

Prevention of Hearing Impairment

Aims and Strategies



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1. Definition and grades of Hearing Impairment

Hearing impairment is defined by WHO (WHO 1986, WHO 1991¹) in the table below. Deafness is defined as profound bilateral hearing impairment. These grades were originally defined (WHO 1986) using performance tests so that they would be applicable in countries, which lacked general access to audiometric technology. The performance tests and their equivalent audiometric values and broad recommendations for rehabilitation are also given in the following table.

Degrees or Grades of Hearing Impairment

Grade of impairment	Corresponding audiometric ISO value ²	Performance	1. Comments 2. Recommendations
0 No impairment	25 dB HL or better (better ear)	No or very slight hearing problems. Able to hear whispers.	1. People with unilateral losses may experience hearing problems even if better ear normal 2. Counselling for unilateral loss. Lip reading useful.
1 Slight impairment	26 - 40 dB HL (better ear)	Able to hear and repeat words spoken in normal voice at 1 metre.	2. Counselling. Hearing aids may be useful in quiet environments. Lip reading useful.
2 Moderate impairment	41 - 60 dB HL (better ear)	Able to hear and repeat words using raised voice at 1 metre.	2. Counselling. Hearing aids usually recommended. Lip reading useful.
3 Severe impairment	61 - 80 dB HL (better ear)	Able to hear some words when shouted or with a raised voice into better ear.	2. Counselling. Hearing aids needed. If no hearing aids available, lip-reading and signing could be helpful.
4 Profound impairment including deafness	81 dB HL or greater (better ear)	Unable to hear and understand even a shouted or raised voice.	1. Spoken speech may be distorted. 2. Counselling. Hearing aids may help understanding words. Additional rehabilitation needed. Lipreading and signing essential.

Note that alternative classifications are in use, such as that from the British Association of Teachers of the Deaf (1981). This gives: 0-20 dBHL: normal hearing; 20-40 dBHL: slight hearing loss, listening difficulties in noisy situations; 40-70 dBHL: moderate hearing loss, difficulties hearing normal conversation; 70-95 dBHL: severe hearing loss, awareness of speech whilst wearing hearing aids; >95 dBHL: profound hearing loss, limited and often distorted perception of speech sounds even with hearing aids.

¹ WHO (1986): Report by the Director General. Prevention of Deafness and Hearing Impairment. A39/14. 27 March 1986. World Health Organization, Geneva.

WHO (1991): Report of the Informal Working Group on Prevention of Deafness and Hearing Impairment: Programme Planning. Geneva 18-21 June 1991. WHO/PDH/91.1 World Health Organization, Geneva.

² Average hearing threshold at 0.5, 1, 2, 4 kHz for better ear tested without a hearing aid. It should be noted that the shape of the hearing impairment curve also influences the degree of disability.



2. Present Situation

- 2.1 The current (provisional) WHO estimate states that there are at present 250 million persons with disabling hearing impairment³ in the world. Two-thirds of these people live in developing countries.
- 2.2 It is likely that at least 50% of these hearing losses can be prevented by presently available primary, secondary or tertiary methods.
- 2.3 There is a severe shortage of accurate, population-based data on the incidence and prevalence of hearing impairment and its causes, especially in developing countries. This information is particularly needed to measure the burden of deafness and hearing impairment in economic and quality of life terms.
- 2.4 The most common causes of hearing impairment worldwide are otitis media, genetic factors (including consanguinity – intra-family marriages) and ageing. Other important causes are infections during pregnancy (e.g. rubella, syphilis), perinatal factors, other infections (e.g. meningitis, measles, mumps, cerebral malaria), ototoxic drugs, excessive noise and trauma. Excessive noise is recognised to be an important cause of hearing loss in young people and adults.
- 2.5 Chronic suppurative otitis media is the most common cause of mild and moderate hearing impairment in children in developing countries and is related to poor hygiene and poor socio-economic conditions.
- 2.6 Hearing impairment is particularly serious in infants and young children because it can lead to communication difficulties, delayed educational progress, social isolation & stigmatisation. This is made worse by late diagnosis. However, early intervention in children provides the largest opportunity to reduce the lifetime burden of deafness and hearing impairment.

2.7 The largest numbers with hearing impairment in the population stratified according to age are the elderly. Because of the ageing of populations, these numbers are increasing rapidly, also in developing countries.

2.8 Most developing countries do not have national programmes for the prevention of deafness and hearing impairment. Many also lack primary ear and hearing care activities, adequate screening programmes, referral and rehabilitation services, audiology services, and sufficient numbers of trained personnel at all levels especially in rural areas.

3. Aims

To reduce the burden of hearing impairment, especially in children, in developing countries in which CBM works, by means of primary, secondary and tertiary prevention.

4. Objectives

- 4.1 To at least double the number of partners who target the prevention and management of ear disease, especially otitis media and hearing impairment in developing countries (projects should include generating public awareness, a public health approach and outreach activities).
- 4.2 To collaborate and harmonise with CBM's Advisory Working Group (AWG) on Education of the Deaf and Hard of Hearing People and the working group on Audiology and Speech Therapy, and other AWGs as appropriate for the development of concepts and strategies for the prevention of hearing impairment.
- 4.3 To follow and promote the WHO policies & guidelines on prevention of hearing impairment including the WHO Guidelines on Hearing Aids and Services for developing countries

³ DEFINITIONS:

Disabling hearing impairment in adults should be defined as a permanent unaided hearing threshold level for the better ear of 41 dB or greater; for this purpose the "hearing threshold level" is to be taken as the better ear average hearing threshold level for the four frequencies 0.5, 1, 2, and 4 kHz. WHO is currently considering changing the level of 41dB to 31 dB."

Disabling hearing impairment in children under the age of 15 years should be defined as a permanent unaided hearing threshold level for the better ear of 31 dB or greater; for this purpose the "hearing threshold level" is to be taken as the better ear average hearing threshold level for the four frequencies 0.5, 1, 2, and 4 kHz."

FROM: Report of the Informal Working Group on Prevention of Deafness and Hearing Impairment Programme Planning WHO, Geneva, 1991. With adaptations from Report of the First Informal Consultation on Future Programme Developments for the Prevention of Deafness and Hearing Impairment, World Health Organization, Geneva, 23-24 January 1997, WHO/DPHI/97.3..



- 4.4 CBM should continue to support and promote, in collaboration with WHO, the new initiative of WW HEARING Care for developing countries.
- 4.5 To increase the number of CBM-supported projects that include the collection of data for measurement of the burden, in order to prioritise strategies for prevention and measure the costs of disability and the benefits of prevention in the projects and countries concerned.

5. Priorities for CBM

- 5.1 Prevention and management of otitis media
- 5.2 Provision of affordable hearing aids in developing countries

6. Strategies

- 6.1 To develop model projects in every region for the prevention of hearing impairment and implement them through CBM's partners. Each project would demonstrate some or all of the activities set out in the next section. Their content would depend on the priorities within the region, and should provide regional training.
- 6.2 To support training in public health otology and audiology, where possible in the region of the countries concerned.
- 6.3 To develop and implement guidelines and tools for evaluation of CBM projects for prevention of hearing impairment.
- 6.4 To encourage and support the development of sustainable national programmes for prevention of hearing impairment.
- 6.5 To continue the work of the advisory working group for prevention of hearing impairment through annual meetings for the development and review of the CBM policy, strategies and standard lists of supplies and equipment for the prevention of hearing impairment.
- 6.6 To update regularly the concepts, strategies and priorities developed by the advisory working group for the prevention of hearing impairment, particularly through primary health care, and to implement these through CBM's medical, CBR and educational programmes.

7. Activities

- 7.1 Some of the components have specific linkages with Community Based Rehabilitation programmes, audiological diagnostic and rehabilitation services including education at the earliest ages.
- 7.2 National or local population-based surveys of the prevalence and causes of hearing impairment.
- 7.3 Public awareness campaigns, health education, health promotion and community participation programmes for the prevention of hearing impairment.
- 7.4 Organisation and finance of immunisation programmes (like rubella, MMR and meningitis) according to the WHO guidelines if feasible and appropriate.
- 7.5 Early identification through screening and referral to the appropriate services and early intervention for children with hearing impairment.
- 7.6 Primary ear and hearing care integrated with primary health care and/or Community Based Rehabilitation if available.
- 7.7 Otological and audiological referral services for the diagnosis, treatment and rehabilitation of people with hearing impairment.
- 7.8 Training curricula and materials, workshops and courses for skills training of health workers, particularly in primary health care, teachers, CBR workers and volunteers.
- 7.9 Hearing conservation awareness programmes to prevent occupational, environmental and recreational causes of noise-induced hearing loss.
- 7.10 Collaboration with other programmes that contribute to the prevention of hearing impairment, such as programmes for immunisation, personal hygiene and sanitation, maternal and child health, rational use of ototoxic drugs, and genetic counselling.
- 7.11 Encouragement and support to the development of sustainable national programmes for prevention of hearing impairment.