners as an indication of the low public health priority of hearing loss (especially age-related hearing loss) and that the public health challenges associated with age-related hearing loss might worsen. Our experience of CCGs’ understanding of public health and evidence has not so far been reassuring.</p> <p>For these reasons our feedback</p> <ul style="list-style-type: none">• highlights key publications since Dr Spiby’s comprehensive and well-researched report• suggests amendments that, in our view, would better inform the reader about hearing loss and why the case for a potential screening programme has not been made• discusses remaining methodological barriers• focusses on the growing public health challenge associated with age-related hearing loss and suggests that the NSC can send a signal to commissioners, policymakers and the hearing sector to utilise existing evidence to improve hearing care while evidence is gathered for a screening programme. <p>Whilst being disappointed by the outcome, we commend the NSC, and</p>
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		specifically Dr Spibly, for a balanced and evidence-based report. We hope the NSC will review this submission and implement our evidence-based feedback. We would be happy to answer any questions the NSC might have.
Section 2.2, Types of Hearing Loss page 3	<p>There are three main types of hearing loss:</p> <ul style="list-style-type: none"> • conductive hearing loss – where sounds are unable to pass, as they would normally, from the outer to inner ear. The hearing loss is typically mild to moderate, and not result in total deafness. This disorder is often medically treatable. It is often as the result of a blockage such as earwax, glue ear due to a build-up of fluid caused by an ear infection, a perforated ear drum or a disorder of the hearing bones, • sensori-neural hearing loss – the sensitive hair cells either inside the cochlea or the auditory nerve are damaged, either naturally through ageing, or as a result of injury, • mixed hearing loss – it is possible to get both types of hearing loss at the same time. <p>The most common cause of hearing loss in older adults is presbycusis or the progressive loss of the ability to hear high</p>	<p>Recommendation:</p> <p>We feel it would be prudent to add</p> <ol style="list-style-type: none"> 1. age-related hearing loss (presbycusis) is a non-medical condition that does not normally require medical intervention. Consequently the vast majority of older people with a hearing loss in the UK are referred directly to audiology³. For example conservative estimates show that about 90% of older people with hearing loss can be managed without medical review – i.e. by an audiologist⁴ 2. conductive hearing loss accounts for about 8% of hearing loss in older adults⁵ and sensorineural loss for about 90% of hearing loss 3. medical causes of hearing loss are readily detected with screening tools for onward referred if required⁶. <p>Rationale/Evidence:</p> <p><i>Researchers</i></p> <p>It is our view that researchers and those offering research grants, use reports by the NSC to design and fund further studies.</p> <p>Adding these details will allow researchers to access important information that will improve research design, be it RCTs or modelling exercises - e.g. health</p>

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	<p>frequencies with increasing age.</p>	<p>economists will be able to better model screening for hearing loss in older adults and ensure that findings are generalisable to the UK.</p> <p><i>Everyday Practice/Health Care Planning</i></p> <p>Key stakeholders often overestimate the number of people with hearing loss that require a medical investigation/ intervention. This creates barriers to addressing the growing public health challenge associated with age-related hearing loss. For example NHS commissioners that overestimate the medical causes of hearing loss are more likely to focus on a medical (ENT) model of care for age-related hearing loss. Action on hearing Loss (previously the RNID) has on several occasions made its view clear on this hospital model of care :</p> <ul style="list-style-type: none"> • <i>“hospital-based [is inappropriate for a technical procedure]. It is also inappropriate for a service that requires continuing patient support [...]. A locally-based service would be more convenient [for the elderly to access follow-up advice]. It is estimated that a lack of back-up support under the current system is responsible for as many as 20 per cent of patients not using their hearing aid after the first fitting”⁷</i> • <i>“The hospital care model is not appropriate for an ageing population – we are calling for a radical approach to redesign and de-medicalise hearing services to widen access and choice”⁸.</i> <p>The NSC report does not make the distinction between medical and non-medical causes of hearing loss clear. Screening for hearing loss in older adults will mainly result in the detection of age-related (non-medical) hearing loss – i.e. the vast majority of people identified in a screening programme would not need to see an ENT doctor, instead their diagnosis and treatment would be managed entirely by an audiologist in primary or secondary care.</p>
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		<p>Clearly stating that age-related hearing loss is a non-medical condition will encourage commissioners to explore community-based and non-medical models of care, which evidence shows can improve access, value for money and standards, whilst reducing the stigma associated with accessing hearing services⁹.</p> <p>It is also important to note that recent evidence shows since the NHS expanded community-based hearing services in 2012, providers have been able to tackle unmet hearing need at scale¹⁰ - i.e. if this trend is supported and allowed to continue, in the future hearing care might become normalised like sight care and, rather than a screening programme, the NHS might find it more cost-effective to develop hearing services as a 5th primary care service (NB. there is no evidence-based reason why a non-medical service should still be predominately delivered in hospital settings and greater cost per case to the NHS).</p>
Section 2.2, Types of Hearing Loss page 3	"The hearing loss associated with presbycusis is typically gradual, progressive and bilateral"	<p>Recommendation: We feel that the following should be made explicit</p> <ul style="list-style-type: none"> - age-related hearing loss is a long-term condition (and one of the most common long-term conditions in older people)¹¹ - in the vast majority of cases there is currently no medical or surgical treatment available for age-related hearing loss¹². <p>Rationale/Evidence:</p> <p>Again this will allow researchers to access important information that will</p>

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		improve research design, be it RCTs or modelling exercises.																																																															
Prevalence, p4.	Entire section.	<p>Recommendation:</p> <p>In our view this section should include more detail on UK specific prevalence. For example the table below would be useful</p> <table><tr><td></td><td colspan="3">Better Ear (dBHL)</td><td colspan="3">Worse Ear (dBHL)</td></tr><tr><td>Age</td><td>≥25</td><td>≥45</td><td>≥65</td><td>≥25</td><td>≥45</td><td>≥65</td></tr><tr><td>17-30</td><td>1.8</td><td>0.2</td><td><0.1</td><td>5.6</td><td>1.3</td><td><0.1</td></tr><tr><td>31-40</td><td>2.8</td><td>1.1</td><td>0.7</td><td>10.4</td><td>2.5</td><td>1.1</td></tr><tr><td>41-50</td><td>8.2</td><td>1.7</td><td>0.3</td><td>20.0</td><td>5.9</td><td>2.0</td></tr><tr><td>51-60</td><td>18.9</td><td>4.0</td><td>0.9</td><td>33.9</td><td>10.7</td><td>4.4</td></tr><tr><td>61-70</td><td>36.8</td><td>7.4</td><td>2.3</td><td>51.2</td><td>19</td><td>7.5</td></tr><tr><td>71-80</td><td>60.2</td><td>17.6</td><td>4.0</td><td>71.6</td><td>33.1</td><td>12.5</td></tr><tr><td>>80</td><td>93.4</td><td>63.6</td><td>22.3</td><td></td><td></td><td></td></tr></table> <p>Source/Detail: The prevalence (%) of hearing loss in better and worse ear for each age group (N=2662). dB hearing threshold level averaged over 0.5,1, 2, 4 kHz. Please note the original source includes confidence intervals and another dataset for hearing loss in worse ear¹³.</p> <p>Rationale/Evidence:</p> <p>We appreciate that there is some uncertainty associated with the prevalence of hearing loss – i.e. the literature shows that few countries have good quality studies that estimate the prevalence of hearing loss¹⁴. We also agree this is</p>		Better Ear (dBHL)			Worse Ear (dBHL)			Age	≥25	≥45	≥65	≥25	≥45	≥65	17-30	1.8	0.2	<0.1	5.6	1.3	<0.1	31-40	2.8	1.1	0.7	10.4	2.5	1.1	41-50	8.2	1.7	0.3	20.0	5.9	2.0	51-60	18.9	4.0	0.9	33.9	10.7	4.4	61-70	36.8	7.4	2.3	51.2	19	7.5	71-80	60.2	17.6	4.0	71.6	33.1	12.5	>80	93.4	63.6	22.3			
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		<p>confounded by the fact there is no agreed (standardised) way in which hearing loss is measured/classified.</p> <p>However, good quality data are available on the prevalence of hearing loss in the UK. Whilst the data from Davis¹⁵ is old (c.1980/90s) this does not make it obsolete – especially given age was the main driver of hearing loss in the 1980s, and remains so today¹⁶. Indeed the NSC’s report notes that the noise notch is obscured (i.e. drowned out) by age-related hearing loss with time (p.4), supporting the fact that age is a key driver of hearing loss.</p> <p>We would therefore like the NSC to consider whether Davis’s earlier work provides a more robust set of prevalence data than the 2007 HTA that has been used. In March 2015 the Department of Health and NHS England, in their Action Plan on Hearing Loss, tasked Public Health England with ensuring commissioners have access to the prevalence of hearing loss and need¹⁷. We see no evidence (nor likelihood) of any new research into the epidemiology of hearing loss. Therefore we feel that public documents, from bodies like the NSC, could help improve awareness of existing data by including a comprehensive set of prevalence data in this section.</p>
Page 4, Health Impact	<p>“....Using WHO terminology, hearing loss ranks third after depression and other unintentional injuries as a leading cause of years lived with disability (YLDs) in adults.”</p>	<p>Recommendation:</p> <p>Update this section. Recent research (modelling) has shown that adult hearing loss (mainly age-related hearing loss) is the</p> <ul style="list-style-type: none"> • 7th leading cause of YLDs in NI • 6th leading cause of YLDs in England • 5th leading cause of YLDs in Wales and Scotland • 6th leading cause in the UK¹⁸

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		<p>Rationale/Evidence:</p> <p>The estimate in the NSC report is likely to include developing countries and/or now be superseded (although a reference is not quoted making it difficult to validate). Given that the data quoted above were published on 8 June 2015 in the <i>Lancet</i>, we feel that updating this section would ensure the report captures current expert opinion¹⁹.</p>
Page 6, section 3	Formal audiometric testing is used to diagnose hearing loss. Due the combination of cost, time required and need for trained staff it is not appropriate for population screening purposes.	<p>Recommendation:</p> <p>We recommend that this wording is changed to</p> <ul style="list-style-type: none"> • <i>“Due the combination of cost, time required and need for trained staff it is unlikely to be appropriate for population screening purposes”.</i> <p>Rationale/Evidence:</p> <p>Whilst it might be the case that formal audiometric testing is not appropriate for population screening, a cost analysis has not been performed and we are therefore not confident that wording <i>“is not appropriate”</i> should be used – NB we would also challenge the generalisability and transferability of data from the US Preventative Services Task Force given the cost of health care in the USA far exceeds that in the UK. Hence, on balance, we feel the report should acknowledge that there is a degree of uncertainty associated with this statement.</p>
Page 10-14. Section 4.1 and 4.2	Sections 4.1 and 4.2.	<p>Recommendation:</p>

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		<p><i>General</i></p> <p>This section, in our view, needs to be updated as it includes some inaccuracies and is a little out-of-date – e.g. “<i>As a rule, analog HAs are less expensive than digital...</i>” is no longer true as the NHS gets digital aids at a lower unit price and analog aids have been phased out and are thus more costly to procure.</p> <p><i>Specific – compliance data</i></p> <p>We disagree with the range given (25-40%) for non-compliance and feel this should be updated to give a range of 5-40%, and a statement should be included to explain that there has been a general improvement in patients’ compliance with hearing aids wear in recent years, owing to better support and convenience for wearers.</p> <p>Rationale/Evidence:</p> <p>We accept</p> <ul style="list-style-type: none"> • that continued use of NHS hearing aids, especially in the past, has been poor • with no, or limited, follow-up and/or aftercare the effectiveness of NHS hearing aids is likely to be hampered. <p>However</p> <ul style="list-style-type: none"> • digital hearing aids (both NHS and private) in 2015 offer greater benefits than digital hearing aids in 2007 – including improved noise reduction and an increased choice of programmes for different listening conditions • when aftercare and follow-up care is provided, patients report being more satisfied with their hearing aids²⁰
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		<ul style="list-style-type: none"> • it is not clear why it is important that a person with age-related hearing loss should wear their hearing aid for a specified period of time in order for it to be classified as a benefit, any more that it is appropriate (meaningful) to assess the benefit somebody with low vision gets from using a distance magnifier or telescope only when they need it. <p>Many external stakeholders are unaware of the rate of innovation that has taken place in recent years and therefore when analysing peer-reviewed articles and other evidence do not exclude studies referring to a period when less sophisticated technology was in circulation.</p> <p>It is on this basis that we disagree with the non-compliance range being noted as “25 to 40%” (p.11). We draw the NSC’s attention to</p> <ul style="list-style-type: none"> • a review by Barker et al. that noted the range as 5 to 40%, with higher non-compliance relating to older studies²¹ • Banks et al. noting that 71% of over 75s in England used their hearing aids²² • Davis and Smith in 2013 noting compliance at 80%²³ • NCHA members reported compliance rates of >90% at 1 year in 2013/14 • in March 2015 Monitor, the sector regulator, confirmed that the vast majority of patients benefit from their hearing aids and those with follow-up care were more satisfied with their hearing aids²⁴. This being consistent with longstanding expert opinion that with follow-up care and support people are more likely to use their hearing aids and benefit from them²⁵. <p>Therefore compliance statistics from the early 2000s are no longer meaningful – NB. Salonen et al. also state that compliance rates are improving with time²⁶.</p> <p>We suggest that, as a minimum, the NSC should use the Barker et al. range of</p>
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		5 to 40% ²⁷ , or ideally our range of 5-30% for non-compliance, with the caveat that with time compliance rates have improved and 40% non-compliance is very unlikely with modern hearing aids and good follow-up care.
Page 15, Section 4.3.	<p>Audiology services are reported to have improved in terms of waiting times. However a study considered in criterion 3 suggested that the majority of services could be further improved especially in relation to the provision of on-going rehabilitation to support long term use of hearing aids. The present service is based on patients with hearing loss being referred by their GP to the audiological services. One study reported on mechanisms which could potentially improve referral pathways. This concluded that GPs remained an essential feature of referral mechanisms and suggested that further research is required.</p>	<p>Recommendation</p> <p>We would encourage the NSC to update this section so that policymakers are aware of positive progress made in recent years, and so that future reviews of screening older adults for hearing loss can be compared to the system currently in place.</p> <p>In particular we suggest that the Department of Health's 2012 policy intervention to improve NHS adult hearing care and Monitor's 2015 report on that policy should be documented here.</p> <p>Rationale/Evidence:</p> <p>We agree that many NHS hearing services could be improved and especially with respect to follow-up care and support.</p> <p>However we feel section 4.3 both</p> <ul style="list-style-type: none"> • underestimates the chronic nature of this challenge in the hospital sector – e.g. despite about 30 years of reports of lack of follow-up and aftercare, these services remain inadequate in many parts of the UK²⁸ and • overlooks improvements that have taken place in recent years where – specifically in 50% of CCG areas in England – choice of provider has been extended.

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		<p>Section 4.2 is therefore out-of-date and in our view should be updated with the following information.</p> <p>In 2012 the Department of Health, to address chronic challenges in the NHS adult hearing service, introduced greater choice for patients. The goals were as follows:</p> <ul style="list-style-type: none">• “Encourage early identification, diagnosis and management of hearing loss through improved patient and professional education” (link)• “drive up quality, empower patients and enable innovation to support the delivery of QIPP” (link)• “[be a] vehicle to improve access, address gaps and inequalities and improve quality of services where patients have identified variable quality in the past” (link). <p>In March 2015 Monitor the sector regulator in its evidence-based review of this initiative noted:</p> <ul style="list-style-type: none">• “..choice can make services more accessible for patients, leading to more people getting help. Taking steps to make choice work better for patients would benefit some of those millions of people with hearing loss who do not have hearing aids. In the longer term, this has the potential to reduce pressures on health and social services that can be attributed to unaddressed hearing loss. Improving access to hearing services may increase total spend on hearing loss, but we expect this to benefit patients” (link)
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		<ul style="list-style-type: none"> • <i>“The introduction of choice has also made services more transparent. In areas without choice, adult hearing services are often provided as part of a block contract without service outcome reporting requirements, so it can be difficult for commissioners to tell how good services are, or even how many people are being treated and at what cost” (link)</i> • <i>“We found that where choice has been introduced patients have benefited from improvements in some aspects of service quality. With a few exceptions, hospitals continue to offer adult hearing services, but now there are clinics on the high street, in GP practices and at other community locations. Faster treatment times are also on offer and appointment times may be more flexible. New options for people who may have found it difficult to access care have also emerged, such as providers that specialise in home visits or organisations setting up in areas where patients had previously had to travel long distances to reach the service. These aspects make services easier to access” and “We found that choice has prompted many providers to tailor their services to patients’ needs. Some providers offer drop-in services, an expanded range of hearing aids, and speciality clinics and support groups” (link).</i> <p>This provides clear evidence that the Department of Health’s 2012 initiative – largely to reduce the inertia and funding blocks in traditional NHS providers to improve quality, access and the responsiveness of services²⁹ – has been successful where implemented.</p> <p>In addition to this, the NCHA has published its members’ data to show that NHS follow-up care and aftercare is now more comprehensive than ever before³⁰ - as Best Practice Guidelines for community audiology demand³¹.</p>
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<p>Page 17, Section 5.5</p>	<p>The rationale for screening has been challenged recently by Grandori and colleagues from Italy who, at the 2012 International conference on Adult Hearing Screening, in a special lecture said that screening for hearing loss is “gaining increasing momentum” but that screening programmes should move from merely detecting hearing loss to comprehensive approaches to identifying disability due to hearing loss and tailored treatment approaches.⁴⁰ They said that primary research is needed to develop accurate and practical screening tools and to evaluate the effectiveness of screening methods for use in various healthcare settings.</p>	<p>General note:</p> <p>We appreciate that past advocates of universal hearing screening in older adults have updated their views.</p> <p>Closer to home, in England Davis and Smith in 2013 have also expressed a similar view to Grandori et al.</p> <p>However there are reasons to be optimistic about Davis and Smith 2013 recommendations:</p> <ul style="list-style-type: none"> • “universal screening may not be an option for hearing loss at present: too much unmet need and hearing aids might not yet be sufficiently acceptable to service users. Normalisation could help address this however” [NB, NCHA members have shown, via increased uptake of care, that care closer to home is normalising hearing loss, support for and acceptance of hearing aids³²] • that opportunistic screening might be beneficial - e.g. primary care, memory clinics and mental health services [NB, NICE guidelines recommend hearing tests for people living in care homes ³³] • 14% of people with hearing loss had diabetes and therefore screening for hearing loss during DR screening could result in 1/3 of diabetic patients benefiting from bilateral hearing aids [NB, as of yet we are not aware of
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		<p>any hearing screening alongside DR screening]</p> <ul style="list-style-type: none"> 28% of patients in their study had cataracts and 1 in 3 would ‘greatly’ benefit from hearing aids [NB, community-based providers are able to offer hearing tests to this patient group] <p>The NSC might wish to recommend research into specific groups so that the evidence base for screening can be improved at least for such groups.</p>
Page 18, Section 5.6	<p>Morris et al from Southampton⁴² used theoretical Markov models to estimate the incremental cost-effectiveness ratio (ICER) of potential screening programmes compared with current UK provision (GP-referral), from a NHS health service perspective. The work was based on the 2007 Health Technology Assessment Report by Davis et al.⁴⁴ Morris looked at alternative options through scenario analysis and probabilistic sensitivity analyses. All modelled screens were considered to be cost-effective and reduce unmet need for hearing aids. The most cost-effective option identified was a one-stage audiometric screen for bilateral hearing loss ≥ 30 dB hearing level (HL) at age 60, repeated at ages 65 and 70. This option has an ICER of £1461 compared to GP-referral and would mean an additional</p>	<p>General Note:</p> <p>We have no objections to the Morris et al. model. But it is important to note, given the introduction better value for money care pathways in parts of England³⁴, the model is likely to have overestimated NHS costs over a three year period – e.g. in 2015 Monitor found the improved pathway has resulted in</p> <ul style="list-style-type: none"> <i>“prices adopted by commissioners have been about 20% to 25% lower than the national non-mandated tariff. This can allow commissioners to treat more patients for the same spend and/or release additional funds that commissioners can spend on meeting other patients’ needs”³⁵.</i> <p>This is likely to mean, other things being equal, if the Morris et al. model was run again today the ICER would represent a more cost-effective intervention.</p> <p>Also, from a NHS perspective, given the option of a lower cost and inclusive three year inclusive package of care, in future econometric models using a three year time horizon are likely to yield a more applicable/useful ICER.</p>

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<p>15,437 adults benefiting from hearing intervention per 100 000 population aged over 60. The cost-effectiveness acceptability curve showed that screening is more cost-effective than GP-referral provided a Quality Adjusted Life Year is valued at £2000 or more.</p> <p>However, the model was based on the probability of continued use of hearing aids for 5 years after screening. They used a base case of continued use of 62% for screened cases and 80% for GP referral. The HTA study only followed hearing aid use for three months.⁴ In the questionnaire only group of the 307 invited in for treatment at three months 134 were using an aid and in the questionnaire and audiometry group of the 100 who failed 48 were aid users on follow up. The Cochrane review³³ found very few studies with a follow up of over one year.</p> <p>Morris suggests that if a worse case of 43% aid uptake was used it would not affect the modelling significantly.⁴² She also suggests that uptake could be higher using analogue aids and tailoring of interventions to individuals' communication needs. Morris recommends</p>	<p>The challenge however is that many providers are still delivering the old and more costly pathway and others do not have transparent prices or standards. NB, in 2015 Monitor also reported:</p> <ul style="list-style-type: none"> • <i>“The introduction of choice has also made services more transparent. In areas without choice, adult hearing services are often provided as part of a block contract without service outcome reporting requirements, so it can be difficult for commissioners to tell how good services are, or even how many people are being treated and at what cost”</i> (link). <p>Therefore, before the NHS can implement a national screening programme, all providers must deliver the best practice standards and prices – that are already in place in community-based contracts – so that the cost of a national screening programme is</p> <ol style="list-style-type: none"> a) feasible in the first instance and b) possible to model in an economic evaluation <p>Part of the challenge here is that work is still required to reduce the monolithic monopoly supply by traditional providers and to promote transparency in standards and prices, and to work towards quality at transparent prices/reimbursement models³⁶.</p> <p>If all providers were committed to this, or a similar model where tax-based financing is fixed, then future economic analysis on the effectiveness of a screening programme is likely to generate an ICER with less uncertainty.</p>
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	<p>further research to consider the cost benefits of more tailored communication rehabilitation which would be more costly and says that any screening programme, if introduced, should be evaluated to verify the assumptions made in her paper.</p>	
<p>Page 19, Section 5.7</p>	<p>5.7. All other options for managing the condition should have been considered (e.g. improving treatment, providing other services), to ensure that no more cost- effective intervention could be introduced or current interventions increased within the resources available.</p> <p>The Department of Health modernisation programmes and the British Society of Audiology's proposals has not been fully implemented and evaluated.</p>	<p>Recommendation:</p> <p>This section should be updated.</p> <p>In 2012 the Department of Health – under the Any Qualified Provider (AQP) initiative – extended the choice of audiology provider in many parts of England.</p> <p>Monitor, the NHS regulator, evaluated this policy and results were published in March 2015.</p> <p>In our view the 2012 policy and the 2015 research findings should be documented in this section because these demonstrate that increasing capacity in NHS adult hearing services (via choice reforms) through community-based services offers a more pragmatic, realistic and feasible way of addressing the public health challenge associated with age-related hearing loss when compared to waiting for evidence to support a national screening programme.</p> <p>Rationale/Evidence:</p>

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		<p>As noted above, the Department of Health in 2012 launched its AQP policy.</p> <p>About 50% of Clinical Commissioning Groups (CCGs) in England extended the choice of provider for adult hearing services.</p> <p>Cost-effectiveness analysis (CEA) is typically required when a new intervention is more costly and more effective than the current intervention, or is less costly and less effective than the current intervention.</p> <p>If a new intervention is more costly and less effective than the current intervention CEA is not required – i.e. there is no logical reason to select the new intervention.</p> <p>Likewise, when a new intervention is less costly and more effective, CEA is not required –i.e. there is no logical reason not to implement the new intervention. The new intervention is said to “dominate” the existing intervention.</p> <p>It is on this basis that section 5.7, in our view, needs to be updated so that during the next three years the NHS can strive to ensure that the 2012 Department of Health Best Practice model for adult hearing services (specification and prices), or an equivalent, is rolled out nationally.</p> <p>Evidence:</p> <ul style="list-style-type: none">• <i>“the introduction of choice has made services more transparent”</i> and that
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		<p><i>“the introduction of choice has strengthened the opportunity for [commissioners] to achieve better value for money. In areas with choice, commissioners have often put in place more robust or higher service specifications that raise expectations of providers. In some cases, commissioners have also established locally determined prices that are 20–25% lower than the national non-mandated tariff” (link).</i></p> <p>this is largely because</p> <ul style="list-style-type: none">• prior to 2012 there was no service specification or standards (other than waiting times in place) and reimbursement was based on activity or cost (available here)• 2012 saw the introduction of a package of care with clear standards and a fixed price for three years care – all at 10% less than the hospital-based tariff. In addition to this the new package demanded ongoing aftercare be included in the price (link)• This means that today, where the Department of Health’s 2012 Best Practice Guidance is implemented in full, the NHS can deliver adult hearing services for 20-25% less cost per patient at higher standards (link)• Put simply, today the NHS can choose to buy package B in the table below at 20-25% less than package A, and there is evidence to show that ongoing aftercare and support improves outcomes – thus we can be very confident that any CEA of package B will dominate package A. <table><tr><th>Package A (non-mandated tariff)</th><th>Package B (BPG package of care)</th></tr><tr><td>1. assessment</td><td>1. assessment</td></tr></table>	Package A (non-mandated tariff)	Package B (BPG package of care)	1. assessment	1. assessment
Package A (non-mandated tariff)	Package B (BPG package of care)					
1. assessment	1. assessment					

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		<ul style="list-style-type: none"> 2. fit 3. device(s) 4. one follow-up 5. 18 week RTT waiting times 	<ul style="list-style-type: none"> 2. fit 3. device(s) 4. 16 working day assessment, fitting within 20 working days of assessment 5. individual management plan (IMP) 6. follow-ups (person centred) 7. on-going aftercare and equipment maintenance for three years (e.g. tips, domes, wax filters and tube replacement service). Aftercare accessible within two working days of requesting it (person centred) 8. three year review 9. data collection (outcomes measured using GHABP, COSI or IOI-HA tools) 10. targets and penalties 11. continuous quality improvement (e.g. CQUIN) batteries included for free - postage etc. <i>not</i> charged for
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<p>Page 19, Section 5.9 and 6.0</p>	<p>5.9. Adequate staffing and facilities for testing, diagnosis, treatment and programme management should be available prior to the commencement of the screening programme. This would be required in advance of the implementation of a screening programme.</p> <p>6. Conclusions Hearing loss is a serious public health issue. However, the following areas are uncertain: Capacity of audiological service to meet potential screening programme increased demand.</p>	<p>Recommendation:</p> <p>Update section, acknowledging</p> <ul style="list-style-type: none"> • that there is insufficient capacity (estate and staff) in hospitals to meet unmet hearing need • there is sufficient capacity (estate and staff) in the community to meet the hearing needs of the ageing population <p>i.e. capacity of audiology service to meet the potential demand from a screening programme is not uncertain.</p> <p>Instead, the uncertainty rests with policymakers and whether there is a will to ensure that access and follow-up improves and thus reduces NHS cost per case and improves quality – as research from Monitor has shown is possible (see above).</p> <p>Rationale/Evidence:</p> <p>We agree that hearing loss is a serious public health issue (p.19, section 6).</p> <p>However the ability of traditional providers to meet increased demand from a screening programme is not uncertain. It is clear that hospitals have insufficient capacity to deal with the growing demand for hearing services from the ageing population and during the last 10 years a solely hospital-base model of care for adult hearing services has become</p>
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		<p>unsustainable. During this time activity reported by audiology services in England alone has increased by 142%³⁷; and this is despite an estimated 3.8 million people in England still having unmet hearing needs in 2013³⁸.</p> <p>Today, we have good reason to believe that many hospitals are at capacity and have strong incentives to control waiting times for assessments and sacrifice follow-up care and aftercare, with a knock-on effect on the quality of care and patient outcomes³⁹.</p> <p>It is also important to note that</p> <ul style="list-style-type: none">• the audiology estate in primary care settings across the UK is vast (>N=1000 locations) and these locations are served by HCPC registered hearing aid dispensers (N=2000) – who on average fit 250,000 hearing aids per year. Providers range from independents to national chains.• this compares with c.135 hospitals and 2,000 hospital audiologists who on average fit over 650,000 hearing aids per year. <p>Put simply, while hospitals are at capacity, there is excess capacity in primary care settings, and a screening programme could not be implemented without community estate and HCPC registrants being utilised by the NHS.</p> <p>At the present time private patients can access care from HCPC registered hearing aid dispensers, out-of-hospital and without GP referral.</p>
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		<p>NHS patients can only access HCPC registered hearing aid dispensers if local commissioners have been proactive and opened up access and choice, and if a GP has referred them.</p> <p>This represents an inequality in access for older people with hearing loss who cannot afford to pay to access care close to home, or whose local commissioner has not extended choice, or whose GP has decided not to refer them for NHS care.</p> <p>This current situation also represents underutilisation of qualified professionals and primary/community care capacity by the NHS, and over utilisation of hospital capacity (giving greater pricing/market power to the latter at greater cost per case).</p> <p>If the NHS were to make use of the whole community estate, as it does with eye care and pharmacy for example, the additional capacity – as the Department of Health’s 2012 AQP has shown – would drive better access and value for money⁴⁰.</p> <p>In summary, in our view the ability of audiology services to deal with increased demand is not uncertain, rather</p> <ul style="list-style-type: none"> • hospitals could not cope with increased demand from a screening programme without significant investment in community estate – and there is no evidence, given the financial pressures hospitals are under, of this happening (in much the same way it has not happened over the last 30 years despite lobbying from patient groups)⁴¹ • community-based providers (of all sizes) could meet this unmet need
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		<p>but this would require a coordinated effort by policymakers and lead commissioners (e.g. NHS England in England) to implement evidence-based policy and care pathways – i.e. by implementing Monitor’s 2015 findings.</p> <p>In this regard, there is a risk that the call for a national screening programme is a workaround, because a key reason for the scale of unmet hearing need in the UK is the complex and often inefficient way in which care is structured (this is discussed below).`1</p>
<p>Pages 19-20, Section 6.2 and recommendation, p 1.</p>	<p>p.1 “Screening for hearing loss in older people is not supported by the evidence published since 2009. Further research in the UK is required in the above areas before screening can be recommended in the UK. It has been suggested that a large scale Randomised controlled Trial (RCT) of screening for hearing impairment <35 dB should be undertaken within the 55 – 74 age group. This may provide the point of departure for further discussion of research priorities.”</p>	<p>Recommendation:</p> <p>It would be helpful if the NSC could provide more details on how a RCT might be carried out, including how the following issues should be addressed</p> <ul style="list-style-type: none"> • the ethics of a RCT given hearing aids are the primary intervention for people with hearing loss • how likely it is that a RCT would deliver the level of evidence the NSC requires given hearing aids are a medical device and RCTs on medical devices are particularly difficult <p>For these and other reasons, we raise the risk that calling for an RCT is equivalent to ensuring that in three, six and nine years when the UK NSC reviews this again the conclusion will be the same.</p> <p>This is problematic because the sector – e.g. patient groups – might</p>

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		<p>focus on lobbying for a national screening programme with a low probability of success rather than promoting choice and competition and thus helping the NHS do more for less. Here, it is important to note that the average NHS hearing aid user is aged 70 and over (c75). If the public health challenge is left unaddressed by 3, 6 or even 9 years this will have serious consequences for older people, the Government and the NHS's goal of helping people age well.</p> <p>Rationale/Evidence</p> <p>Whilst we appreciate that RCTs remain the gold standard, over reliance on an RCT might bias towards medical rather than non-medical interventions – because it is more difficult to perform an RCT on medical devices⁴².</p> <p>This is rarely acknowledged in reviews, but unless evidence-based organisations like the NSC consider these complex methodological and philosophical issues, calls for a RCT are likely to translate into (de facto) infinite delays as key stakeholders focus on chasing a national screening programme rather than on improving access and value for money. This in turn will mean that society is likely to fail to address the growing public health challenge that age-related hearing loss has become.</p> <p>Medical devices, like hearing aids, by their nature – e.g. software updates, more frequent model upgrades, customised fitting etc. – make</p>
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		<p>them difficult to analyse using a RCT. For example, unlike medicines there is a learning curve associated with devices, user characteristics might have greater impact on outcomes and if the device has multiple channels (like a hearing aid), running an RCT and controlling for all these variables can all become a significant challenge⁴³.</p> <p>Moreover, it has been noted that once a medical device – as hearing aids are – becomes the normal ‘treatment’ it can be a challenge to obtain ethics approval for a RCT⁴⁴.</p> <p>In addition to these practical barriers and methodological challenges, there are also macroeconomic (global) policies that reduce the likelihood of a RCT being performed. Unlike for medicines, the regulatory process for medical devices (hearing aids) creates weak incentives to perform costly RCTs⁴⁵.</p> <p>There are also similar methodological challenges in measuring the “impact hearing loss has on quality of life” because the instruments designed to measure impact (e.g. EQ5D) are well known to be insensitive to hearing loss and thus are also insensitive to measuring the benefit of hearing aids⁴⁶.</p> <p>Given these and other challenges associated with performing an RCT to measure the effectiveness of a screening programme for older people with hearing loss, we hope that the NSC will review its recommendation and explore alternatives – i.e. recommendations that are deliverable, rather than a RCT. We would be happy to meet with the NSC to discuss such options in greater detail.</p>
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Additional, and closing comments.	General feedback	<p>The hospital model of care is unsustainable – we have provided evidence that in the last 10 years activity reported by audiology services in England has increased by 142%⁴⁷ and yet an estimated 3.8 million people having unmet hearing needs⁴⁸.</p> <p>Monitor’s review of adult hearing services makes clear the NHS can do more for less – i.e. in areas where community providers have entered NHS audiology provision, standards and access have improved and cost per patient has gone down⁴⁹. The likely driver of this is excess capacity which gives commissioners more purchasing power (it is this that Monitor’s 2015 report shows can happen in hearing care).</p> <p>Yet, many hospitals and commissioners in NI, Wales, Scotland and England resist change. This despite the fact that the NHS has finite resources and there is no evidence of more resources being allocated to NHS hearing care in any part of the UK.</p> <p>Unfortunately, the hearing sector remains caught up in inter-professional rivalries which benefit nobody, and especially not patients or taxpayers. It is also held back from truly innovative reform by ideology – e.g. that NHS hospitals are where people should practise audiology, or those on a voluntary register (RCCP) are somehow more suited to providing NHS care than those on a statutory register (HCPC).</p> <p>It is this complex mix of culture, poorly thought out economics and protectionism which means that, by 2015, hearing tests, unlike sight tests, have not been normalised.</p>
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		<p>It is noteworthy then that models of care are in part responsible for the scale of unmet hearing need in the UK.</p> <p>In many countries full optometric assessment (given the combination of cost, time required and need for trained staff) would also not be possible, but in the UK it is. The NSC is not being asked to review rolling out sight test in people aged 70 and over because the NHS has overlooked their needs.</p> <p>In fact because of the structure of eye care in the UK, the majority of older people are supported to age well through the provision of refractive correction, low vision aids and/or treatment for any eye condition.</p> <p>Whilst there is currently no treatment for age-related hearing loss, the current provision of services denies people with hearing loss the equivalent of spectacles/low vision aids – i.e. hearing aids.</p> <p>This is mainly driven by the fact the NHS implicitly and sometimes aggressively rations hearing care and can get away with doing so because of the the low priority status afforded hearing care in the NHS, which is well documented.</p> <p>This current system creates an inequity in access based on the type of sensory loss one has.</p> <p>For a sense of the scale of inefficiency between sight care and hospital-based and community-based hearing care</p>
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	<ul style="list-style-type: none">• hospitals in England report 1.1 million repairs a year at £26 each, despite volunteers being able to perform this function• this is c.£4 per patient more than a NHS eye test in primary care, even though the sight test is delivered by a qualified optometrist• perhaps more surprisingly, if all providers had to deliver the community-based package of care, then the repair costs removed from NHS audiology expenditure would be c. £60million every three years, equivalent to 155,000 additional older people receiving two hearing aids and care for three years (for context, it is estimated c. 450,000 adults are fitted with NHS hearing aids each year). <p>In part, the reason the NSC reviews introducing a hearing screening programme for older adults every three years reflects a failure by policymakers to tackle a societal norm that discriminates against older people with a hearing loss – e.g. older people are not empowered with sufficient knowledge under the NHS to make life choices about their hearing care as they are for their eyes and teeth.</p> <p>Hence, our ageing population, unnecessarily, remains ill-informed about hearing loss and thus exposed to the risks associated with unsupported hearing loss.</p> <p>In 2015, the challenge in adult hearing services, is not cost or capacity, but one of culture.</p> <p>As identified in the Five Year Forward View “<i>the sustainability of the NHS, and the economic prosperity of Britain all now depend on a</i></p>
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		<p><i>radical upgrade in prevention and public health. Twelve years ago, Derek Wanless' health review warned that unless the country took prevention seriously we would be faced with a sharply rising burden of avoidable illness. That warning has not been heeded - and the NHS is on the hook for the consequences⁵⁰.</i></p> <p>The NHS continues to fail to take hearing loss seriously because age-related hearing loss is a public health, not a medical, issue.</p> <p>We think, from an ethical and evidence-based perspective, the NSC is best placed to highlight the consequences of unsupported hearing loss, even if it cannot yet recommend a national screening programme.</p> <p>We hope the NSC can highlight the scale of the public health challenge in hearing care and send a clear message that those coming forward for support with their hearing loss must be better supported and the support should be in line with best practice standards and prices.</p> <p>The sector's persistence for a national screening programme might be warranted, but equally ensuring best practice service standards (and prices) are implemented and current demand led clinics are delivered are key to the feasibility of any future screening programme. There is also no reason that data from these services cannot be used to model the effectiveness of care pathways. However, in order for change to happen, the influence of bodies like the NSC is urgently required.</p>
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³ Swan, I.R.C. and Browning, G.G. 1994. A prospective evaluation of direct referral to audiology departments for hearing aids. *The Journal of Laryngology and Otology*, 108(2), pp. 120-124; Reeves, D.J. et al., 2000, *Community provision of hearing aids and related audiology services, Health technology assessment (Winchester, England)*, vol. 4, no. 4; Abdelkader, M. et al. 2003. Prospective evaluation of the value of direct referral hearing aid clinic in management of young patients with bilateral hearing loss. *Clinical Otolaryngology & Allied Sciences*, 29(3), pp. 206-209; Eley, K. A. and FitzGerald, J. E. 2010. Quality improvement in action: Direct general practitioner referrals to audiology for the provision of hearing aids: a single centre review. *Quality in Primary Care*, 18(3), pp. 201-206; BAA Guidelines for Referral to Audiology of Adults with Hearing Difficulty (2009). Available: www.baaudiology.org/about/publications/; Department of Health, 2012, Best Practice Guidance. Adult Hearing AQP Implementation Pack, London, Department of Health; BSHAA Guidance on Professional Practice for Hearing Aid Audiologists (2014). Available: www.bshaa.com;

⁴ Zapala, D. A. et al 2010. Safety of Audiology Direct Access for Medicare Patients Complaining in Impaired Hearing. *Journal of the American Academy of Audiology*, 21(6), pp. 365-379. Note: whilst this paper is written in the USA, the estimates of referralable conditions are taken from the international literature and therefore generalisable to the UK.

⁵ Cruickshanks KJ, Wiley TL, Tweed TS, et al. Prevalence of hearing loss in older adults in Beaver Dam, Wisconsin. The Epidemiology of Hearing Loss Study. *Am J Epidemiol*. 1998;148(9):879-886. Cited in U.S. Preventive Services Task Force.

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⁶ Swan, I.R.C. and Browning, G.G. 1994. A prospective evaluation of direct referral to audiology departments for hearing aids. *The Journal of Laryngology and Otology*, 108(2), pp. 120-124; Reeves, D.J. et al., 2000, *Community provision of hearing aids and related audiology services, Health technology assessment (Winchester, England)*, vol. 4, no. 4; Abdelkader, M. et al. 2003. Prospective evaluation of the value of direct referral hearing aid clinic in management of young patients with bilateral hearing loss. *Clinical Otolaryngology & Allied Sciences*, 29(3), pp. 206-209; Health Committee, House of Commons, 2007. *Audiology Services.* (HC 392, *Fifth Report of Session 2006-7*) – Report, together with formal minutes, oral and written evidence. London: The Stationary Office Limited; Eley, K. A. and FitzGerald, J. E. 2010. Quality improvement in action: Direct general practitioner referrals to audiology for the provision of hearing aids: a single centre review. *Quality in Primary Care*, 18(3), pp. 201-206;

⁷ RNID, 1999. *Waiting to Hear*. London p. 21;

⁸ Action on Hearing Loss, 2011. *Hearing Matters*. P.68

⁹ Monitor, 2015. NHS adult hearing services in England: exploring how choice is working for patients

¹⁰ Monitor, 2015. NHS adult hearing services in England: exploring how choice is working for patients

¹¹ NHS England and Department of Health, 2015, Action Plan on Hearing Loss <http://www.england.nhs.uk/wp-content/uploads/2015/03/act-plan-hearing-loss-upd.pdf> page 12

¹² Chisolm, T. et al. 2007. A Systematic Review of Health-Related Quality of Life and Hearing Aids: Final Report of the American Academy of Audiology Task Force on the Health-Related Quality of Life Benefits of Amplification in Adults. *Journal of the American Audiology*, 18(2), pp. 151-183; Barker, F. et al, 2014. Interventions to improve hearing aid use in adult auditory rehabilitation (Protocol). Cochrane Database of Systematic Reviews: Reviews 2014; Issue 7 and most recently see NHS England and Department of Health, 2015, Action Plan on Hearing Loss <http://www.england.nhs.uk/wp-content/uploads/2015/03/act-plan-hearing-loss-upd.pdf> page 12-13

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¹⁶ Gates, G. A., Mills, J. A. (2005) Presbycusis. *The Lancet*, 366, pp. 1111-20

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¹⁸ Vos, T et al (2015), Global, regional, and national incidence, prevalence, and years lived with disability for 301 acute and chronic diseases and injuries in 188 countries 1990-2013: a systematic analysis for the Global Burden of Disease Study 2013. *The Lancet*

¹⁹ Vos, T et al (2015), Global, regional, and national incidence, prevalence, and years lived with disability for 301 acute and chronic diseases and injuries in 188 countries 1990-2013: a systematic analysis for the Global Burden of Disease Study 2013. *The Lancet*

²⁰ Monitor (2015) NHS adult hearing services in England: exploring how choice is working for patients Page. 49

²¹ Barker, F. et al, 2014. Interventions to improve hearing aid use in adult auditory rehabilitation (Protocol). *Cochrane Database of Systematic Reviews*: Reviews 2014; Issue 7

²² Banks et al. (2006)

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²³ Davis and Smith (2013)

²⁴ Monitor (2015) NHS adult hearing services in England: exploring how choice is working for patients Page. 49

²⁵ Monitor, 2015. NHS adult hearing services in England: exploring how choice is working for patients. For an explanation of why follow-up care is critical. See footnote 25 page.15 and footnote 107 page. 31 for evidence that not all CCGs require follow-up appointments and what impact follow-up appointments have on people using hearing aids. Also see following sources which highlight the importance of follow-up care and why CCGs risk not meeting their duties (Section 26 Health and Social Care Act 2012) unless they ensure follow-up care and aftercare is provided: Johnson, J. et al., (1984). "A survey of National Health Service hearing aid services. An RNID Scientific and Technical Department Report". RNID, London; RNID, Age Concern and British Association of the Hard of Hearing (1986) Breaking the Sound Barrier; RNID (1988) "Hearing aids the case for change". London; RNID (1999) "Waiting to hear? A report on waiting times for hearing tests" RNID, London; Audit Commission, (2000). "Fully equipped: the provision of equipment to older or disabled people by the NHS and social services in England and Wales" Audit Commission, London; RNID (2001) "Audiology in crisis, still waiting to hear". RNID, London; Health Committee (2007) "Audiology Services, Fifth report of session 2006-07" London, HC; Department of Health, 2007. *Good Practice in Transforming Adult Hearing Services for Patients with Hearing Difficulty*. Leeds: Department of Health; Department of Health, 2007. *Improving Access to Audiology Services in England*. Leeds: Department of Health; Department of Health, 2007. Evidence Submission to Health Select Committee. pp.74-75 in Health Committee, House of Commons, 2007. *Audiology Services*. (HC 392, *Fifth Report of Session 2006-7*) – Report, together with formal minutes, oral and written evidence. London: The Stationary Office Limited; Health Committee, House of Commons, 2007. *Audiology Services*. (HC 392, *Fifth Report of Session 2006-7*) – Report, together with formal minutes, oral and written evidence. London: The Stationary Office Limited; Ross, L. 2008. Modernizing times: UK hearing-impaired consumers at the policy crossroads. *International Journal of Consumer Studies*, 32 (2), pp. 122-127; Matthews, L. (2011) "Seen but not heard: People with hearing loss are not receiving the support they need". London, RNID; Action on Hearing Loss (2011) "Hearing Matters, London; NCHA (2015) Care Closer to Home Dataset, NCHA, London; Lowe, C (2015) "Under Pressure: NHS Audiology Across the UK." London, Action on Hearing Loss.

²⁶ Salonen et al

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²⁷ Barker, F. et al, 2014. Interventions to improve hearing aid use in adult auditory rehabilitation (Protocol). Cochrane Database of Systematic Reviews: Reviews 2014; Issue 7

²⁸ Monitor, 2015. NHS adult hearing services in England: exploring how choice is working for patients. For an explanation of why follow-up care is critical. See footnote 25 page.15 and footnote 107 page. 31 for evidence that not all CCGs require follow-up appointments and what impact follow-up appointments have on people using hearing aids. Also see following sources which highlight the importance of follow-up care and why CCGs risk not meeting their duties (Section 26 Health and Social Care Act 2012) unless they ensure follow-up care and aftercare is provided: Johnson, J. et al., (1984). "A survey of National Health Service hearing aid services. An RNID Scientific and Technical Department Report". RNID, London; RNID, Age Concern and British Association of the Hard of Hearing (1986) *Breaking the Sound Barrier*; RNID (1988) "Hearing aids the case for change". London; RNID (1999) "Waiting to hear? A report on waiting times for hearing tests" RNID, London; Audit Commission, (2000). "Fully equipped: the provision of equipment to older or disabled people by the NHS and social services in England and Wales" Audit Commission, London; RNID (2001) "Audiology in crisis, still waiting to hear". RNID, London; Health Committee (2007) "Audiology Services, Fifth report of session 2006-07" London, HC; Department of Health, 2007. *Good Practice in Transforming Adult Hearing Services for Patients with Hearing Difficulty*. Leeds: Department of Health; Department of Health, 2007. *Improving Access to Audiology Services in England*. Leeds: Department of Health; Department of Health, 2007. Evidence Submission to Health Select Committee. pp.74-75 in Health Committee, House of Commons, 2007. *Audiology Services*. (HC 392, *Fifth Report of Session 2006-7*) – Report, together with formal minutes, oral and written evidence. London: The Stationary Office Limited; Health Committee, House of Commons, 2007. *Audiology Services*. (HC 392, *Fifth Report of Session 2006-7*) – Report, together with formal minutes, oral and written evidence. London: The Stationary Office Limited; Ross, L. 2008. Modernizing times: UK hearing-impaired consumers at the policy crossroads. *International Journal of Consumer Studies*, 32 (2), pp. 122-127; Matthews, L. (2011) "Seen but not heard: People with hearing loss are not receiving the support they need". London, RNID; Action on Hearing Loss (2011) "Hearing Matters, London; NCHA (2015) Care Closer to Home Dataset, NCHA, London; Lowe, C (2015) "Under Pressure: NHS Audiology Across the UK." London, Action on Hearing Loss.

²⁹ Department of Health, 2010. Extension of Any Qualified Provider, Impact Assessment https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/216136/dh_128461.pdf#page=9 accessed 12 August 2015

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³⁰ <http://www.the-ncha.com/data/> accessed 12 August

³¹ Department of Health, 2012, Best Practice Guidance, AQP Implementation Pack Adult Hearing Services

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³⁴ Department of Health, 2012, Best Practice Guidance, AQP Implementation Pack Adult Hearing Services; Monitor, 2015. NHS adult hearing services in England: exploring how choice is working for patients

³⁵ Monitor, 2015. NHS adult hearing services in England: exploring how choice is working for patients

³⁶ Note: this was the intended objective when in 2012. See: Department of Health, 2010. Extension of Any Qualified Provider, Impact Assessment https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/216136/dh_128461.pdf#page=9 accessed 12 August 2015; Department of Health, 2012, AQP Implementation Pack Adult Hearing Services and Monitor, 2015. NHS adult hearing services in England: exploring how choice is working for patients

³⁷ This includes reported activity for hearing assessments, fits, follow-ups and repairs rising from 1,098,196 (2002/2003) to 2,657,610 (2012/2013): Audiology Service Activity 2004-2013 (data source: Department of Health)

³⁸ Davis, A. and Smith, P., 2013. Adult Hearing Screening: Health Policy Issues – What Happens Next? *American Journal of Audiology*, 22(1), pp. 167-170.

³⁹ In 2007 the Health Select Committee inquiry into audiology showed hospital departments were struggling to meet demand. Since then activity has risen dramatically (graph 1, below). This despite HSCIC data showing that the number of audiologists has only

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increased from 1,710 to 1,963. Monitor in its recent review of adult hearing services found that only 60% of NHS patients were offered a follow-up appointment after a hearing aid fitting (despite this increasing patient satisfaction). Analysis of reference cost activity, staff data held by the HSCIC and a review of the recent history of NHS adult hearing services show hospitals are not well placed to manage the growth in demand from the ageing population. Leading audiologists have also acknowledged that many departments are under pressure. See: Department of Health, 2007. Evidence Submission to Health Select Committee. pp.74-75 in Health Committee, House of Commons, 2007. *Audiology Services*. (HC 392, *Fifth Report of Session 2006-7*) – Report, together with formal minutes, oral and written evidence. London: The Stationary Office Limited; Department of Health, 2007. *Improving Access to Audiology Services in England*. Leeds: Department of Health; Department of Health, 2009. *Hearing Services for Older People*. London: Department of Health; NHS Improvement, 2010. *Audiology Improvement Programme: Pushing the boundaries: Evidence to support the delivery of good practice in audiology*. Leicester: NHS Improvement; Hind et al. 2011. Prevalence of clinical referrals having hearing thresholds within normal limits. *International Journal of Audiology* 2011; 50: 708–716; Department of Health, 2012. *Any Qualified Provider Adult Hearing Services Implementation Packs*. London: Department of Health

⁴⁰ Monitor, 2015. NHS adult hearing services in England: exploring how choice is working for patients

⁴¹ RNID, 1988. *Hearing aids a case for change*. p. 5: RNID, 1999. *Waiting to Hear*. London p. 21; Action on Hearing Loss, 2011. *Hearing Matters*. P.68

⁴³ Sorenson et al. (2011)

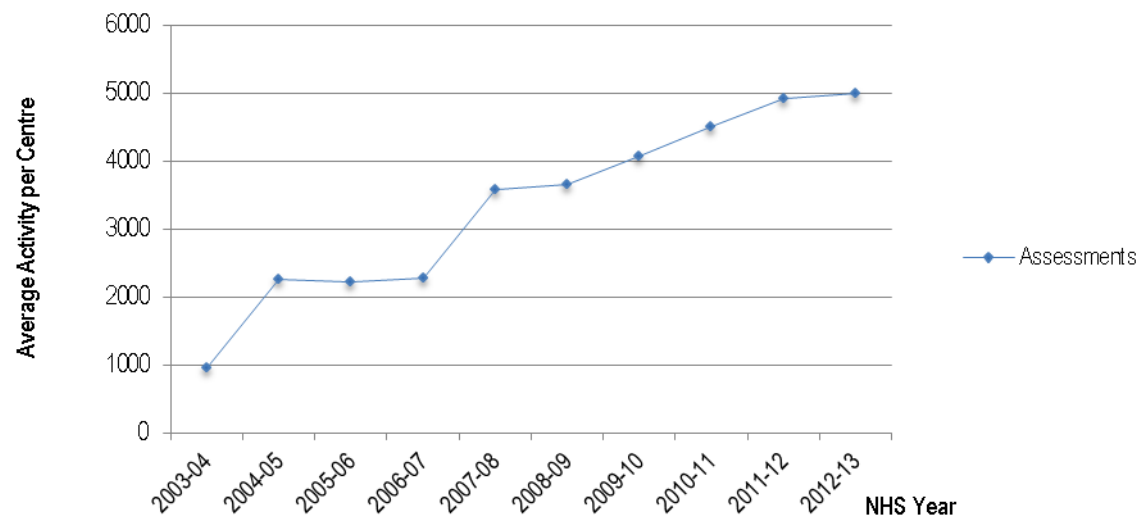
⁴⁴ Sorenson et al. (2011)

⁴⁵ Kirtistis and Redekop (2013) and Sorenson et al. (2011)

⁴⁶ Barton et al. (2005) and Longworth et al. (2014)

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⁴⁷ This includes reported activity for hearing assessments, fits, follow-ups and repairs rising from 1,098,196 (2002/2003) to 2,657,610 (2012/2013): Audiology Service Activity 2004-2013 (data source: Department of Health): see graph below, which shows how the average number of assessments per centre has risen since 2003-04



Graph 1: Average number of patient visits for a hearing assessment per audiology service provider⁴⁷.

⁴⁸ Davis, A. and Smith, P., 2013. Adult Hearing Screening: Health Policy Issues – What Happens Next? *American Journal of Audiology*, 22(1), pp. 167-170.

⁴⁹ Monitor, 2015. NHS adult hearing services in England: exploring how choice is working for patients

⁵⁰ NHS England, 2014. Five Year Forward View. NHS England, London. <http://www.england.nhs.uk/wp-content/uploads/2014/10/5yfv-web.pdf> Accessed 1 February 2015

6. INDEPENDENT AGE



6. INDEPENDENT AGE

Independent Age Hearing Consultation Response

Dear Adrian,

Independent Age are members of the Hearing Screening for Life coalition, a group of major charities. We are backing their call to introduce a hearing screening programme for everyone at the age of 65.

Like our fellow members, we are concerned at the wide ranging impact that hearing loss can have across all areas of someone's life and on society as a whole.

Ten million people across the UK have hearing loss – that's one in six of the population. Hearing loss has been shown to have major impacts on communication, health and quality of life, and can lead to isolation, depression and dementia as well as creating issues for the management of all other health conditions.

From support services, cochlear implants and equipment to lip-reading classes, counselling and hearing therapy, there are services available that would help all of these people, including six million of them who could benefit from hearing aids.

However, there are massive unmet needs – on average people wait ten years to seek help for their hearing loss, and of the six million who could benefit from hearing aids only two million people have them – meaning that four million people who could benefit from hearing aids do not have them.

Most hearing loss is age-related, with prevalence rising from 42% of over 50 year olds to 71% of over 70s. It affects people at a time when they are most at risk of many other health conditions, impacting on their ability to hear and communicate with friends, family and health professionals, and therefore on their ability to manage other health conditions, maintain active lives and live independently. Because of the ageing population, the number of people with hearing loss is estimated to increase from 10 million to 14.5 million by 2031. Given that far too few people seek help when they first notice symptoms and many wait for long periods, the number with unaddressed needs will also increase unless something is done.

In conclusion, we believe a hearing screening programme would encourage people aged 65 to get the help they need from hearing aids and other support, ensure they are made aware of the impacts of hearing loss and the effectiveness of the interventions available, and ultimately will lead to thousands more people being able to communicate, manage and reduce the risk of other health conditions, and remain active, independent and healthy.

Many thanks for giving us the opportunity to comment on hearing loss screening.

Regards,
Andy

Andrew Kaye
Head of Policy and Campaigns

7. ACTION ON HEARING LOSS

UK National Screening Committee Screening for Hearing Loss in Adults - an evidence review

Consultation comments pro-forma

Name:	Chris Wood	Email address:	xxxx xxxx
Organisation (if appropriate):	Action on Hearing Loss		
Role:	Senior Research and Policy Officer		
<p>Do you consent to your name being published on the UK NSC website alongside your response?</p> <p style="text-align: center;">Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>			
Section and / or page number	Text or issue to which comments relate	Comment	
		<i>Please use a new row for each comment and add extra rows as required.</i>	
General	General	<p>Action on Hearing Loss is the charity formerly known as RNID. Our vision is of a world where deafness, hearing loss and tinnitus do not limit or label people and where people value and look after their hearing. We help people confronting deafness, tinnitus and hearing loss to live the life they choose. We enable them to take control of their lives and remove the barriers in their way. We give people support and care; develop technology and treatments and campaign for equality.</p>	

7. ACTION ON HEARING LOSS

		<p>Ten million people across the UK have hearing loss – that’s one in six of the population¹⁰⁵. Hearing loss has been shown to have major impacts on communication, health and quality of life, and can lead to isolation, depression and dementia as well as creating issues for the management of all other health conditions. From support services, cochlear implants and equipment to lipreading classes, counselling and hearing therapy, there are services available that would help all of these people, including six million of them who could benefit from hearing aids¹⁰⁶. However, there are massive unmet needs¹⁰⁷ – on average people wait ten years to seek help for their hearing loss, and of the six million who could benefit from hearing aids only two million people have them – meaning that four million people who could benefit from hearing aids do not have them¹⁰⁸.</p> <p>Most hearing loss is age-related, with prevalence rising from 42% of over 50 year olds to 71% of over 70s. It affects people at a time when they are most at risk of many other health conditions, impacting on their ability to hear and communicate with friends, family and health professionals, and therefore on their ability to manage</p>
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¹⁰⁵ Davis (1995) *Hearing in Adults*, London: Whurr; Action on Hearing Loss (2011) *Hearing Matters*, London: Action on Hearing Loss.

¹⁰⁶ Action on Hearing Loss (2011) *Hearing Matters*, London: Action on Hearing Loss.

¹⁰⁷ Many other studies have found high levels of unrecognised hearing loss – see for example Ramdoo et al (2014) *Opportunistic hearing screening in elderly inpatients*, SAGE Open Medicine 2; Ramdoo, Singh, Tatla, London Northwest Healthcare (in publication).

¹⁰⁸ Davis et al (2007) *Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models*, *Health Technology Assessment* 11(42); Action on Hearing Loss (2011) *Hearing Matters*, London: Action on Hearing Loss.

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		<p>other health conditions, maintain active lives and live independently. With more of us living longer and with the strong link between ageing and hearing loss, the number of people with hearing loss is estimated to increase from 10 million to 14.5 million by 2031¹⁰⁹. Given that far too few people seek help when they first notice symptoms and many wait for long periods, the number with unaddressed needs will also increase unless something is done. Despite recent reforms to make it easier for people to access services, for example by providing services in people's communities, and reforms that have ensured effective services are in place that can deal with increased numbers of patients, most people with hearing loss are still not seeking help. This is why the UK Government recently launched a cross-government strategy, the Action Plan on Hearing Loss¹¹⁰, which called for action across government to tackle this "major public health issue". A recent government strategy in Northern Ireland, the Physical and Sensory Disability Strategy and Action Plan 2012-2015¹¹¹, also aimed to improve service provision, and in Scotland the 2014 See Hear strategic framework for sensory impairments highlighted the need for early diagnosis and intervention</p>
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¹⁰⁹ Davis (1995) Hearing in Adults, London: Whurr; Action on Hearing Loss (2011) Hearing Matters, London: Action on Hearing Loss.

¹¹⁰ The Department of Health and NHS England (2015) The Action Plan on Hearing Loss. London: Department of Health and NHS England. Available from: <http://www.england.nhs.uk/2015/03/23/hearing-loss/>.

¹¹¹ Department of Health, Social Services and Public Safety (2012) Physical and sensory disability strategy and action plan 2012-2015, Belfast: Department of Health, Social Services and Public Safety.

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		<p>for hearing loss, and stated that screening for sensory loss should be included in care pathways¹¹².</p> <p>There is clear evidence, outlined in this response, showing that early intervention is needed to encourage people to seek help, that hearing aids work, and that they are acceptable and bring major benefits to people with hearing loss. It is therefore vital that hearing screening is introduced now, to ensure that people are encouraged to get the help they need from hearing aids as well as other support; are made aware of the impacts of hearing loss and the effectiveness of the interventions available; are able to communicate, manage and reduce the risk of other health conditions; and remain active, independent and healthy. A health technology assessment, which along with other evidence is largely missing from this review, has set out how screening meets the NSC's criteria¹¹³. In our response we set out how this and numerous other pieces of evidence fulfil the NSC's criteria.</p>
Page 3	Summary	<p>This literature review was undertaken in December 2012, nearly three years ago. The review states that some additional papers were included, but the review was not re-run at this time. Therefore key pieces of recent</p>

¹¹² The Scottish Government (2014) See hear: a strategic framework for meeting the needs of people with a sensory impairment in Scotland, Edinburgh: Scottish Government.

¹¹³ Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, *Health Technology Assessment* 11(42).

7. ACTION ON HEARING LOSS

		<p>evidence are missing.</p> <p>As a consequence, the review misses many significant pieces of evidence, particularly around the impact of screening and hearing aids and the link with dementia, which we detail throughout this response. Crucially, the review has also not taken into account the focus on earlier diagnosis and service improvements for hearing loss in recent national government strategies¹¹⁴, including the UK Government strategy released earlier this year, the Action Plan on Hearing Loss¹¹⁵, which sets out the need for earlier identification and diagnosis of hearing loss:</p> <p>“Early identification and intervention are key actions that should make a real difference in reducing risks and attaining better hearing health outcomes throughout life. It is particularly important in reducing the impact and cost of congenital hearing loss and of long term conditions such as adult onset progressive hearing loss”.</p> <p>The review also misses the impact of improvements to</p>
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¹¹⁴ See General section above - The Scottish Government (2014) See hear: a strategic framework for meeting the needs of people with a sensory impairment in Scotland, Edinburgh: Scottish Government; Department of Health, Social Services and Public Safety (2012) Physical and sensory disability strategy and action plan 2012-2015, Belfast: Department of Health, Social Services and Public Safety.

¹¹⁵ The Department of Health and NHS England (2015) The Action Plan on Hearing Loss. London: Department of Health and NHS England. Available from: <http://www.england.nhs.uk/2015/03/23/hearing-loss/>.

7. ACTION ON HEARING LOSS

		pathways and capacity, for example following the modernising of NHS hearing aids ¹¹⁶ , and through the Any Qualified Provider policy in England, which a Monitor review ¹¹⁷ found has led to flexible and innovative pathways. These changes mean the system is well positioned to deal with the increased numbers of people seeking help that would be expected from the introduction of screening.
Page 5, section 2.2.	The condition, health impact	<p>This review has not included most of the evidence around the impacts of hearing loss, particularly on social isolation, depression and dementia (see also our response to sections 4.1 and 4.2 below for missed evidence on the benefits of hearing aids in reducing these impacts).</p> <p>The evidence is clear that hearing loss often leads to communication difficulties, hindering an individual's interaction with friends, family, and colleagues, which can lead to social isolation and loneliness¹¹⁸. Gopinath et al</p>

¹¹⁶ See for example Davis et al (2012) Diagnosing patients with age-related hearing loss and tinnitus: supporting GP clinical engagement through innovation and pathway redesign in audiology services, *International Journal of Otolaryngology*. Available from <http://dx.doi.org/10.1155/2012/290291>.

¹¹⁷ Monitor (2015) NHS adult hearing services in England: exploring how choice is working for patients, London: Monitor. Available from: <https://www.gov.uk/government/publications/nhs-adult-hearing-services-in-england-exploring-how-choice-is-working-for-patients>.

¹¹⁸ Herbst et al (1990) Implications of hearing impairment for elderly people in London and in Wales. *Acta Oto-laryngologica* 476, 209-214; Du Feu and Fergusson (2003) Sensory impairment and mental health. *Advances in psychiatric treatment*. 9, 95-103; Monzani et al (2008) Psychological profile and social behaviour of working adults with mild or moderate hearing loss. *Acta Otorhinolaryngologica Italica*. 28(2), 61-6; Barlow et al (2007) Living with late deafness: insight from between worlds. *International Journal of Audiology*. 46(8), 442-8; Héту et al (1993) The impact of acquired hearing loss on intimate relationships: implications for rehabilitation. *Audiology* 32(3), 363–81; Gopinath et al (2012) Hearing-impaired adults are at increased risk of experiencing emotional distress and social engagement restrictions five years later. *Age and Ageing* 41(5), 618–623; Echaliér (2010) In it together – the impact of hearing loss on personal relationships, London: Action on Hearing Loss. Available from:

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		<p>(2012) examined more than 800 older hearing impaired people over five years and found that older, hearing-impaired adults were “significantly more likely to experience emotional distress and reduced social engagement restrictions (self-perceived hearing handicap) directly due to their hearing impairment”¹¹⁹. From a study of 73 hearing-impaired subjects and 96 controls, Monzani et al concluded that “sensory impairment, with its associated disability, may discourage hearing-impaired individuals from exposing themselves to socially challenging situations, producing isolation that leads to depression, irritability, feelings of inferiority”¹²⁰. As summarised in Arlinger’s review of the literature on the negative consequences of uncorrected hearing loss, unaddressed hearing loss “gives rise to disabilities of various kinds” and can “often lead to withdrawal from social activities... this, in turn, leads to reduced intellectual and cultural stimulation, and an increasingly passive and isolated social citizen”¹²¹.</p> <p>Extensive research shows that, if it is not addressed early</p>
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www.hearingloss.org.uk/~media/Documents/Policy%20research%20and%20influencing/Research/Previous%20research%20reports/2010/In%20it%20together/In%20it%20Together.ashx; National Council on the Aging (2000) The consequences of untreated hearing loss in older persons. *Head & Neck Nursing* 18(1), 12-6; Pronk et al (2011) Prospective effects of hearing status on loneliness and depression in older persons: identification of subgroups. *International Journal of Audiology* 50(12), 887-96.

¹¹⁹ Gopinath et al (2012) Hearing-impaired adults are at increased risk of experiencing emotional distress and social engagement restrictions five years later. *Age and Ageing* 41(5), 618–623.

¹²⁰ Monzani et al (2008) Psychological profile and social behaviour of working adults with mild or moderate hearing loss. *Acta Otorhinolaryngologica Italica* 28(2), 61-6.

¹²¹ Arlinger (2003) Negative consequences of uncorrected hearing loss – a review. *International Journal of Audiology* 42(2), 17-20.

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		<p>and effectively, hearing loss can increase the risk of mental health problems¹²². Anxiety, paranoia and depression are particular risks; research has shown that the hard of hearing are over-represented among samples of patients suffering from paranoid psychoses in later life¹²³ and older people with hearing loss are more than twice as likely to develop depression as their peers without hearing loss¹²⁴.</p> <p>A growing body of evidence has identified a strong association between all levels of hearing loss and cognitive decline and dementia¹²⁵. People with mild hearing loss are twice as likely to develop dementia as people without any hearing loss. The risk increases to three times for those with moderate hearing loss, and</p>
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¹²² Eastwood et al (1985) Acquired hearing loss and psychiatric illness: an estimate of prevalence and co-morbidity in a geriatric setting. *British Journal of Psychiatry* 147, 552–556; Saito et al (2010) Hearing handicap predicts the development of depressive symptoms after three years in older community-dwelling Japanese. *Journal of the American Geriatrics Society* 58(1), 93-7; National Council on the Aging (2000) The consequences of untreated hearing loss in older persons. *Head & Neck Nursing* 18(1), 12-6; Cacciatore et al (1999) Quality of life determinants and hearing function in an elderly population: Osservatorio Geriatrico Campano Study Group. *Gerontology* 45, 323-323; Genther et al (2013) Association of hearing loss with hospitalization and burden of disease in older adults. *Journal of the American Medical Association* 309(22), 2322; Monzani et al (2008) Psychological profile and social behaviour of working adults with mild or moderate hearing loss. *Acta Otorhinolaryngologica Italica*. 28(2), 61-6.

¹²³ Cooper (1976) Deafness and psychiatric illness. *British Journal of Psychiatry* 129, 216-226.

¹²⁴ Saito et al (2010) Hearing handicap predicts the development of depressive symptoms after three years in older community-dwelling Japanese. *Journal of the American Geriatrics Society* 58(1), 93-7.

¹²⁵ Lin et al (2011) Hearing loss and incident dementia. *Archives of Neurology* 68(2), 214-220; Lin et al (2013) Hearing loss and cognitive decline in older adults. *Internal Medicine* 173(4), 293-299; Lindenberger and Baltes (1994) Sensory functioning and intelligence in old age: a strong connection. *Psychology and Aging* 9, 339-355; Lindenberger and Baltes (1997) Intellectual functioning in old and very old age: cross-sectional results from the Berlin aging study. *Psychology and Aging* 12, 410-432; Uhlmann et al (1989) Relationship of hearing impairment to dementia and cognitive dysfunction in older adults. *Journal of the American Medical Association* 261, 1916-1919; Gurgel et al (2014) Relationship of hearing loss and dementia: a prospective, population-based study. *Otology & Neurotology* 35(5), 775-81; Cacciatore et al (1999) Quality of life determinants and hearing function in an elderly population: Osservatorio Geriatrico Campano Study Group. *Gerontology* 45, 323-323.

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		<p>people with severe hearing loss are five times as likely to develop dementia¹²⁶. Recent research found that hearing loss not only increases the risk of the onset of dementia, but also accelerates the rate of cognitive decline.¹²⁷</p> <p>Hearing loss has also been shown to have a negative impact on overall health. Studies have found hearing loss to be independently associated with increased health care use and burden of disease among older adults¹²⁸, more frequent falls¹²⁹, and an increased risk of mortality¹³⁰. There is also evidence to suggest that there</p>
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¹²⁶ Lin et al (2011) Hearing loss and incident dementia. *Archives of Neurology* 68(2), 214-220; Lin et al (2013) Hearing loss and cognitive decline in older adults. *Internal Medicine* 173(4), 293-299.

¹²⁷ 293-299; Lindenberger and Baltes (1994) Sensory functioning and intelligence in old age: a strong connection. *Psychology and Aging* 9, 339-355; Lindenberger and Baltes (1997) Intellectual functioning in old and very old age: cross-sectional results from the Berlin aging study. *Psychology and Aging* 12, 410-432; Uhlmann et al (1989) Relationship of hearing impairment to dementia and cognitive dysfunction in older adults. *Journal of the American Medical Association* 261, 1916-1919; Gurgel et al (2014) Relationship of hearing loss and dementia: a prospective, population-based study. *Otology and Neurotology* 35(5), 775-81.

¹²⁸ Lin et al (2013) Hearing loss and cognitive decline in older adults. *Internal Medicine* 173(4), 293-299; Gurgel et al (2014) Relationship of hearing loss and dementia: a prospective, population-based study. *Otology & Neurotology* 35(5), 775-81.

¹²⁹ Genther et al (2013) Association of hearing loss with hospitalization and burden of disease in older adults. *Journal of the American Medical Association* 309(22), 2322; The Ear Foundation (2014) The Real Cost of Adult Hearing Loss: Reducing its impact by increasing access to the latest hearing technologies. Nottingham: The Ear Foundation.

¹³⁰ Lin and Ferrucci (2012) Hearing loss and falls among older adults in the United States. *Archives of Internal Medicine* 172(4), 369-371; Viljanen et al (2009) Hearing as a predictor of falls and postural balance in older female twins. *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences* 64(2), 312-7.

¹³⁰ Appollonio et al (1996) Effects of sensory aids on the quality of life and mortality of elderly people: a multivariate analysis. *Age and Ageing* 25, 89-96; Karpa et al (2010) Associations between hearing impairment and mortality risk in older persons: the Blue Mountains Hearing Study. *Annals of Epidemiology* 20(6), 452-9.

7. ACTION ON HEARING LOSS

		are associations between hearing loss and diabetes ¹³¹ , cardiovascular disease ¹³² , stroke ¹³³ , Parkinsons ¹³⁴ and sight loss ¹³⁵ . Communication issues between patients and health professionals, coupled with reduced participation and mental health issues, mean that hearing loss can cause problems for the diagnosis and management of any other health condition – and this is particularly a problem given the high prevalence of hearing loss in older people who are at a higher risk of developing many other health conditions ¹³⁶ . As the national Government strategy, the Action Plan on Hearing Loss states, the challenge of tackling hearing loss is a “major public health issue”, particularly in relation to the growing numbers of older people with hearing loss, for whom hearing loss has a “disproportionate effect on their wider physical and mental health, independence and ability to work”.
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¹³¹ Kakarlapudi et al (2003) The effect of diabetes on sensorineural hearing loss. *Otology and Neurotology* 24(3), 382-386; Mitchell et al (2009) Relationship of Type 2 diabetes to the prevalence, incidence and progression of age-related hearing loss. *Diabetic Medicine* 26(5), 483-8; Chasens et al (2010) Reducing a barrier to diabetes education: identifying hearing loss in patients with diabetes. *Diabetes Education* 36(6), 956-64.

¹³² Helzner et al (2011) Hearing sensitivity in older adults: associations with cardiovascular risk factors in the health, aging and body composition study. *Journal of the American Geriatric Society*, 59 (6), 972-9; Rosenhall et al (2006) Age-related hearing loss and blood pressure. *Noise Health*, 8 (31), 88-94.

¹³³ Formby et al (1987) Hearing loss among stroke patients. *Ear and Hearing* 8(6), 326-32; Gopinath et al (2009) Association between age-related hearing loss and stroke in an older population. *Stroke* 40(4), 1496–1498.

¹³⁴ Pisani et al (2015) An investigation of hearing impairment in de-novo Parkinson's disease patients: a preliminary study. *Parkinsonism & Related Disorders* Jun 9

¹³⁵ Chia et al (2006) Association between vision and hearing impairments and their combined effects on quality of life. *Archives of Ophthalmology* 124(10), 1465-70.

¹³⁶ Action on Hearing Loss / DCAL (2013) *Joining up*, London: Action on Hearing Loss; McKee et al (2011) Perceptions of cardiovascular health in an underserved community of deaf adults using American Sign Language. *Disability and Health* 4(3), 192-197; National Council on the Aging (2000) The consequences of untreated hearing loss in older persons. *Head & Neck Nursing* 18(1), 12-6.

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		<p>Hearing loss is “responsible for an enormous personal, social and economic impact throughout life”¹³⁷.</p> <p>As well as the health impacts outlined above, hearing loss has major impacts on employment. People with hearing loss are less likely to be employed compared with people without hearing loss¹³⁸, and many don’t fulfil their potential or retire early because of their hearing loss¹³⁹. The International Longevity Centre has estimated that in 2013, the UK economy lost £24.8 billion in potential economic output because people with hearing loss are unable to work¹⁴⁰. Because of the ageing population and people staying in work for longer, they estimate that this will increase to £38.6 billion lost per year by 2031¹⁴¹.</p>
Page 6, section 2.3.	All the cost-effective primary prevention interventions should have been implemented as far as practicable	<p>This section of the review does not take into account the fact that although some forms of hearing loss are preventable, research suggests that age-related hearing loss – the most prevalent form of hearing loss – cannot be prevented. Therefore no primary prevention interventions have been shown to reduce the prevalence of age-related hearing loss. It is clear from the focus in</p>

¹³⁷ The Department of Health and NHS England (2015) The Action Plan on Hearing Loss. London: Department of Health and NHS England. Available from: <http://www.england.nhs.uk/2015/03/23/hearing-loss/>.

¹³⁸ Office for National Statistics (ONS) (2015) Labour Force Survey January – March 2015, analysis cited in House of Commons debate 9 June 2015 c 1723W.

¹³⁹ Arrowsmith (2014) Hidden disadvantage: why people with hearing loss are still losing out at work. London: Action on Hearing Loss.

¹⁴⁰ International Longevity Centre (ILC) UK (2013) Commission on hearing loss: final report, London: ILC-UK.

¹⁴¹ International Longevity Centre (ILC) UK (2013) Commission on hearing loss: final report, London: ILC-UK.

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		this review on over 50s that any screening programme would target older people, who make up the vast majority of people affected by hearing loss, and most of whom will have age-related hearing loss. This should therefore not be a reason why a screening programme should not be introduced.
Pages 6-9, section 3.1	There should be a simple, safe, precise and validated screening test	A number of screening tests and pieces of evidence are relevant here but are not included in this review. Missing tests include speech in noise tests ¹⁴² , which can be undertaken online or over the phone, and an easy to use, low cost hand-held screener which uses pure tones to screen for sensorineural, conductive and mixed hearing losses at different frequencies and severities ¹⁴³ . Because it uses pure tones itself, the hand-held screener has been shown to have high negative and positive predictive values, and there was good correlation when its results were compared with full audiometric testing ¹⁴⁴ . It is non-invasive, safe and easy to use, it has been shown to be cost effective ¹⁴⁵ , and it was successful and

¹⁴² Smits (2006) How we do it; the Dutch functional hearing-screening tests by telephone and internet. Dept of Otolaryngology/Audiology, EMGO Institute, VU University Medical Centre, Amsterdam; Watson (2012) Telephone screening tests for functionally impaired hearing: current use in seven countries and development of a US version. *Journal of the American Academy of Audiology* 23, 757-767.

¹⁴³ Parving et al (2008) Evaluation of a hearing screener, *Audiological Medicine* 6(2), 115-9.

¹⁴⁴ Parving et al (2008) Evaluation of a hearing screener, *Audiological Medicine* 6(2), 115-9; Davis et al (2012) Diagnosing patients with age-related hearing loss and tinnitus: supporting GP clinical engagement through innovation and pathway redesign in audiology services, *International Journal of Otolaryngology*. Available from <http://dx.doi.org/10.1155/2012/290291>.

¹⁴⁵ Action on Hearing Loss / London Economics (2010) Cost benefit analysis of hearing screening for older people. Available from: www.actiononhearingloss.org.uk/supporting-you/policy-research-and-influencing/research/our-research-reports/research-reports-2010.aspx.

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		<p>popular when it was piloted by GPs¹⁴⁶. This test would be effective at predicting full audiometric testing and at predicting the benefit a patient would get from hearing aids, and it would therefore be effective in a screening programme.</p> <p>The conclusion of the health technology assessment, a major large scale study which found that the optimal cut off for screening was 35 dB HL, and that the most effective screening test was to ask two verified questions alongside pure tone audiometry, is also missing here¹⁴⁷. Since that time screening tools such as the handheld screener above have been developed, which like full audiometry uses pure tones to effectively screen for hearing loss. There is therefore good evidence that a simple, safe, precise and validated screening test is available, and is easy to use and low cost.</p>
Page 10, section 3.3	The test should be acceptable to the population	<p>There are studies on the acceptability of hearing screening, and there is little risk to the population of screening or hearing aid use. The health technology assessment showed that hearing screening is acceptable to the older population¹⁴⁸, and a systematic review has</p>

¹⁴⁶ Parving et al (2008) Evaluation of a hearing screener, *Audiological Medicine* 6(2), 115-9; Davis et al (2012) Diagnosing patients with age-related hearing loss and tinnitus: supporting GP clinical engagement through innovation and pathway redesign in audiology services, *International Journal of Otolaryngology*. Available from <http://dx.doi.org/10.1155/2012/290291>.

¹⁴⁷ Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, *Health Technology Assessment* 11(42).

¹⁴⁸ Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, *Health Technology Assessment* 11(42).

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		shown hearing aids are acceptable and used – studies showed that 80-90% of people continue to use their hearing aids ¹⁴⁹ . Page 12 of this review states that “[h]arms are unlikely to be greater than minimal because screening and confirmatory testing are non-invasive and treatment with hearing aids is not associated with significant harms”. This should therefore not be a reason why screening is not introduced.
Page 11, section 3.5	There should be an agreed policy on the further diagnostic investigation of individuals with a positive test result and on the choices available to those individuals	<p>Evidence is missing here on current policy around the diagnosis and management of hearing loss, recent experience of changes to pathways and how these have dealt well with increased and variable numbers of patients and so would be appropriate for screen detected cases.</p> <p>Only around one in three people who could benefit from hearing aids currently has them, and evidence shows that people wait on average ten years to seek help for their hearing loss¹⁵⁰. There is clearly extensive undiagnosed hearing loss and unmet need for hearing aids and other management. Furthermore, the current pathway from GP to hearing services (such as audiology) or to ENT and then on to other services works well. Research from the UK and elsewhere shows that GPs</p>

¹⁴⁹ Perez and Edmonds (2012) A systematic review of studies measuring and reporting hearing aid usage in older adults since 1999: a descriptive summary of measurement tools, *PLoS ONE* 7(3), e31831.

¹⁵⁰ Action on Hearing Loss (2011) Hearing Matters, London: Action on Hearing Loss; Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, *Health Technology Assessment* 11(42); See also: Ramdoo et al (2014) Opportunistic hearing screening in elderly inpatients, *SAGE Open Medicine* 2; Ramdoo, Singh, Tatla, London Northwest Healthcare (in publication).

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		<p>are seen as credible sources of information and their advice and support can motivate patients to manage their hearing loss¹⁵¹, and the vast majority of people are satisfied with hearing services and the hearing aids they receive¹⁵². Hearing screening would lead to increased numbers of patients seeking help and needing support from services. However, there is previous experience of individual hearing services responding to increased numbers of patients resulting from the modernising of hearing aids. In response to this, the way services were commissioned was reformed, so that they are now able to cope with increasing levels of patient numbers¹⁵³. In recent years, further reforms such as the introduction of any qualified provider (AQP) in adult hearing services in England have increased flexibility in provision, so commissioners pay only per patient and can respond quickly to changes in numbers of patients seen through flexibility in provision¹⁵⁴.</p> <p>Reforms to hearing services mean there are now effective and flexible pathways for people diagnosed with hearing loss, reducing the risk of increased patient</p>
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¹⁵¹ Gilliver and Hickson (2011) Medical practitioners' attitudes to hearing rehabilitation. *International Journal of Audiology* 50(12), 850-856.

¹⁵² Eurotrak data (2012). Available from: http://www.anovum.com/publikationen/Anovum_EuroTrak_2012_UK_EuroTrak%202012.pdf

¹⁵³ Davis et al (2012) Diagnosing patients with age-related hearing loss and tinnitus: supporting GP clinical engagement through innovation and pathway redesign in audiology services, *International Journal of Otolaryngology*. Available from <http://dx.doi.org/10.1155/2012/290291>.

¹⁵⁴ Monitor (2015) NHS adult hearing services in England: exploring how choice is working for patients, London: Monitor. Available from: <https://www.gov.uk/government/publications/nhs-adult-hearing-services-in-england-exploring-how-choice-is-working-for-patients>.

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		<p>numbers leading to a lack of capacity and increased waiting lists¹⁵⁵. AQP means that services must provide a high quality service, and are paid a set tariff per patient, so increased numbers of patients are easily dealt with. Strict service standards and an effective pathway were developed and agreed between the Department of Health, hearing loss charities and providers. This includes referral criteria, clinical guidance and standards for the timing of follow up and how often tests should take place. It has been shown to work well and would respond well to cases detected through screening¹⁵⁶.</p> <p>Across the whole the UK, including outside of AQP areas, some GPs and other health professionals do screen and check people's hearing, and refer positive cases to audiology or ENT. There are large variations in the numbers of audiological assessments between different areas¹⁵⁷, but those people seeking help have generally been dealt with well and waiting times have been kept low. Evidence from areas where increased numbers of people have sought help suggests that services are flexible enough to deal with increased</p>
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¹⁵⁵ Monitor (2015) NHS adult hearing services in England: exploring how choice is working for patients, London: Monitor. Available from: <https://www.gov.uk/government/publications/nhs-adult-hearing-services-in-england-exploring-how-choice-is-working-for-patients>.

¹⁵⁶ Department of Health (2012) Adult hearing AQP implementation pack, London: Department of Health; Monitor (2015) NHS adult hearing services in England: exploring how choice is working for patients, London: Monitor. Available from: <https://www.gov.uk/government/publications/nhs-adult-hearing-services-in-england-exploring-how-choice-is-working-for-patients>.

¹⁵⁷ Public Health England (2013) NHS Atlas of Variation in Diagnostic Services: reducing unwarranted variation to increase value and improve quality, London: Public Health England; The Department of Health and NHS England (2015) The Action Plan on Hearing Loss. London: Department of Health and NHS England. Available from: <http://www.england.nhs.uk/2015/03/23/hearing-loss/>.

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		numbers of people seeking help, and are appropriate to manage the further diagnostic investigation and management of screen detected cases of hearing loss.
Pages 11-15, sections 4.1 and 4.2	There should be an effective treatment or intervention for patients identified through early detection, with evidence of early treatment leading to better outcomes than late treatment; There should be agreed evidence-based policies covering which individuals should be offered treatment and the appropriate treatment to be offered.	<p>The 2007 health technology assessment showed the benefits of earlier diagnosis and fitting of hearing aids, and therefore the need for a screening programme to ensure people get the most from hearing aid fittings by getting these earlier - this is particularly important given that people wait on average ten years before they seek help for their hearing loss, and so only a minority of people who could benefit from hearing aids currently have them¹⁵⁸. This key evidence is missing here.</p> <p>The review of the evidence of the effectiveness of hearing aids in this section (pages 13-15) is severely lacking. Key systematic reviews¹⁵⁹ have been overlooked, and randomised controlled trials¹⁶⁰ that have shown the benefits of hearing aids, alongside many robust studies which find health improvement benefits of</p>

¹⁵⁸ Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, *Health Technology Assessment* 11(42); MacMahon (2013) The need for improved detection and management of adult-onset hearing loss in Australia, *International Journal of Otolaryngology*, Article ID 308509.

¹⁵⁹ Chisolm et al (2007) A systematic review of health-related quality of life and hearing aids: final report of the American Academy of Audiology task force on the health-related quality of life benefits of amplification in adults. *Journal of American Academy of Audiology* 18, 151-183; Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, *Health Technology Assessment* 11(42); Chao and Chen (2008) Cost-effectiveness of hearing aids in the hearing-impaired elderly: a probabilistic approach. *Otology and Neurotology* 29(6), 776-83.

¹⁶⁰ Mulrow et al (1990) Quality-of-life changes and hearing impairment, a randomized trial. *Annals of Internal Medicine* 113(3), 188-94; Yueh et al (2001) Randomized trial of amplification strategies. *Archives of Otolaryngology - Head and Neck Surgery* 127(10), 1197-204; Jerger et al (1996) Comparison of conventional amplification and an assistive listening device in elderly persons. *Ear and Hearing* 17(6), 490-504.

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		hearing aids using quality of life outcome measures have not been included here, some of which cover long periods of time (up to 11 years) and some cover screening. These include: Swan et al 2012 ¹⁶¹ ; Barton et al 2004 ¹⁶² ; Appollonio et al 1996 ¹⁶³ ; Davis et al 2007 ¹⁶⁴ ; Mondelli and Souza 2012 ¹⁶⁵ ; Lotfi et al. 2009 ¹⁶⁶ ; McArdle et al 2005 ¹⁶⁷ ; Mizutari et al 2013 ¹⁶⁸ ; National Council on the Aging 2000 ¹⁶⁹ ; Yueh et al 2010 ¹⁷⁰ ; Dawes et al 2015 ¹⁷¹ . Reviews of the literature have taken the large number of positive studies as proof that hearing aids
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¹⁶¹ Swan et al (2012) Health-related quality of life before and after management in adults referred to otolaryngology: a prospective national study. *Clinical Otolaryngology* 37(1), 35-43.

¹⁶² Barton et al (2004) Comparing utility scores before and after hearing aid provision : results according to the EQ-5D, HUI3 and SF-6D. *Applied Health Economics and Health Policy* 3(2), 103-5.

¹⁶³ Appollonio et al (1996) Effects of sensory aids on the quality of life and mortality of elderly people: a multivariate analysis. *Age and Ageing* 25, 89-96.

¹⁶⁴ Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, *Health Technology Assessment* 11(42).

¹⁶⁵ Mondelli and Souza (2012) Quality of life in elderly adults before and after hearing aid fitting. *Revista Brasileira de Otorrinolaringologia* 78(3), 49-56.

¹⁶⁶ Lotfi et al (2009) Quality of life improvement in hearing-impaired elderly people after wearing a hearing aid. *Archives of Iranian Medicine* 12(4), 365-70.

¹⁶⁷ McArdle et al (2005) The WHO-DAS II: Measuring outcomes of hearing aid intervention for adults. *Trends in Amplification* 9(3), 127-43.

¹⁶⁸ Mizutari et al (2013) Age-related hearing loss and the factors determining continued usage of hearing aids among elderly community-dwelling residents. *PLoS One* 8(9), e73622.

¹⁶⁹ National Council on the Aging (2000) The consequences of untreated hearing loss in older persons. *Head & Neck Nursing* 18(1), 12-6.

¹⁷⁰ Yueh et al (2010) Long-term effectiveness of screening for hearing loss: the screening for auditory impairment--which hearing assessment test (SAI-WHAT) randomized trial. *Journal of the American Geriatrics Society*, 58(3), 427-34.

¹⁷¹ Dawes et al (2015) Hearing-aid use and long-term health outcomes: hearing handicap, mental health, social engagement, cognitive function, physical health, and mortality, *International Journal of Audiology*, early online 1-7. Available from: <http://informahealthcare.com/doi/abs/10.3109/14992027.2015.1059503?journalCode=ija>.

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		<p>provide significant benefits to communication, health, wellbeing and quality of life¹⁷².</p> <p>This is on top of the evidence of other benefits from hearing aids – as detailed above, hearing loss is associated with an increased risk and increased impact of numerous other health conditions, and evidence not included in this review shows that hearing aids reduce the risk and impact of other health conditions – for example one study showed that hearing aids reduce the risk of isolation associated with hearing loss¹⁷³, evidence shows that hearing aids reduce the risk of depression¹⁷⁴, and new evidence suggests that hearing aids may reduce the risk of developing dementia¹⁷⁵. By enabling communication between patients and health professionals, and improving participation and mental</p>
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¹⁷² Chao and Chen (2008) Cost-effectiveness of hearing aids in the hearing-impaired elderly: a probabilistic approach. *Otology and Neurotology* 29(6), 776-83.

¹⁷³ Pronk et al (2011) Prospective effects of hearing status on loneliness and depression in older persons: identification of subgroups. *International Journal of Audiology* 50(12), 887-96.

¹⁷⁴ Saito et al (2010) Hearing handicap predicts the development of depressive symptoms after three years in older community-dwelling Japanese. *Journal of the American Geriatrics Society* 58(1), 93-7; National Council on the Aging (2000) The consequences of untreated hearing loss in older persons. *Head & Neck Nursing* 18(1), 12-6; Mulrow et al (1990) Quality-of-life changes and hearing impairment, a randomized trial. *Annals of Internal Medicine* 113(3), 188-94; Mulrow et al (1992) Sustained benefits of hearing aids. *Journal of Speech & Hearing Research* 35(6), 1402-5; Acar et al (2011) Effects of hearing aids on cognitive functions and depressive signs in elderly people. *Archives of Gerontology and Geriatrics*, 52(3), 250-2; Goorabi et al (2008) Hearing aid effect on elderly depression in nursing home patients. *Asia Pacific Journal of Speech, Language and Hearing* 11(2), 119-123.

¹⁷⁵ Deal et al (2015) Hearing impairment and cognitive decline: a pilot study conducted within the atherosclerosis risk in communities neurocognitive study. *American Journal of Epidemiology*, 181 (9), 680-690; Lin et al (2011) Hearing loss and incident dementia. *Archives of Neurology*, 68 (2), 214-220; Lin et al (2013) Hearing loss and cognitive decline in older adults. *Internal Medicine*, 173 (4), 293-299.

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		<p>health, hearing aids certainly improve the diagnosis and management of other health conditions¹⁷⁶. Although it is not always recognised by commissioners, there is very good evidence that hearing aids are beneficial and cost effective – in particular at a very low cost they lead to major cost savings in terms of quality of life, employment and NHS and social care spend over the long term¹⁷⁷. Not providing hearing aids or restricting their provision is a false economy.</p> <p>Despite the quality and quantity of the evidence of the benefits of hearing aids, the review says that the evidence is limited. Since there are robust studies, including randomised controlled trials and systematic reviews, which show the clear benefits of hearing aids in terms of communication, mental health outcomes, quality of life, risk of and management of other health conditions, and general health, there is no reason why more evidence in these areas is required. Evidence is already available that shows the benefits of hearing aids. Undertaking long term randomised controlled trials to test the benefits of an intervention in a population where it is already provided to everyone who wants it for free would be unnecessary and may be unethical. It would involve withholding hearing aids from people with hearing loss</p>
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¹⁷⁶ Action on Hearing Loss / DCAL (2013) *Joining up*, London: Action on Hearing Loss; McKee et al (2011) Perceptions of cardiovascular health in an underserved community of deaf adults using American Sign Language. *Disability and Health* 4(3), 192-197; National Council on the Aging (2000) The consequences of untreated hearing loss in older persons. *Head & Neck Nursing* 18(1), 12-6.

¹⁷⁷ The Ear Foundation (2014) *The Real Cost of Adult Hearing Loss: Reducing its impact by increasing access to the latest hearing technologies*. Nottingham: The Ear Foundation.

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		for long periods of time despite knowledge that they would derive significant benefits from those hearing aids.
Page 11, sections 4.1 and 4.2	There should be an effective treatment or intervention for patients identified through early detection, with evidence of early treatment leading to better outcomes than late treatment; There should be agreed evidence- based policies covering which individuals should be offered treatment and the appropriate treatment to be offered	Evidence is not included here of the benefits of other services for people who are unlikely to benefit from hearing aids and are not fit for surgery for cochlear implants – for example assistive equipment and support services, lipreading classes, hearing therapy, training and counselling ¹⁷⁸ . This is important as it shows that screening would be useful and provide a benefit for these groups of people as well.
Page 12, sections 4.1 and 4.2	There should be an effective treatment or intervention for patients identified through early detection, with evidence of early treatment leading to better outcomes than late treatment; There should be agreed evidence- based policies covering which individuals should be offered treatment and the appropriate treatment to be offered	It is a common misconception that people who are provided with hearing aids do not use them. The evidence shows that most people do use and gain benefit from their hearing aids. More recent evidence from a systematic review and from two studies undertaken showing data from the UK shows that acceptance of hearing aids is higher than the figures quoted here. A systematic review showed that although studies used different time periods and measures, very

¹⁷⁸ See for example Hickson et al (2007) A randomized controlled trial evaluating the active communication education program for older people with hearing impairment, *Ear and Hearing* 28(2), 212-30; Barker et al (2014) Interventions to improve hearing aid use in adult auditory rehabilitation, *Cochrane Database of Systematic Reviews* 7, CD010342; Ringham (2013) Not just lip service, London: Action on Hearing Loss, available at: <http://www.actiononhearingloss.org.uk/notjustlipservice.aspx>; see also best practice guidance from the British Society of Audiology, available at: http://www.thebsa.org.uk/wp-content/uploads/2014/04/BSA_APD_Management_1Aug11_FINAL_amended17Oct11.pdf and http://www.thebsa.org.uk/wp-content/uploads/2014/04/BSA_PPC_Rehab_Final_30August2012.pdf, and guidance from the American Speech-Language-Hearing Association, available at: <http://www.asha.org/public/hearing/Hearing-Assistive-Technology>

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		<p>high numbers of people continued to use and benefit from hearing aids, usually around 80-90%¹⁷⁹. A recent study of numbers across Europe, including in the UK, and a study undertaken into the introduction of AQP in England also showed that the vast majority of people wore and gained benefit from their hearing aids, and were satisfied with their hearing aids¹⁸⁰.</p> <p>Furthermore, with proper information and support, including self-management, levels of hearing aid use increase and people have improved ability to hear and communicate¹⁸¹.</p>
Page 15-16, section 4.3	Clinical management of the condition and patient outcomes should be optimised in all healthcare providers prior to participation in a screening programme.	<p>See response to Summary and section 3.5 above. Clear published evidence shows that waiting times have improved, and this review misses the reforms to pathways following the introduction of AQP. The experience in some areas shows that the health system can deal with increased numbers of patients, and is already working well in encouraging patients to use, and gain benefit from, their hearing aids. Although improvements can always be made, the central needs of most people who seek help are being met by high quality</p>

¹⁷⁹ Perez and Edmonds (2012) A systematic review of studies measuring and reporting hearing aid usage in older adults since 1999: a descriptive summary of measurement tools. *PLoS ONE* 7 (3), e31831.

¹⁸⁰ Monitor (2015) NHS adult hearing services in England: exploring how choice is working for patients, London: Monitor. Available from: <https://www.gov.uk/government/publications/nhs-adult-hearing-services-in-england-exploring-how-choice-is-working-for-patients>; Eurotrak data (2012). Available from: http://www.anovum.com/publikationen/Anovum_EuroTrak_2012_UK_EuroTrak%202012.pdf

¹⁸¹ Leighton et al (2013) Evaluation of interactive video tutorials to educate first-time hearing aid users, *The European Journal of Public Health* 23 (1); Barker et al (2014) Interventions to improve hearing aid use in adult auditory rehabilitation, *Cochrane Database of Systematic Reviews* 7, CD010342.

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		<p>hearing services and hearing aid provision. A systematic review showed that although studies used different time periods and measures, very high numbers of people continued to use and benefit from hearing aids, usually around 80-90%¹⁸². A recent study of numbers across Europe, including in the UK, and a study undertaken into the introduction of AQP in England also showed that the vast majority of people wore and gained benefit from their hearing aids, and were satisfied with their hearing aids¹⁸³. Where the pathway is currently not working is at the start – many more people must be encouraged to seek help for their hearing loss in the first place, and the best and most cost effective way to do this would be to introduce a screening programme.</p>
<p>Pages 16-18, sections 5.1 and 5.2.</p>	<p>There should be evidence from high quality Randomised Controlled Trials that the screening programme is effective in reducing mortality or morbidity. Where screening is aimed solely at providing information to allow the person being screened to make an “informed choice” (eg. Down’s syndrome, cystic fibrosis carrier</p>	<p>This section does not take into account the extent of unmet need for the diagnosis and management of hearing loss – on average people with hearing loss wait ten years to seek help, and only one in three people who need hearing aids currently has them¹⁸⁴. It is clear that for long periods of time, most people with hearing loss simply do not seek help from anyone, and it is unusual for them to be referred for diagnosis opportunistically by</p>

¹⁸² Perez and Edmonds (2012) A Systematic Review of Studies Measuring and Reporting Hearing Aid Usage in Older Adults since 1999: A Descriptive Summary of Measurement Tools. PLoS ONE 7 (3), e31831

¹⁸³ Monitor (2015) NHS adult hearing services in England: exploring how choice is working for patients, London: Monitor. Available from: <https://www.gov.uk/government/publications/nhs-adult-hearing-services-in-england-exploring-how-choice-is-working-for-patients>; Eurotrak data (2012). Available at: http://www.anovum.com/publikationen/Anovum_EuroTrak_2012_UK_EuroTrak%202012.pdf

¹⁸⁴ Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, *Health Technology Assessment* 11(42).

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	<p>screening), there must be evidence from high- quality trials that the test accurately measures risk. The information that is provided about the test and its outcome must be of value and readily understood by the individual being screened; There should be evidence that the complete screening programme (test, diagnostic procedures, treatment/ intervention) is clinically, socially</p>	<p>other health professionals.</p> <p>This section misses the significant findings of other randomised controlled trials such as Mulrow 1990¹⁸⁵ and other studies and modelling of screening such as Davis et al 2007¹⁸⁶, Dawes et al 2015¹⁸⁷ and Morris et al 2013¹⁸⁸. As discussed in our response to sections 4.1 and 4.2 above, this review does not include many of the systematic reviews¹⁸⁹, randomised controlled trials¹⁹⁰ and other studies¹⁹¹ showing the benefits of hearing aids –</p>
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¹⁸⁵ Mulrow et al (1990) Quality-of-life changes and hearing impairment, a randomized trial. *Annals of Internal Medicine* 113(3), 188-94.

¹⁸⁶ Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, *Health Technology Assessment* 11(42).

¹⁸⁷ Dawes et al (2015) Hearing-aid use and long-term health outcomes: hearing handicap, mental health, social engagement, cognitive function, physical health, and mortality, *International Journal of Audiology*, early online 1-7. Available from: <http://informahealthcare.com/doi/abs/10.3109/14992027.2015.1059503?journalCode=ija>

¹⁸⁸ Morris et al (2013) An economic evaluation of screening 60- to 70-year-old adults for hearing loss. *Journal of Public Health* 35(1), 139 – 146.

¹⁸⁹ Chisolm et al (2007) A systematic review of health-related quality of life and hearing aids: final report of the American Academy of Audiology task force on the health-related quality of life benefits of amplification in adults. *Journal of American Academy of Audiology* 18, 151-183; Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, *Health Technology Assessment* 11(42); Chao and Chen (2008) Cost-effectiveness of hearing aids in the hearing-impaired elderly: a probabilistic approach. *Otology and Neurotology* 29(6), 776-83.

¹⁹⁰ Mulrow et al (1990) Quality-of-life changes and hearing impairment, a randomized trial. *Annals of Internal Medicine* 113(3), 188-94; Yueh et al (2001) Randomized trial of amplification strategies. *Archives of Otolaryngology - Head and Neck Surgery* 127(10): 1197-204; Jerger et al (1996) Comparison of conventional amplification and an assistive listening device in elderly persons. *Ear and Hearing* 17(6), 490-504.

¹⁹¹ Swan et al (2012) Health-related quality of life before and after management in adults referred to otolaryngology: a prospective national study. *Clinical Otolaryngology* 37(1), 35-43; Barton et al (2004) Comparing utility scores before and after hearing aid provision: results according to the EQ-5D, HUI3 and SF-6D. *Applied Health Economics and Health Policy* 3(2), 103-5; Appollonio et al (1996) Effects of sensory aids on the quality of life and mortality of elderly people: a multivariate analysis. *Age and Ageing* 25, 89-96; Mondelli and Souza (2012) Quality of life in elderly adults before and after hearing aid fitting. *Revista Brasileira de Otorrinolaringologia* 78(3), 49-56; Lotfi et al (2009) Quality of life improvement in hearing-impaired elderly people after wearing a hearing aid. *Archives of Iranian Medicine* 12(4), 365-70; McArdle et al (2005) The WHO-DAS II: Measuring outcomes of hearing aid intervention for adults. *Trends in Amplification* 9(3), 127-43; Mizutari et al (2013) Age-related hearing loss and the factors determining continued usage of hearing aids among elderly community-dwelling residents. *PLoS One* 8(9), e73622; National Council on the Aging (2000) The consequences of untreated hearing loss in older persons. *Head & Neck Nursing* 18(1), 12-6; Yueh et al (2010) Long-term effectiveness of screening for hearing loss: the screening for auditory impairment--which

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	<p>and ethically acceptable to health professionals and the public.</p>	<p>further randomised controlled trials would be unnecessary and may be unethical.</p> <p>Hearing loss increases with age – with prevalence rising from 42% of over 50 year olds to 71% of over 70s¹⁹². There is good evidence from a health technology assessment and economic cost modelling that screening people at the age of 65 would be the most cost effective¹⁹³.</p> <p>As stated above, there is no evidence of any risks from a screening test for hearing loss, and evidence shows it, along with the clinical pathway of diagnosis and management, are acceptable to people with hearing loss¹⁹⁴. Also as stated above, this review misses a number of screening tests and pieces of evidence. Missing tests include speech in noise tests¹⁹⁵, which can be undertaken online or over the phone, and an easy to</p>
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hearing assessment test (SAI-WHAT) randomized trial. *Journal of the American Geriatrics Society*, 58(3), 427-34; Dawes et al (2015) Hearing-aid use and long-term health outcomes: hearing handicap, mental health, social engagement, cognitive function, physical health, and mortality, *International Journal of Audiology*, early online 1-7. Available from: <http://informahealthcare.com/doi/abs/10.3109/14992027.2015.1059503?journalCode=ija>.

¹⁹² Action on Hearing Loss (2011) *Hearing Matters*, London: Action on Hearing Loss; Davis (1995) *Hearing in Adults*, London: Whurr.

¹⁹³ Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, *Health Technology Assessment* 11(42); Morris et al (2013) An economic evaluation of screening 60- to 70-year-old adults for hearing loss. *Journal of Public Health* 35(1), 139 – 146; Action on Hearing Loss / London Economics (2010) Cost benefit analysis of hearing screening for older people. Available from: www.actiononhearingloss.org.uk/supporting-you/policy-research-and-influencing/research/our-research-reports/research-reports-2010.aspx.

¹⁹⁴ Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, *Health Technology Assessment* 11(42).

¹⁹⁵ Smits (2006) How we do it; the Dutch functional hearing-screening tests by telephone and internet. Dept of Otolaryngology/Audiology, EMGO Institute, VU University Medical Centre, Amsterdam; Watson (2012) Telephone screening tests for functionally impaired hearing: current use in seven countries and development of a US version. *Journal of the American Academy of Audiology* 23, 757-767.

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		<p>use, low cost hand-held screener which uses pure tones to screen for sensorineural, conductive and mixed hearing losses at different frequencies and severities¹⁹⁶. Because it uses pure tones itself, the hand-held screener has been shown to have high negative and positive predictive values, and there was good correlation when its results were compared with full audiometric testing¹⁹⁷. It is safe and easy to use, and it was successful and popular when it was piloted by GPs¹⁹⁸. It is estimated that with bulk buying the hand-held screener would cost around £50 per unit, meaning that providing one to every GP surgery across the UK would cost around £508,000¹⁹⁹. This screening test would be effective at predicting full audiometric testing and at predicting the benefit a patient would get from hearing aids, and it would therefore be effective in a screening programme.</p> <p>The conclusion of the health technology assessment, which found that the optimal cut off for screening was 35 dB HL, and that the most effective screening test was to</p>
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¹⁹⁶ Parving et al (2008) Evaluation of a hearing screener, *Audiological Medicine* 6(2), 115-9.

¹⁹⁷ Parving et al (2008) Evaluation of a hearing screener, *Audiological Medicine* 6(2), 115-9; Davis et al (2012) Diagnosing patients with age-related hearing loss and tinnitus: supporting GP clinical engagement through innovation and pathway redesign in audiology services, *International Journal of Otolaryngology*. Available from <http://dx.doi.org/10.1155/2012/290291>.

¹⁹⁸ Parving et al (2008) Evaluation of a hearing screener, *Audiological Medicine* 6(2), 115-9; Davis et al (2012) Diagnosing patients with age-related hearing loss and tinnitus: supporting GP clinical engagement through innovation and pathway redesign in audiology services, *International Journal of Otolaryngology*. Available from <http://dx.doi.org/10.1155/2012/290291>.

¹⁹⁹ Action on Hearing Loss / London Economics (2010) Cost benefit analysis of hearing screening for older people. Available from: www.actiononhearingloss.org.uk/supporting-you/policy-research-and-influencing/research/our-research-reports/research-reports-2010.aspx.

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		ask two verified questions alongside pure tone audiometry, is also missing here ²⁰⁰ . Since that time screening tools such as the handheld screener above have been developed, which like full audiometry uses pure tones to effectively screen for hearing loss. There is therefore good evidence that screening tests are available that work well, are acceptable, and given the current effective pathway for the diagnosis and management of hearing loss, introducing such a test would improve outcomes for many people with hearing loss.
Page 19, section 5.6.	The opportunity cost of the screening programme (including testing, diagnosis and treatment, administration, training and quality assurance) should be economically balanced in relation to expenditure on medical care as a whole (i.e. value for money). Assessment against these criteria should have regard to evidence from cost benefit and/or cost effectiveness analyses and have regard to the effective use of available resource.	The hearing screening test using a hand-held screener is estimated to cost £13 per person, with full treatment around £100 ²⁰¹ . The NHS provides hearing aids and management of hearing loss at a fraction of the cost of private providers because of its bulk buying power, and (as detailed above) since the vast majority of people use and gain benefit from hearing aids once they are provided, a screening programme would be very cost effective. A detailed cost-benefit analysis, not taken into account here, has been undertaken by Action on Hearing Loss which estimates that a hearing screening programme at the age of 65 would cost £255 million over ten years but the benefits would amount to over £2 billion in that time, including avoided personal, employment,

²⁰⁰ Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, *Health Technology Assessment* 11(42).

²⁰¹ Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, *Health Technology Assessment* 11(42).

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		social and healthcare costs. This gives a benefit to cost ratio, developed in accordance with Government guidance, of more than 8:1 ²⁰² . There is strong evidence that such a screening programme would be cost effective.
Page 20, section 5.7.	All other options for managing the condition should have been considered (e.g. improving treatment, providing other services), to ensure that no more cost- effective intervention could be introduced or current interventions increased within the resources available.	As stated above in response to Summary and sections 3.5 and 4.3, improvements to pathways, increased access and more flexibility to deal with increased numbers of patients have already been introduced across many areas of the UK. Despite this, most people who have hearing loss and could benefit from interventions such as hearing aids still do not seek help. As detailed in section 5.6 of this review and in our response to section 5.6 above, introducing hearing screening would be cost effective and would encourage more people to seek help.
Page 20, sections 5.8, 5.9 and 5.10.	There should be a plan for managing and monitoring the screening programme and an agreed set of quality assurance standards; Adequate staffing and facilities for testing, diagnosis, treatment and programme management should be available prior to the commencement of the screening programme; Evidence-based information, explaining the consequences of testing,	Quality standards and appropriate pathways are already in place that would be well suited to the introduction of a screening programme, along with flexible services that can respond well to increased numbers of patients, as stated above in our response to section 3.5. Services already provide information, support and advice to patients about the consequences of testing and the choices they can make, so this would continue under any

²⁰² Action on Hearing Loss / London Economics (2010) Cost benefit analysis of hearing screening for older people. Available from: www.actiononhearingloss.org.uk/supporting-you/policy-research-and-influencing/research/our-research-reports/research-reports-2010.aspx.

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	investigation and treatment, should be made available to potential participants to assist them in making an informed choice.	screening programme.
Page 20, section 6.	Conclusions	<p>There is clear evidence from a health technology assessment, randomised controlled trials and systematic reviews, and from recent changes to service delivery in the UK that is not taken into account throughout this review. This evidence, detailed throughout this response, fulfils the criteria listed in this conclusion. The age at which screening should take place has been investigated, with screening at 65 found to be the most cost effective and beneficial. The optimal cut off for screening is 35 dB HL and the most effective screening test is to ask two verified questions alongside pure tone audiometry. The long term benefits of hearing aids, including in improving quality of life, has been proven by numerous robust studies, detailed above, and evidence from the changes made to services in areas of the UK show that effective and flexible diagnostic pathways have the potential to deal effectively with increasing numbers of patients seeking help.</p> <p>Although the frequency of screening is not mentioned in the rest of this review, it is mentioned in the conclusions section. Since hearing aids last around 3-5 years, and most people's hearing does deteriorate as they age, it is</p>

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		<p>recommended that people are invited back for another hearing test every three years after the age of 65²⁰³.</p> <p>There is clear evidence that early intervention improves outcomes for people with hearing loss and that hearing aids work, are acceptable to people with hearing loss and bring major benefits. As the national government strategy the Action Plan on Hearing Loss²⁰⁴ has stated, unaddressed age-related hearing loss is a major public health issue which will cause increasing issues for people unless something is done. A hearing screening programme would encourage people to get the help they need from hearing aids and other support, ensure they are made aware of the impacts of hearing loss and the effectiveness of the interventions available, and ultimately will lead to thousands more people being able to communicate, manage and reduce the risk of other health conditions, and remain active, independent and healthy.</p>
Page 21, section 6.2.	Implications for research	<p>A large amount of evidence, detailed in our response, has not been included in this review. We believe this evidence is sufficient to fulfil the criteria and introduce screening for hearing loss in adults over 65 years.</p>

²⁰³ Department of Health (2012) Adult hearing AQP implementation pack, London: Department of Health; Davis et al (2007) Acceptability, benefit and costs of early screening for hearing disability: a study of potential screening tests and models, *Health Technology Assessment* 11(42).

²⁰⁴ The Department of Health and NHS England (2015) The Action Plan on Hearing Loss. London: Department of Health and NHS England. Available from: <http://www.england.nhs.uk/2015/03/23/hearing-loss/>.

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		<p>Governments across the UK have already made tackling hearing loss and improving its diagnosis a priority²⁰⁵, and Public Health England has committed to strengthen the evidence base on the diagnosis and management of hearing loss²⁰⁶. Following this consultation, if the National Screening Committee does not believe existing evidence justifies a change in policy, it must provide the reasons why and highlight specifically where it believes additional evidence is needed. This will allow Public Health England and the wider government to meet its commitments in the Action Plan on Hearing Loss by commissioning or securing any relevant research and ensuring that the growing challenge of hearing loss is met.</p>
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²⁰⁵ The Department of Health and NHS England (2015) The Action Plan on Hearing Loss. London: Department of Health and NHS England. Available from: <http://www.england.nhs.uk/2015/03/23/hearing-loss/>; The Scottish Government (2014) See hear: a strategic framework for meeting the needs of people with a sensory impairment in Scotland, Edinburgh: Scottish Government; Department of Health, Social Services and Public Safety (2012) Physical and sensory disability strategy and action plan 2012-2015, Belfast: Department of Health, Social Services and Public Safety.

²⁰⁶ The Department of Health and NHS England (2015) The Action Plan on Hearing Loss. London: Department of Health and NHS England. Available from: <http://www.england.nhs.uk/2015/03/23/hearing-loss/>.