FUTURE PROGRAMME DEVELOPMENTS FOR PREVENTION OF DEAFNESS AND HEARING IMPAIRMENT

Report of the 4th Informal Consultation

World Health Organization
Prevention of Blindness and Deafness (PBD)
Noncommunicable Diseases and Mental Health (NMH)
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1 INTRODUCTION

This was the fourth annual planning meeting for WHO activities in the field of prevention of deafness and hearing impairment. The meetings are a forum for programme managers, heads of collaborating centres, representatives of concerned NGOs and other key advisers. The purpose and theme for this meeting was to report and review programme activities and achievements and to consider priorities for the new decade under the headings of epidemiology, new strategies for prevention, developing national programmes, raising awareness, and mobilizing resources. The meeting also attempted to identify opportunities for collaboration.

The meeting was opened by Dr Y Suzuki, Executive Director of the Cluster for Mental Health and Social Change (HSC). The Chairperson appointed was Dr G. Bock and the Rapporteur was Prof C. Prescott.
2 OVERVIEW OF WHO ACTIVITIES FOR PREVENTION OF DEAFNESS AND HEARING IMPAIRMENT

2.1 Review of WHO activities and priorities for programme development

2.1.1 Current strategies and Objectives and Achievements in 1999

The strategies for prevention of deafness and hearing impairment (PDH) form part of the general strategies for the Department of Disability Prevention and Rehabilitation which includes policy development, advocacy/awareness, development of evidence-based, user-friendly intervention strategies, community-oriented interventions within primary health care, monitoring, surveillance, evaluation and research, and creation of global scientific / partnership networks, including with non-governmental organizations (NGOs).

The current objectives of WHO activities for prevention of deafness and hearing impairment are shown in Figure 1.

For the first objective, 1999 saw official production of The Ear And Hearing Disorders Survey Protocol (EHDSP) and software. This includes sections on survey methods, an Ear Examination Form, coding instructions to complete the form, analysis software, and a software manual. 81 copies have already been distributed to WHO Regional Offices, WHO Collaborating Centres, NGOs in official relation, others intending to conduct a survey. PDH has undertaken to give advice on survey design, sample size, test methodologies, and data analysis. During 2000, it is planned to continue assistance with conduct & analysis of the SEARO multi-centre study, and to encourage, advise & assist other countries to conduct surveys. The protocol and software will continue to be distributed and followed up and consideration will be given to further development of the protocol, methods of data gathering and formation of the database.

For the second objective, the guidelines on the prevention of deafness and hearing impairment from ototoxic drugs are planned to be finalised and disseminated and their application will be evaluated in selected countries.

If funding is identified, the third objective will be addressed by commencing development of draft guidelines on reducing noise-induced hearing loss in population groups at risk.

The fourth objective has been strengthened by the 1998 Primary Ear and Hearing Care Workshop. The report for this workshop will be distributed during 2000. The next phase will be the development of model training materials and development of model in-country primary ear and hearing care projects.

A desk review of Treatment of Chronic Suppurative Otitis Media (jointly with Child and Adolescent Health, CAH) will help to further objective 5. The next step will be the development of guidelines on prevention of hearing impairment from chronic otitis media if funds are available.

To address Objective 6 a Hearing Aids Working Group was set up and coordinated by Professor A. Parving, Head of the WHO Collaborating Centre in Copenhagen. The group’s aim is to develop guidelines for appropriate, affordable hearing aids and services for developing countries. Two sub-groups will address technical requirements, and delivery and services. Following informal meetings and contacts, a full meeting was held from 15-16 February 2000. It is intended that production of the guidelines will lead to meetings with manufacturers associations.

Objective 7 was pushed forward in South India, when a workshop for managers of 4 projects on prevention of deafness and hearing impairment was conducted. This event was attended by

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1. To assess magnitude and major causes of hearing impairment in defined populations.
2. To prevent improper use of ototoxic drugs.
3. To reduce noise-induced hearing loss in population groups at risk.
4. To encourage development of basic ear care as part of primary health care.
5. To improve the early identification and management of major hearing disorders.
6. To encourage development of appropriate technology for assessment and management of hearing impairment.
7. To provide technical cooperation to Member States for national programme development.
8. To provide administrative and managerial support for global programme development.

Figure 1: Current objectives of WHO activities for prevention of deafness and hearing impairment
representatives from the project investigators; (1) Vellore - Christian Medical College, (2) Tiruchirapalli - Holy Cross Service Society, (3) Bangalore - St John's Medical College, and (4) Bangalore - Institute of Speech & Hearing.

A visit was made to Libya to advise on a national survey and setting up a national programme. The main recommendations from the visit were to conduct a national survey, set up a national programme for prevention and rehabilitation and screening for school children, strengthen special education, and focus on human resource development.

Invited presentations were given at:-
- Inter-American Association of Pediatric Oto-rhino-laryngology, Palm Desert, California, USA, April
- European Federation of Audiological Societies, Oulu, Finland, May.
- Epidemiology and research steering committee, Vaccines & Biologicals, WHO (section on CRS)
- Xth International Symposium on Audiological Medicine, Manchester, UK, July.
- London School of Hygiene and Tropical Medicine, Department of Infectious and Tropical Diseases, November
- WHO Meeting on Preventing Congenital Rubella Syndrome (CRS), Department of Vaccines and Biologicals, January, 2000

Other meetings attended included:
- CBM Advisory Working Groups on prevention of hearing impairment (Chairperson), CBM, Bensheim, Germany, July,
- Hearing International Executive Board and AGM, & Seminar, Kyoto, Japan (Observer)

A publication on "WHO Activities for the Prevention of Deafness and Hearing Impairment" was written for the IFHOH Journal, October 1999.

The programme had an intern for 3 months in 1999, a Masters in Public Health Student from University of Michigan, USA. She conducted a literature review on "Genetic Causes of deafness and hearing impairment in developing countries, with special reference to the role of consanguineous marriages".

The Workplan for the coming biennium (2000-2001) was presented together with the aim and strategic target for the programme (see annex 4).

2.2 Looking back at the last 10 years, looking forward to the next 10 years.

2.2.1 History of WHO activities for prevention of deafness and hearing impairment

The early gestation of the WHO PDH programme occurred during the mid 1980s when several far-thinking people challenged the profession to emulate the lead taken in prevention of blindness. A particular stimulus to action was the XVII International Conference of Audiology at Santa Barbara, California, USA in 1984.

In 1985 the first resolution to deal with this subject was passed by the World Health Assembly and recommended WHO in collaboration with governments and appropriate nongovernmental organizations, to assess the extent, causes and consequences of hearing impairment and deafness in all countries, and to make proposals for strengthening measures of prevention and treatment. This led to a detailed report by the Director-General of WHO, which assessed the global prevalence of moderate or worse hearing impairment to be 42 million persons. During this period the first WHO collaborating centre on prevention of deafness and hearing impairment was established in Bangkok, followed later by centres in Malmo, Sweden, in Liverpool, UK, in Jakarta, Indonesia, and in Copenhagen, Denmark.

In 1987, the International Federation of Oto-Rhino-Laryngological Societies (IFOS) was recognized to have official relations with WHO. An IFOS committee was created to deal with the worldwide prevention of hearing impairment, and this body became the multi-disciplinary International Agency for Promotion of Ear Care (IAPEC) in 1989. In 1993, IAPEC was replaced by Hearing International (HI). At present WHO also has official relations with the International Association for Logopaedics and Phoniatrics and has links with organizations such as HI, as well as with the International

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1 Prevention of hearing impairment and deafness, 1985. Resolution of the 36th World Health Assembly, WHA38.19:
Society of Audiology, International Association of Physicians in Audiology, the International Agency against Avoidable Disablement (IMPACT) and the International Federation for Hard of Hearing People.

Dr Thylefors had been appointed acting director of the Programme for prevention of deafness and hearing impairment, and in 1991 a seminal report by an informal working group addressed needs and opportunities in this field, especially the needs for more accurate epidemiological data and interventions at the primary level through primary ear care, and the opportunities for prevention. It was concluded that approximately 50% of the burden of deafness and hearing impairment is preventable with currently available interventions, and a series of informal consultations by experts was commenced in the series on “strategies for prevention”. Workshops and other activities commenced in the WHO regions, starting in the South East Asia Region, and followed by the Eastern Mediterranean, Western Pacific and African Regions of WHO.

New global prevalence estimates of 120 million people worldwide with disabling (moderate or worse) hearing loss in the better ear were incorporated into a new resolution on Prevention of Hearing Impairment, which was passed by the World Health Assembly in 1995. This sensitised WHO and others to the extent of the problem and promoted an agenda for action within WHO. The coordinating programme in WHO Geneva was strengthened with the appointment of dedicated staff members, first Dr Suzuki, followed by Dr Smith and by the mobilization of external funding especially from agencies such as the Christoffel-Blindenmission. These staff members commenced and developed respectively a standard protocol for population-based surveys.

2.2.2 Future needs for resource mobilization.

Fund raising needs to be increased by interesting other donors such as community service organizations (e.g., Lions, Rotary, Giants, Elks). A donors meeting could be held to encourage resource mobilization.

More professional staff are needed in Geneva, possibly funded by particular countries & non-governmental organizations. It would be useful to include a health economist – or else strengthen liaison with another group with such expertise. A 'critical mass' of staff is needed which can be built upon.

2.2.3 Future needs for programme management

The programme should integrate more clearly into general WHO priorities and deafness should be dealt with as part of the whole person. Stronger cross-sector collaboration should be implemented and closer relationships should be developed with more regional offices. If funds become available, the standing expert advisory group should be rejuvenated and formalised. A further Resolution for the World Health Assembly should be considered.

2.2.4 Future needs for Programme Development

Knowledge about prevalence needs to be re-evaluated and better, standardised, epidemiological figures obtained that take into account the growing and ageing global population. Repeat studies could

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8 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.
9 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 reference in footnote 3 with adaptations from reference in footnote 2.


show the effects of this rapidly changing situation; some studies can also gather data continuously as in cohort studies. A lower cut-off figure than 41db (probably 26dB or greater) should be used in the definition of disabling hearing impairment (see footnote 5) should be considered since persons with mild hearing loss also have problems. Inclusion of such persons would substantially increase the prevalence.

Not only the level but also causes and consequences of hearing disability need to be evaluated, the quality of life and the social impairment of hearing loss. This includes assessing the acoustic and other environments in which the user operates and investigating the anthropology of hearing loss. At present we place the onus of improving the disability on the hearing impaired person. However, changing the acoustic environment of classrooms, transport locations (e.g. airports, stations), dwelling places and workplaces may improve the situation. Studies should be done to determine if changes to these environments can reduce the burden of hearing loss and, if so, guidelines should be developed. Such changes should diminish global costs of hearing loss and would benefit all.

The economic burden of hearing loss needs to be determined including the costs and cost-effectiveness of interventions and the savings from prevention. "Deafness DALYs" would be useful to determine. This type of economic information would be useful at all levels – global, regional, national and district. Can prevention of hearing loss be demonstrated to be a good investment? We also need to develop an inventory of global activity, e.g. currently there is little knowledge of non-Anglophone groups, or of many nation-to-nation efforts.

Guidelines need to be developed and published on prevention of deafness and hearing impairment from Ototoxicity, Noise, and on Primary ear and hearing care and Hearing Aids and services development for developing communities and countries. An evidence-based approach is nowadays required and this may sometimes be difficult. The guidelines on Hearing aids and services are currently being developed and should be able to assist persons with hearing loss due to chronic suppurative otitis media, age, and various sensori-neural losses. A needs assessment and delivery systems, including mould making and hearing aid delivery need to be put in place.

Training in Public Health otology must be promoted and implemented and this will increase the mass of knowledgeable workers.

All these tasks should come together in the establishment of regional and national programmes starting with the undertaking of pilot preventative projects and the development of innovative management procedures and the development of regionally appropriate protocols. New types of partnerships should be developed to address this which bring together science, knowledge and grass-roots movements. There could be a role for one or more further Collaborating Centres in these activities.

Finally, it should be emphasised that persons with hearing loss should be involved in these issues because they are effective advocates for raising awareness about them and helping to make the case convincingly.

* Disability-adjusted life years.
3 WHO ACTIVITIES FOR THE PREVENTION OF DEAFNESS AND HEARING IMPAIRMENT: PRIORITIES FOR THE NEXT TEN YEARS

This was the key theme of the meeting and small group discussions were set up following the keynote presentation. The group names are shown in figure 2 and their proposed topics for discussion are listed in Annex 5. The groups were not confined to these issues, and in addition, were asked to discuss various cross-cutting issues including setting strategic targets, training needs, and research needs. The group discussions were followed by plenary presentations and discussion to formulate the conclusions and recommendations of the meeting.

Group 1: Epidemiology of deafness and hearing impairment; determining costs of hearing loss and benefits of prevention
Group 2: Identifying new strategies for prevention
Group 3: How should national programmes be developed
Group 4: Raising awareness about deafness and hearing impairment
Group 5: Resource mobilisation

Cross-cutting issues:
- Setting strategic targets
- Training needs
- Research needs

Figure 2: Small discussion groups

4 OPPORTUNITIES FOR COLLABORATION

4.1 Other WHO Programmes

4.1.1 Assessment and management of ear infections in the Integrated Management of Childhood Illnesses

Standard clinical guidelines follow the traditional route of complete examination of all signs and symptoms, preliminary diagnosis, laboratory examination, differential and final diagnosis, treatment, and advice for follow-up.

The approach of the WHO Integrated Management of Childhood Illnesses ("IMCI") uses a more focused assessment. At the first level outpatient facility, this includes identifying danger signs, main symptoms, and nutritional and immunization status. The child's condition is then classified according to the need to refer, specific treatment, and home management, and interventions are colour-coded according to these 3 options. Guidelines for follow-up, referral, and counselling caretakers are included.

These principles are followed for ear problems. If the answer is "yes" to the question "Does the child have an ear problem?" questions such as "Is there ear pain", "...ear discharge", "...for how long?" are asked and the health worker is instructed to look and feel for pus draining from the ear, and for a tender swelling behind the ear. Conditions are classified into acute, chronic or no ear infection with their definitions, and treatment and other instructions given for each option. For example, management for "chronic ear infections" is stated to be "dry the ear by wicking" and "follow-up in 5 days". Treatment options link up to the way to give particular antibiotics and teaching the mother to give oral antibiotics and other drugs and other forms of basic treatment at home. Separate boxes give instructions on what to do at follow-up. Thus for chronic ear infection this is "check that the mother is wicking the ear correctly, encourage her to continue".

Recent evidence of the effectiveness of some antibiotics in treatment of chronic suppurative otitis media is forcing a re-appraisal of the IMCI guidelines for this condition. Discussion after the presentation focused on whether otitis media can be diagnosed without otoscopy. However, according to the IMCI guidelines, countries can choose whether or not to include otoscopy in their basic level skills and some of the poorest countries choose not to include it.
4.1.2 Community Noise Guidelines

Noise is unwanted sound and is the most important of all interruptions because it interrupts or even breaks our own thoughts\(^9\). About 20% of the population in OECD countries is exposed to significant community noise levels (see figure 3). In developing countries, the situation appears worse although less well documented. For example, in big cities in India, Pakistan, Argentina, and Brazil traffic noise of 100dBA is found at the kerbside. Levels of 150dBA have been measured during festivals. In Karachi 33% of rickshaw drivers, 57% of shopkeepers in a busy bazaar, and 83% of traffic policeman have noise-induced hearing loss. In some cities in India 2.5% of the population showed persistent sensori-neural hearing loss due to exposure to toy weapons and firecrackers.

The Guidelines for Community Noise\(^{10}\) cover noise and health (basic facts, global situation, role of guidelines and standards), health-based guidelines, noise assessment, and noise management. Their aims are shown in Figure 4. The guidelines relate to exposure-response relationships or sound levels based on epidemiological or environment-related data. Guideline values for community noise in various environments are given in the guidelines and have been published elsewhere\(^{11}\). Community-noise standards are sound levels promulgated through legislation in a country or community and relate to issues of technical feasibility, costs of compliance, prevailing exposure levels, and social, economic and cultural conditions.

For a calculation of noise-induced hearing impairment in populations exposed to continuous, intermittent or impulse noise during working hours, the guidelines refer to the ISO standard 1999\(^{12}\). The method can also be used for environmental and leisure time noise exposure although there is a lack of large-scale epidemiological studies on some aspects of this.

Control of community noise is not new; rules in ancient Rome forbade the iron wheels of carriages to be used on cobblestones at night as it disturbed sleep. The goal of noise management is achievement and maintenance of noise levels that protect human health.

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\(^{9}\) Schopenhauer 1840.


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This is done through the development of criteria for maximum permitted safe exposure levels and the promotion of noise assessment and control as part of environmental health programmes. Noise management involves various principles (precautionary, polluters pay, and noise prevention) and a policy framework which includes environmental impact analysis, setting of noise standards, cost benefit analysis, noise abatement measures, a low noise implementation plan and legislation.

Research needs in the future should consider the assessment of dose-response relationships between sound levels and politically relevant variables such as noise induced social handicap, reduced productivity, decreased performance in learning and the work place, school absenteeism, increased drug use and accidents.

4.1.3 The Ageing and Health programme

The global dimensions of ageing show that the current numbers aged 60 years and over are estimated to rise to 1.2 billion by the year 2025. Currently there are 60% in developing countries. The oldest old (80 years and older) are increasing faster, by 200% between 2000 and 2020. In very old age women outnumber men by 2:1. Life expectancy at birth is rising steadily throughout the world although figures remain highest in North America and Europe and lowest in Africa. These increases have been accompanied by substantial falls in fertility all over the world; for example substantial falls in fertility are expected to have occurred recently in India, Brazil and China.

These two trends of rising life expectancy and falling fertility together produce 'population ageing'. This is more rapid in the developing world, and is associated with prevailing poverty and major social changes and changes in the disease pattern. The developed world became rich before it became old but developing countries are becoming old before they become rich. Hence in the latter group of countries there is a lack of appropriate models for care and service provision.

With regard to ageing and hearing loss, 50% of people aged 65 years and above have some degree of hearing loss. The possible consequences are frustration, social isolation, loneliness and increased risk of accidents because of inability to hear warning sounds.

The Ageing and Health programme has developed an integrated approach towards a global strategy for active ageing. This includes policy development, advocacy, capacity building (research and training), and information dissemination. The theme of the World Health Day in 1999, in the International Year of Older Persons was “Active Ageing Makes the Difference”. This highlighted various principles and practical steps to help maintain health and creativity throughout the lifespan and especially in later years. Thus for PDH the emphasis would be on “hearing” rather than “hearing loss”.

4.2 WHO Collaborating Centres

4.2.1 Bangkok Collaborating Centre.

The Otological Center: Bangkok Unit in the Department of Otolaryngology at Siriraj Hospital, in Bangkok, Thailand is the oldest WHO Collaborating Centre for the prevention of deafness and hearing impairment, having been first designated in 1988. It has also been an IFOS-ISA Centre since 1985 and an HI Centre since 1992. It also has links with the International Association for Physicians in Audiology (IAPA), Japan International Cooperation Agency and the Swedish Handicap International Association.

In-house services include a training centre for the region, co-operation with WHO programmes, resource and services centres and data collection and research centres. Outreach services include primary ear and hearing care programmes, epidemiological studies, public

- To increase awareness
- To disseminate information
- To highlight examples of best practice for programmes
- To give sound policy advice on how populations can remain active and healthy for as long as possible
- To provide evidence base for policy development

Figure 5: Mission of Ageing and Health

- Provide courses to upgrade otology & audiology skills of medical staff in the region
- Disseminate Primary Ear & Hearing Care methods
- Act as a referral centre for diagnosis of auditory disabilities
- Provide advice on auditory rehabilitation
- Advise regional Governments on prevention of hearing disability
- Collaborate in the regional fellowship programme
- Conduct Bachelor of Science course in audiology
- Implement model multidisciplinary approach for PDH in Thailand
- Participate in development of WHO-PDH

Figure 6: Terms of Reference for Centre
awareness and prevention, and a community-training programme. The Bangkok Otological Centre is also centre of expertise for the region and is involved in Human Resource Development through postgraduate training courses, and fellowship training programmes.

The Centre's Terms of Reference for its WHO activities are shown in the box (figure 6).

4.2.2 Malmö Collaborating Centre:

Over the past few years the centre has been carrying out education in primary health care in East Africa, and keeping in touch with former participants on course by newsletters and ordinary letters. In Autumn 1999, the centre started cooperating with an existing CBR programme in the Kilimanjaro region, training primary health care personnel in primary ear and hearing care. Funds were received from SIDA for this work until June 2000. We are also writing simplified manuals to be translated into Swahili. There is also a research project with the professor in Dar-es-Salam concerning treatment of chronic supplicative otitis media.

4.2.3 Liverpool Collaborating Centre:

The Liverpool Centre was involved in technical support and collation and analysis of data for the 4-country surveys of prevalence and causes of deafness and hearing impairment using the WHO Ear and Hearing Disorders Survey Protocol. Over 22,000 subjects from 116 clusters in the 4 countries have been seen in these surveys. A similar survey is planned for Guyana and a funding application is in process. The Liverpool Group is also planning to undertake a second trial of treatment of chronic supplicative otitis media in Kenya.

4.2.4 Copenhagen Collaborating Centre:

One of the terms of reference for this centre is to perform clinical research concerning the introduction of new hearing aid technologies for hearing-impaired people. At the centre forming an outpatient audiological service, all kinds of hearing aid's technology are available, i.e. traditional analogue hearing aid's, programmable hearing aid's, and digital signal processing (DSP) hearing aids. The hearing aid and battery provision is free of charge, and if necessary alternative listening devices may also be provided.

As part of the clinical evaluation of new hearing aid technology clinical comparative trials are performed, being designed according to the objective of the study, and preferably with test subjects blinded, whenever possible. Briefly stated, the trials are based on generally accepted clinical research methodology.

The intensive marketing of DSP-hearing aids in 1996 resulted in a cross-over study of one digital-hearing aid in blinded experienced hearing aid users, showing no difference between the digital signal processing and analogue hearing aid. A succeeding health technology evaluation based on the available literature concluded that DSP-hearing aid's are as good as modern analogue or programmable hearing aid's, and this is supported by longitudinal quality assurance data including approximately 32,000 hearing-impaired subjects provided with hearing aid’s in the centre throughout 1990-1999. The consumers’ responses to a simple questionnaire show no improvements in outcome parameters, such as use of and/or satisfaction with hearing aid.

It is concluded that there is no solid evidence for a better effect of the new hearing aid-technology - so far - and that the marketing has created unrealistic expectations in the consumers and increased costs of society. It can be expected that the increased production of DSP-hearing aid’s will reduce their price and thereby their costs.

The head of the collaborating centre is currently the coordinator of the hearing aid’s working group (HAWG) which is in process of producing WHO Guidelines for Hearing Aids and Services for Developing Countries.

4.2.5 Jakarta Collaborating Centre:

The Jakarta Centre for Ear care and Communicative disorders was officially opened in 1992 and is an HI/ILOS/ISA centre as well as being a WHO Collaborating Centre for prevention of deafness and hearing impairment.

Its main programmes include

- an epidemiological study of ear and deafness in Indonesia, this has now obtained prevalence and ear morbidity data in 7 provinces of Indonesia
- a training programme for primary health care doctors and paramedical staff; this started in 1996 and provided basic health care training for 3 weeks in field and hospital settings; 60 PHC doctors from 3 provinces in Java were trained in 1999
• training for residents; because of the high prevalence of chronic otitis media in Indonesia (2-3%) and limited medical care there are many complications in the population and a great shortage of otolaryngologists and experienced ear surgeons; hence training of residents is needed to produce specialists capable of addressing these problems. Current training lasts 3 years 9 months.
• An otology project was started in 1995 with support from Hearing International (Japan). The project includes training and developing curricula for ear surgery, in cooperation with Japanese staff for the residents and staff in the Dr. Cipto Mangunkusumo Hospital in Jakarta.
• Helping to provide health services with the Indonesian Navy to remote islands in West and Eastern parts of Indonesia.
• Other activities include a children's otology project in Jakarta, community-based eye and ear centre projects, otology projects in Sulawesi and Bali, and epidemiological studies to be done in 2 provinces; discussions held regarding an HIJ/UNESCO Chair in Ear Health Education and Training in the Faculty of medicine in the University of Indonesia.

4.3 Other Organizations

4.3.1 IMPACT Global Programme

Disabled people number among the poorest of the poor. Of the estimated 1.3 billion people living in poverty, about 225 million, or one in six are affected by moderate or severe disabilities. Many of the causes of disability are preventable or reversible.

It was against this background that the International Initiative Against Avoidable Disability, now known as IMPACT, was established, co-sponsored by UNDP, WHO and UNICEF. WHO provides policy level guidance and technical backstopping while UNICEF and UNDP lend their operational support at the field level.

IMPACT is an international programme with a holistic philosophy whose aim is to prevent and reduce causes of disability and as a consequence, alleviate poverty through sustainable efforts at the community, national and international level.

The programme is implemented by autonomous national IMPACT Foundations which mobilizes the management skills and resources of the private sector. The Foundations inter-relate and complement efforts of the national governments, non-governmental and community based organizations, UN agencies and other international organizations. It also acts as a powerful catalyst, maximizing benefits from other interventions.

IMPACT foundations have been set up in some 14 countries in support of national and community-based programmes in the following fields: immunization, micro-nutrient deficiency disorders, safe motherhood and child survival, injury prevention, healthy ageing, early identification and treatment of disability causing conditions and low cost curative interventions.

WHO has worked closely with IMPACT in a number of countries, for example in India with the Polio-Free Madras project, the Bombay immunization programme and the Pune maternal and childhood disability prevention programme, the comprehensive disability prevention programme in Camiguin, Philippines and the disability prevention programme in Palestine.

IMPACT believes that access to information and services for avoidable disability is a basic human right whilst recognizing the rights of all disabled people. IMPACT works towards the creation of a non-handicapping environment for all.

It is important that IMPACT foundations and national WHO offices work closely together in the future. Joint projects using WHO technical backstopping should be envisaged.

The IMPACT office premises in Geneva are provided by WHO. UNDP has been funding all of its operational costs. Due to severe budget constraints UNDP will be unable to continue funding the Geneva IMPACT office in 2001, although it very much wants to remain a strong partner with IMPACT. It is to be hoped that WHO will continue to provide its support to IMPACT along with the other UN partners and seek funding from extra-budgetary resources for IMPACT.
4.3.2 Christoffel-Blindenmission

During 1999 in the field of deafness and hearing impairment, Christoffel-Blindenmission (CBM) supported the following projects in or for developing countries:-

- Schools for the Deaf
- ENT/Audiology services in Botswana, Ethiopia, Tanzania, Jordan, Thailand, Bhutan, China
- Primary ear care projects in Malawi, Madagascar
- Projects for Prevention of Deafness and Hearing Impairment in Nigeria, Thailand, Papua New Guinea, South India (4), Vietnam, Philippines,
- WHO activities for prevention of deafness and hearing impairment

CBM recently established a series of Advisory Working Groups (Figure 7) to provide policy advice for the organization.

Other relevant activities in 1999 included the Joint Meeting of Advisory Working Groups on Hearing, in Bensheim, Germany in July 1999 which addressed topics in prevention, audiology and speech therapy and Education of Deaf People. It made policy recommendations and worked on the development of standard lists. The WHO Ear and Hearing Disorders Survey Protocol was distributed to all 12 CBM Regional Representatives (at CBM’s request) and formulation of regional strategies on Prevention of Deafness and Hearing Impairment was carried out in the South Asian Region (Office: Bangalore), Central Asian Region (Office: Bangkok), East Asian Region (Office: Manila).

4.3.3 International Federation Of Oto-Rhino-Laryngological Societies.

IFOS was founded in 1965 to promote globally the advancement of oto-rhino-laryngology, relate and coordinate between national ORL organizations, and organize a quadrennial world congress. IFOS is hence the political voice for organized ORL at the international level. As a part of this voice, IFOS chose to lobby the WHO on the subject of hearing impairment and was one of the organizations that were instrumental in promoting the 1995 World Health Assembly Resolution on prevention of hearing impairment. IFOS also provides support to the WHO PDH programme and helped to finance the start-up costs of Hearing International.

IFOS is developing interests in communication disorders. It is important that the PDH programme should emphasize the importance of communication, and not just prevention of deafness and hearing impairment.

IFOS is also active in the field of tobacco control, another of WHO’s priorities.

4.3.4 International Society Of Audiology

Audiology deals with the knowledge, protection and rehabilitation of human hearing, inclusive of the effects of pharmacological and surgical measures, but exclusive of matters relating to the techniques of these measures. In terms of services audiology deals with function and dysfunction of the auditory system. The services provided to hearing impaired people deal with diagnostics, auditory rehabilitation, communication/communication disorders, prevention of dysfunction, research and teaching.

WHO Activities for the Prevention of Deafness and Hearing Impairment address such causes for prevention as otitis media, ototoxic drugs, noise-induced hearing loss and they focus on ear care and primary prevention. They are mainly involved with primary prevention and as such are very relevant and necessary. They tend to be medically oriented and disease oriented and there has been limited involvement of iSA so far.
However, a new initiative by WHO to look at (re)habilitation by hearing aids (Appropriate, Available, Affordable) and services for developing countries links more clearly to audiology. Other aspects that may be addressed include hearing tactics, assistive devices, speech and communication and various interdisciplinary aspects.

The organization of the discipline of Audiology differs over the world with different categories of professionals with different competencies. Their required skills and knowledge vary according to the services provided.

Training programs for people providing audiological services have been established in the USA and some other countries. Recommendations for other countries and a curriculum are available. Training is primarily at the tertiary level. The International Society of Audiology (ISA) can help in drafting a curriculum and give help with training.

There is strong cooperation between Hearing International, IFOS and ISA especially in relation to the joint designation of appropriate Centers. These may provide training at different levels, gather or provide epidemiological data and often have out-reach programmes.

An important topic is the study of noise pollution and its primary and secondary prevention with new research in relation to the latter. Tertiary prevention involves tinnitus and communication problems.

New issues being looked at include studies on cost-effectiveness of interventions, cost of hearing impairment, cost of intervention, benefit to society, quality of life, impact on a person, and impact on his/her role in society.

A recent study on personal impact was conducted in Amsterdam by Sophia Kramer and others of 3107 persons aged 55-85 with various chronic diseases such as cancer, cerebro-vascular accident (CVA), cardiac problems, diabetes, respiratory problems, joint infections, vascular problems. Hearing impairment was self-assessed by simple questionnaire. Psycho-social health status was assessed looking at depression, loneliness, mastery, self-efficacy, and network. Prevalence of the various problems was joint infections 24%, cardiac problems 23%, hearing impairment 14%, respiratory problems 13%, vascular problems 11%, cancer 10%, diabetes 9%, CVA 6%. Deviating psycho-social scores occurred in chronic illness and there was an additional effect of hearing impairment for self-efficacy and network. The study concluded that the emotional impact of hearing impairment is very strong, and emotional status for hearing impairment is worse than for many life-threatening diseases.

The International Society of Audiology (ISA) organizes a presentations Congress, special meetings, publications (Audiology, Series in Audiology) and activities with individual members through personal networks, with national societies, and cooperation (e.g. with Hearing International). ISA also gives support to curriculum and training activities, general research and research into epidemiology, cost-benefits, quality of life and the setting up of a global database.

4.3.5 Hearing International

Hearing International (HI) is a multi-disciplinary non-governmental organization devoted to the global prevention of hearing loss and deafness, and was founded jointly by representatives of ISA and IFOS. Its main objective is to promote and develop global programmes for prevention and management of deafness and hearing impairment. Its general objectives are to make known the causes, extent and consequences of deafness and hearing impairment, to cooperate with international NGOs and UN organizations, to encourage and support the activities of national and regional groups, to facilitate research activities, to mobilize resources and raise funds, and to help the development of needed manpower.

The most recent HI Symposium and General Assembly took place in Kyoto, Japan, 2-4 November 1999, organized by Dr J-I Suzuki with HI (Japan). This was a highly successful meeting which brought together for the first time almost all of the heads of the 16 IFOS/ISA/HI centres from around the world.

In the future, HI centres have committed themselves to take part in HI activities and the agreed tasks of HI, i.e. HI ear and hearing care projects, human resource development, rehabilitation, raising public awareness, and fund raising. HI will also actively collaborate with WHO programmes for the prevention of deafness and hearing impairment.

HI intends to become involved in collection of data, networking of projects, and cross-cultural studies. It will establish and strengthen links with professional and consumer organizations, international non-governmental organizations and committed individuals.
4.3.6 International Federation Of Hard Of Hearing People

The International Federation of Hard of Hearing People (IFHOH) was founded in 1977 to represent the interests of all hard of hearing and late-deafened people and those who suffer from tinnitus, Meniere’s disease or who have received a cochlear implant. Christopher Shaw was the first President (until 1988). It is an international umbrella organization with National Organizations from 45 countries as members as well as 35 contact organizations. It holds regular International Congresses and the 6th such event will be held in Sydney, Australia in July 2000, hosted by Better Hearing Australia.

Current initiatives include the following.

- A hearing awareness and educational training programme starting in former CIS countries with support from ISA and IFOS. Contacts have been made with relevant bodies in Kazakhstan and the possibility of holding a meeting and conducting a pilot study there are under discussion. A sponsor has been identified.
- A proposed joint conference with WHO with a possible theme of "hearing awareness, prevention and training in developing countries"
- The Solar-powered button cell battery charger project. This was reported on at the previous WHO Informal Consultation in 1999 and progress on this project is continuing. A sponsor has been identified.
- IFHOH is involved in the WHO Hearing Aids Working Group through the participation by the General Secretary to represent the interests of users of hearing aids.
- IFHOH is involved in the planning for possible surveys in China and Thailand and is negotiating to obtain hearing aids for these projects.
- IFHOH will be involved in a conference on elderly persons with hearing difficulties to be held in Indonesia.
- The IFHOH newsletter has been enlarged to A4 size and is now in a colourful glossy format.
- IFHOH has had discussions with WHO for the formation of working relations and is likely in the near future to sign jointly exchanged letters setting out the 2 year plan of action.

5 CONCLUSIONS AND RECOMMENDATIONS

5.1 Epidemiology Of Deafness And Hearing Impairment

5.1.1 Epidemiological data.

There is lack of epidemiological data in most countries. The prevalence of the problem should be assessed in various age groups (neonates if appropriate audiological services available, school children age 5-10 years, adults age 20-45 years, elderly age ≥65 years), in urban and rural communities, and in communities with special needs. Risk factors or causes of Hearing Impairment should be identified. Prevalence data is also required as a baseline for assessing the impact of intervention studies.

It is vitally important that the prevalence in as many countries and communities within countries as possible is established because of variation in prevalence rates. Although the principle of no survey without service is important this may mean that prevalence surveys alone may have to be conducted in some countries and communities provided participants understand that these are being undertaken purely as surveys to establish needs.

It is recommended that prevalence surveys be conducted first in countries with available rehabilitation services before proceeding to surveys in other countries.

WHO should ensure the quality of the data collected by standardizing the procedure used for collection of the data.

5.1.2 Disability Threshold For Deafness

It is recommended that the PDH programme consider re-defining the audiometric threshold at which hearing impairment becomes disabling from the current threshold of 41 dB or greater to 31 dB or greater in the better hearing ear at all ages.

13 Please see section 3 for an explanation of how these conclusions and recommendations were produced.
5.1.3 Survey tests
In view of the cost and time required for carrying out the survey using the WHO protocol, it is recommended that simpler survey screening tests be designed which are valid and reliable.

5.1.4 Social and economic burden of hearing impairment
There is almost no information on this topic in developing countries; information is urgently needed in order to prioritize the problem of hearing impairment.
It is recommended that WHO invite experts in health economics and other interested parties (such as schools of public health and business, insurance companies, government ministries, industry generating noise exposure and businesses involved in noise protection) to formulate indicators and strategies for carrying out studies using socio-economic analysis on issues such as
a) cost of treating preventable disabling conditions,
b) cost-effectiveness of interventions for prevention and against causes of deafness and hearing impairment
c) cost of providing hearing aids and the impact on the person’s economic potential
d) economic loss due to acquired HI
e) cost-effectiveness of cochlear implant on children.
f) cost burden, costs of prevention and intervention, and enhanced revenue to society.

5.1.5 Collation & Dissemination of data
There is a need to collate and disseminate the data from various studies so that it is accessible to all interested groups. Though prevalence studies have been carried out, in different places, there is very little interaction and sharing of experience among these researchers.
It is recommended that WHO establish a database which is easily accessible. This database also includes information on environmental and other risk factors.
It is recommended that WHO facilitates epidemiological meetings to share information on prevalence, risk factors/causes, share study designs and screening methods, and identify areas of need for further studies.

5.1.6 Personnel
There is a lack of trained personnel for carrying out community-based and special surveys in most countries. There is a need to train persons in epidemiological, economic and anthropological studies.
It is recommended that WHO identify institutions in countries or regions which would serve as a resource centres for carrying out training in epidemiological surveys. Where possible and appropriate distance learning could be used for the training.

5.2 New Strategies For Prevention

5.2.1 Universal Neonatal hearing screening:
It is recommended that a policy of universal neonatal screening be adopted in all countries and communities with available rehabilitation services and that the policy be extended to other countries and communities as rehabilitation services are established.

5.2.2 Immunisation.
The Prevention of Deafness and Hearing Impairment programme should be involved with the appropriate WHO group responsible for vaccination to emphasise and to measure the benefits of immunisation for prevention of congenital deafness (measles-mumps-rubella vaccine), deafness from meningitis (haemophilus influenzae (Hib) and pneumococcal conjugate vaccines) and hearing loss from otitis media (pneumococcal conjugate vaccine).

5.2.3 Treatment of chronic supplicative otitis media
The treatment of chronic suppurative otitis media is effective for the prevention of further hearing loss and the reversal of current hearing loss.
The PDH Programme should work with the appropriate WHO group to emphasize the benefit and to measure the effect of systemic antibiotics and to assess and endorse the use of non-otoxic topical antibiotics. Further, the PDH should emphasize the advantage of ear care relative to integrated management of child health as a reason to create return visits at which time all aspects of child health can be assessed.

5.2.4 Nutrition Programme

It is recommended that the PDH programme obtain and collate all the available data on the effects of nutritional deficiency of iodine and vitamin A on hearing and provide input of this data to and collaborate with the WHO agency concerned with nutrition.

5.2.5 Sexually transmitted diseases (STDs) Programme

It is recommended that the PDH programme obtain and collate all the available data on the effects of STDs (especially HIV infection and syphilis) on hearing and provide input of this data to and collaborate with the WHO agency concerned with STDs.

5.2.6 Molecular biology of hearing loss

The molecular biology of hearing loss is a promising and rapidly developing technique to learn about hearing loss. However, at this time, the practical application of molecular biology to the prevention of hearing loss does not appear to be sufficiently immediate to warrant an exploratory meeting. However, PDH should continue to evaluate potential utility of molecular technology for a possible future meeting.

5.2.7 Access

Access for individuals with hearing loss remains suboptimal and requires not only increased awareness but also concrete action.

Individuals with hearing loss are (unintentionally) restricted from full participation in society by current acoustic environments. Individuals with language other than complete oral communication also experience a communication limitation. Individuals with hearing impairment as well as health professionals lack a coordinated international web directory to describe available resources.

The PDH programme should coordinate a meeting with the mission of emphasising improved access of individuals with hearing loss. Individuals with hearing loss should have a substantial presence at the meeting.

5.2.8 Evidence of effectiveness

WHO should encourage the collection of data on the evidence of effectiveness of interventions against causes of Deafness and Hearing Impairment, which may occur in parallel with the implementation of these interventions.

5.3 Development of National Programmes

5.3.1 Noise-induced Hearing Loss

It is recommended that the PDH programme provides input into and collaborates with the WHO Programme for Occupational and Environmental Health (noise).

5.3.2 Vaccination Programmes

It is recommended that the PDH programme provides input into and collaborates with the WHO Agency concerned with Childhood Immunisation/Vaccination programmes.

It is recommended that WHO establish as rapidly as possible the policy that the Extended Programme for Immunisation includes mumps, measles and rubella and that this be globally implemented.

It is recommended that the PDH programme gather and collate all available data concerning the effects of the ARI/Conjugated vaccine on prevalence rates of both meningitis induced deafness and otitis media. If, as anticipated, this vaccine is shown to significantly reduce prevalence rates of these
conditions, it is recommended that this further vaccination be added to the vaccination schedule and be globally implemented as rapidly as possible.

5.3.3 Primary Ear and Hearing Care

Name. It is recommended that the name "Primary Ear Care" be amended to "Primary Ear and Hearing Care".

Data. It is recommended that the PDH programme obtain and collate all the available data concerning the effectiveness of Primary Ear and Hearing Care in reducing the disabling effects of ear disease and hearing loss.

Public health and primary health care. It is recommended that WHO encourages developing countries to integrate Public Health Services and Primary Health Services at the point of delivery of services in community 'Health Centres'.

Training for PEHC. It is recommended that the PDH programme develop and produce a Primary Ear and Hearing Care 'Package' to comprise:

- A Training Programme
  - Manual for practitioners
  - Material for training for trainers
- Sample information materials
- A basic equipment list
- An essential drugs list

It is recommended that this be done by convening a Workshop of Interested parties, an information dissemination "expert", an education "expert", and representation of different cultures

Cost implications. It is recommended that the PDH programme establish research projects to obtain data and to examine the cost-implications of Primary Ear and Hearing Care to determine the per capita cost of such a programme, and the potential financial and social benefits.

5.3.4 Training

Training of health professionals in ear and hearing issues is suboptimal to non-existent even in advance health care programmes.

The PDH programme should convene a meeting to establish minimum training levels for health care workers such as, but not limited to, nursing students, medical students and primary care providers. Issues discussed should include who should train, where, links to other groups, possible certification and what the content should be.

5.4 Raising Awareness About Deafness And Hearing Impairment And Resource Mobilisation

5.4.1 New resolutions

Appropriate resolutions should be prepared and submitted to the UN and WHO General Assemblies to draw attention to the need to reduce the prevalence of avoidable hearing loss.

5.4.2 Promotion

WHO should promote HEARING AS ESSENTIAL FOR HEALTH in this century.

The PDH target of 50% reduction in avoidable hearing loss by 2010 be promoted at every opportunity.

Steps should be taken by the PDH programme to participate in other WHO programmes to promote 'Hearing'.

5.4.3 Task forces

Separate or combined task forces of suitable persons should be set up to:-

(i) prepare a comprehensive database on funding sources;
(ii) identify and recruit a suitable figurehead and international and national ambassadors;
(iii) prepare programmes for:
  (a) raising funds;
  (b) initiating and developing projects and programmes.
5.5 Programme Development and Management

5.5.1 Advisory group

The Advisory Group to WHO-PDH should be expanded and changed as necessary to cover all appropriate regions, subject areas and related groups and organizations.

5.5.2 Inventory of activities

A global inventory of activities in the field of Prevention of Deafness and Hearing Impairment should be set up by WHO.

5.5.3 Linkages and networking

WHO-PDH at headquarters should develop and strengthen relationships with WHO Regional Offices.

WHO-PDH should set up and strengthen linkages with schools of public health for the purpose of assisting with gathering and collating data on prevalence and causes of Deafness and Hearing Impairment.

In order to enhance opportunities for networking, WHO should convene future planning meetings with representatives from other programmes, regional offices and at times close to the meetings of the WHO Executive Board.
6 ANNEX 1: SCOPE AND PURPOSE OF THE MEETING

1. Scope of meeting

This meeting is the annual planning meeting for activities for prevention of deafness and hearing impairment, bringing together advisors, heads of collaborating centres and representatives of concerned NGOs with relevant WHO managers. It reports on recent past achievements and helps to determine the priorities and activities for WHO in prevention of deafness and hearing impairment in the future. It also addresses a particular theme of relevance to the activities in this field at WHO. This year the theme is “WHO Activities for the Prevention of Deafness and Hearing Impairment – priorities for the next 10 years.

2. Purposes of the Meeting

To report and review WHO activities and achievements for prevention of deafness and hearing impairment in the light of previous planned activities

To discuss and make recommendations on the aim, targets, objectives, priorities and planned activities for development of this field at WHO for the coming decade.

To provide an opportunity to bodies represented to present information on their activities and future plans in relation to the work of WHO in this field

To identify opportunities for collaboration
7 ANNEX 2: AGENDA & WORKING SCHEDULE

Welcome by Dr Y. Suzuki, Executive Director, Social Change and Mental Health
Welcome by Dr B. Thylefors, Director, Disability/Injury Prevention and Rehabilitation

1: Overview Of WHO Activities For Prevention Of Deafness And Hearing Impairment
da: Review of who activities and priorities for programme development: Dr A Smith, WHO
b: Looking back at the last 10 years, looking forward to the next 10 years.: Keynote presentation - Professor Peter Alberti, General-Secretary, IFOS

2: WHO Activities For The Prevention Of Deafness And Hearing Impairment: Priorities For The Next Ten Years (concurrent small group discussions; each participant to join one group only)
   Group 1: Epidemiology of deafness and hearing impairment; determining costs of hearing loss and benefits of prevention
   Group 2: Identifying new strategies for prevention
   Group 3: How should national programmes be developed
   Group 4: Raising awareness about deafness and hearing impairment
   Group 5: Resource mobilisation
       Cross-cutting issues:-
       Setting strategic targets
       Training needs
       Research needs

3: Opportunities for collaboration
Other WHO Programmes
   (a) Integrated Management of Childhood Illnesses. Dr S.A. Qazi, Department of Child and Adolescent Health
   (b) Community Noise Guidelines. Dr Dieter Schwela, Occupational and Environmental Health
   (c) Ageing and Health programme. Ms I.E. Hoskins, Ageing and Health

Reports from WHO Collaborating Centres Centre for prevention of deafness and hearing impairment on present and future collaborative activities:
   (a) Bangkok Collaborating Centre: Dr S. Prasansuk, Head of WHO Collaborating Centre
   (b) Malmö Collaborating Centre: Presentation by Dr I. Bastos, Head of WHO Collaborating Centre
   (c) Liverpool Collaborating Centre: Presentation by Dr I. Mackenzie, Head of WHO Collaborating Centre
   (d) Copenhagen Collaborating Centre: Presentation by Dr A. Parving, Head of WHO Collaborating Centre
   (e) Jakarta Collaborating Centre: Presentation by Dr H. Hendarto, Head of WHO Collaborating Centre

Collaboration with Other Organisations
   (e) IMPACT Global Programme: Mr K McGrath, Co-ordinator
   (b) Christoffel-Blindenmission: Dr A. Smith on behalf of Mr C Garms, Executive Director
   (c) International Federation Of Oto-Rhino-Laryngological Societies: Prof P. Alberti, General Secretary
   (d) International Association Of Logopedics And Phoniatrics: Dr A Muller, Past President
   (e) International Society Of Audiology: Dr J. Verschuure, Secretary General
   (f) Hearing International: Dr S. Prasansuk, President
   (g) International Federation Of Hard Of Hearing People: Mr Christopher Shaw, General Secretary

4. Conclusions and Recommendations

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8 ANNEX 3:- LIST OF PARTICIPANTS

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9 ANNEX 4: WORKPLAN 2000-2001:- PREVENTION OF DEAFNESS AND HEARING IMPAIRMENT:

1. DEVELOPMENT OF STRATEGIES FOR THE PREVENTION OF HEARING IMPAIRMENT
   1.1. Prevention of hearing impairment from ototoxicity
   • Development of draft guidelines for review by Regional Offices and selected countries
   • Finalisation and dissemination
   • Application and evaluation in selected countries
   1.2. Prevention of hearing impairment from chronic otitis media*
   Same as 1.1
   1.3. Prevention of Hearing Impairment from Noise
   Same as 1.1

2. SUPPORT TO NATIONAL PROGRAMMES
   2.1. Population-based assessments
   • Surveys in selected countries using WHO Ear and Hearing Disorders Survey Protocol*
   • Creation and development of a global database on prevalence and causes of deafness and hearing impairment (links with PBL database)
   • Further development & evaluation of WHO Ear and Hearing Disorders Survey Protocol*
   • Short-term Professional (to be appointed)*
   2.2. Development of primary ear care
   • Development of teaching materials for primary ear care
   • Support to training in primary ear care for primary health workers*
   • Convening of Regional Workshop for Francophone African Countries*
   2.3. Technical co-operation with member states and advisory services
   • Site visits for situation and needs assessments for development of National Programmes in selected interested countries
   • Facilitation and evaluation of projects for prevention of deafness and hearing impairment, South India
   • Promotion and development of public health otology/audiology higher-level training courses*
   • Advocate and raise awareness in different countries and regions for prevention of deafness and hearing impairment

3. OPERATIONAL RESEARCH AND APPROPRIATE TECHNOLOGY
   3.1. Promotion of the development of appropriate and affordable hearing aids and services for developing countries
   • Convening of working party to develop requirements
   • WHO co-sponsorship, with interested NGOs, of meetings with interested parties to discuss production of appropriate low-cost hearing aids
   3.2. Economic analysis of sensory disabilities
   • Study to review current knowledge of economic costs of deafness and hearing impairment, and costs/benefits of preventing/managing/rehabilitating
   • Develop and use methodologies to measure costs of sensory disabilities and benefits of prevention and calculate these costs/benefits for countries*

Aim and TARGET FOR PREVENTION OF DEAFNESS AND HEARING IMPAIRMENT

Aim:
To assist member states to eliminate avoidable hearing impairments through appropriate preventive and curative measures

Strategic Target:
To eliminate 50% of the burden of avoidable hearing loss by the year 2010.
10 ANNEX 5: PROPOSED TOPICS FOR GROUP DISCUSSION

Topics listed are those that were proposed; other topics could be included by the groups if they wished

Group 1: Epidemiology of deafness and hearing impairment;
- Survey strategy
- Whether/how to test under 5 year olds (OAE?, ABR?)
- Update protocol
- Meeting on epidemiology?
- Include economic analysis of costs of hearing loss and benefits of prevention
  - What priority is economic analysis?
  - Have we got the information/tools to do it?
- Strategic targets
- Training needs
- Research needs

Group 2: Identifying new strategies for prevention
- Genetic causes
- Presbyacusis
- Sensori-neural hearing loss
- Is the disease-oriented approach to prevention appropriate?
- How else could we approach prevention? (eg Hearing Aids Working Group)
- Training needs
- Research needs
- Strategic targets

Group 3: How Should National Programmes Be Developed
- How can countries be encouraged to set up National Programmes?
- What is WHO's role?
- Primary ear care
  - How important is it?
  - What is WHO's role?
- Training needs
- Research needs
- Strategic targets

Group 4: Raising awareness about deafness and hearing impairment
- [may combine with group 5]
- Where do we need to raise awareness?
- Why is it so difficult?
- How can we do it better?
- What can WHO do to raise awareness better? (inside and outside the organisation)
- Training needs
- Research needs
- Strategic targets

Group 5: Resource mobilisation
- What resources do we need?
- Where can we find them?
- What new strategies can we use?
- Strategic targets