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Adult Rehabilitation Services: BSA Information for Service Commissioners in England

Hearing aid provision is one element of adult auditory rehabilitation, with the overall objective of meeting the social and communication needs of individual patients. For further information, attention is drawn to BSA Practice Guidance: *Common Principles of Rehabilitation for Adults in Audiology Services, October 2016*. The overview of evidence-based information presented below, relates to hearing aid provision.

Hearing Aid Candidacy

Identification of successful candidates for hearing aids is multifactorial, requiring Audiology professionals to make judgements based upon each patient's specific hearing needs, motivation, lifestyle, the audiogram and other factors such as presence of tinnitus. Professionals make such complex judgements mindful of the potential benefit that can be afforded by hearing aid technology complemented by other elements of hearing rehabilitation. Given this, the application of an audiometric 'fence' to ration this intervention is regarded as a crude and ineffective starting point - in practice, the profile of the hearing loss at different frequencies, the profile of loss for both ears and hearing at other frequencies are also considered when determining suitability for hearing aid fitting.

The BSA believes that the inherently complex decision-making on amplification should be left to the well-informed professional taking a holistic approach. It is well established and agreed that the proportion of the hearing-impaired population using hearing aids (one-third) is well below the level who would gain benefit (even when defined by audiometric levels). This discrepancy in part, may relate to under-referral. However, it also likely relates to an aversion to hearing aid use (associated with the stigma of hearing loss and hearing aid use) and failure to recognize hearing difficulties, particularly the impact on others. In short, hearing impaired adults presenting to Audiologists have demonstrated that they are sufficiently motivated by seeking help for their hearing difficulties and consenting to referral – use of a patient questionnaire tool is therefore unnecessary to identify need of access to an Audiologists assessment for this intervention.



Health Benefits Afforded by Hearing Aids. Evidence supporting amplification is presented in the reference list (below), providing a sample of key items from the scientific literature, pertinent to the commissioning decisions. Material has been summarised under the following headings relevant to decision-making relating to effective use of health care resources:

- i) **Benefits of early amplification:** It is well recognised that providing hearing aids to someone early is more beneficial than waiting. A UK Health Technology Assessment (1) reported that *‘those identified early had greater benefit than those of the same age and hearing impairment who were fitted with hearing aids later’* (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 regarded as preventing more disabling hearing impairment if hearing aids were provided many years later – as would be the case if the proposal were implemented. There is a clear secondary impact too; withdrawal of hearing aid fitting to those with mild hearing loss would impact adversely on those ultimately presenting for first hearing aid fitting later in life with severe losses.

- ii) **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). In terms of scale, we know that hearing impairment is ranked thirteenth in the top 20 health conditions identified in the WHO Global Burden of Disease initiative (7), and is the third leading cause of years living with disease (8).

Additionally, we would like to make the following cautionary observation regarding use of generic quality of life questionnaire tools, should you be considering their outcomes and use: One of the key issues in audiology is that the wider effects of a hearing loss, especially the loss in communication ability or social confidence, are not well represented by some



popular primary generic questionnaires of health utility. For instance, none of the five questions in the EQ-5D tool relate to communication; one can be totally deaf and score exactly the same as someone with perfect hearing. We contend that the low score on this scale is due to an insensitivity of the scale rather than a low importance to people (9).

- iii) **Strength and quality of evidence.** Most randomised controlled trials (RCTs) of hearing aids compare their features or fittings (10). 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 research funding body would support 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. Nevertheless, three available RCTs (11, 12 and more recently 13), have demonstrated clear benefits of hearing aids to hearing-related quality of life. This has confirmed more recently in a Cochrane Review of hearing aids in mild to moderate hearing loss (14, 15), showing "a large clinically important effect" currently under review, alongside evidence of "large benefit of hearing aids on listening ability".

Aside from the research evidence base, we believe that it is 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 Benefit Profile (16) should be available from the local services. A recent large study of hearing aid patients (n=1052) in a UK audiology service using a user-centric outcome measure (COSI: Client-Orientated Scale of Improvement) reported improvements resulting from use of hearing aids in 81-95% of user-nominated situations (n=2465) (17). Crucially, there was no difference in reported benefits from those with mild or moderate hearing losses – this UK sourced evidence does not support a commissioning decision to limit access based upon level of hearing loss.

- iv) **Health economic measures.** The cost effectiveness ratio (or cost per Quality Adjusted Life Year, QALY) is an equation used commonly in health economics to determine and compare



cost benefits of interventions. It is the ratio of costs to benefits, where the benefits are measured in QALYs. Where a comparison is made with an existing intervention an incremental cost effectiveness ratio (ICER) can be calculated. So for the intervention of hearing aid provision, if the base case is no hearing aid provision (or any other alternatives) then the ICER for bilateral hearing aid provision is c£1300 (2012 data)*. Interventions with ICER estimates up to £20,000-£30,000 are considered acceptable by NICE (18), so on this basis hearing aid provision is very cost effective.

*calculated from supplementary data table 6 presented with reference (19).

Opportunity Cost is the cost per head of population who will potentially benefit from the development. The tariff costs for hearing aid provision and support, familiar in England, can be used here and are low by comparison with annual costs of other interventions. For illustration, a non-generic drug to manage chronic health conditions would typically cost £1300-2000 per year.

- v) **Prevention of future illness.** There is increasing evidence of an independent association between hearing loss, declining cognitive function (20) and dementia (21, 22). Hearing aid use has been associated with better cognition (23) 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. This is having an important influence on the research field: it has catalyzed it into a 'hot topic', and many groups are now studying hearing loss and cognition.

Given the scale of impact and burden of dementia on individuals, their carers and society, as well as its current prominence in the health-care planning agenda, it would be quite imprudent to limit an intervention that has a positive impact on communication ability in the elderly.

- vi) **Benefits for people with existing health problems.** Amplification has a positive impact for people with existing health conditions such as depression (12) and dementia (24). 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) optimise outcomes of other healthcare interventions.

vii) **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 (25) and those from lower socio-economic groups (26). As a group they

may be expected to predominate in areas of deprivation. This provides for an underlying health inequality associated with hearing loss. At a local level, the mix of people accessing free NHS hearing aid services is further weighted towards those who would be unable to purchase private hearing aids. Limiting access to NHS hearing aids would leave individuals faced with the option of unmanaged hearing loss with adverse impact on their communication, health and well-being, or payment for a private hearing aid. Withdrawal of NHS free hearing aids services would increase inequalities and also lead to inequity in health.

Inequalities would be a particular issue for the local population engaged in industrial employment. Lifetime noise exposure at work has been established for decades as a primary factor in hearing loss (27). In short, ensuring an adequate provision of hearing aids to a local population will help address health inequalities associated with hearing loss.

viii) **Delivering national and local requirements/targets.**

Hearing impairment is ranked thirteenth in the health conditions identified in the WHO Global Burden of Disease initiative, and is the third leading cause of years living with disease (8). It should be regarded as a prominent health condition included in local health priorities. Reflecting this, at a national level NHS England and the Department of Health has produced a guidance document *Action Plan on Hearing Loss* (28). This describes the impact of hearing



loss, challenges presented and sets out policy objectives to address. The document provides a link to national/political objectives eg, *'The government's ambition is to support older people to stay independent and in their homes for longer avoiding unnecessary admission to hospital or entry into care. Hearing is a major factor in maintaining independence and achieving healthy ageing'*. Commissioning decisions should reflect this national policy guidance.

Similarly, at a local level there will likely be health and local government policies/initiatives that would be compromised by rationing of hearing aids. These might relate to the health and well-being of the older population; particularly with reference to allowing individuals to live independently.

ix) Specific evidence on the benefits of binaural hearing and bilateral hearing aid fitting

Occasionally, rationing of care has been suggested through proposals that patients be fitted with one hearing aid rather than two. The BSA has developed specific guidance on the matter of bilateral hearing aid provision. This is provided as a separate document (29). We believe that commissioners should not compromise the benefits of binaural hearing and outcomes for patients by limiting fitting of one hearing aid where an Audiologist considers that two are indicated.

There are two items that will shortly be added to the literature that are highly pertinent to commissioning decisions. Firstly, a Cochrane systematic review is anticipated shortly on hearing aids for mild to moderate hearing loss in adults (14). Secondly, the National Institute of Health and Care Excellence is currently developing guidance on Hearing Loss in Adults, due for release in 2018. So, aside from evidence presented above, it therefore appears premature for commissioners to make profound decisions on withdrawing service provision (effectively rationing care) in advance of seminal evidence-based guidance on the topic.

Edited by John Day

BSA Trustee on behalf of the BSA

The document reflects input from a number of BSA members, but in particular Mel Ferguson and Michael Akeroyd.



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