Prevention and Control of Deafness and Hearing Impairment

Report of an Intercountry Consultation
Colombo, Sri Lanka, 17-20 December 2002

WHO Project: ICP DDP 009

World Health Organization
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1. INTRODUCTION

An intercountry consultation on Prevention of Deafness and Hearing Impairment was held in Colombo, Sri Lanka from 17 to 20 December 2002. Thirty participants from nine countries, five INGO representatives and three WHO staff from HQ and SEARO participated in the consultation. The agenda of the meeting and the full list of participants is attached at Annex 1 and 2.

The Consultation was opened by Dr Athula Kahandaliyanage, the Director-General of Health Services, Government of Sri Lanka. On behalf of the WHO Representative to Sri Lanka Dr Lokky Wai read out the message of the Regional Director, Dr Uton Muchtar Rafei. In his message, the Regional Director highlighted the excessive burden of disease due to deafness and hearing impairment. He reviewed WHO activities in the past to address the problems. These included the multicentre study on causes and prevalence of deafness in four countries namely India, Indonesia, Myanmar and Sri Lanka. He also referred to the infrastructure and human resource survey for prevention of deafness supported by WHO SEA. He expressed the hope that the evidence-based information provided by this study would lead to formulation of appropriate strategies that would ultimately help to reduce the burden of deafness in the countries of South-East Asia Region.

Dr Piyasena Samarakoon, Director/Medical Services welcomed the participants on behalf of the Government of Sri Lanka. Dr Madan P Upadhyay, Regional Adviser, Disability, Injury Prevention and Rehabilitation, World Health Organization, Regional Office for South-East Asia, welcomed the participants on behalf of WHO and thanked the Government of Sri Lanka for hosting the consultation. Dr Upadhyay highlighted how currently available information indicated that the number of deaf people in the world was increasing steadily. He pointed out that the prevalence of deafness in South-East Asia was disproportionate to the size of its population. The four-country survey mentioned above indicated that Sri Lanka had the highest prevalence of deafness, hence the choice of Sri Lanka as the venue of the Consultation.

Dr Andrew Smith, PBD WHO/HQ said that the burden of deafness was the highest in SEA among all WHO regions. He congratulated the South-East Asia Region for being one of the most active in the area of prevention of deafness and wished all success to the consultation.
Dr Khandaliyanage, Director General, Health Services, Government of Sri Lanka thanked WHO for organizing the consultation in Sri Lanka. He informed the participants that Sri Lanka had developed a National Plan for Prevention of Deafness and Management of Ear Diseases, but had not been able to implement it because of lack of resources.

Prof R C Deka (India) was nominated as Chairperson and Dr Siti Zainar Rosihan as Vice-Chair. Dr Abul Hasnat Joarder and Dr Ramesh Kumar Shrestha were nominated as Rapporteur.

2. OBJECTIVES
The objectives of the meeting were as follows:
(1) To review the situation of Deafness and Hearing Impairment in each Member country of the South-East Asia Region;
(2) To share experiences on successes and constraints in different countries;
(3) To share the findings of the survey on “Infrastructure and Health Services for the Prevention and Control of Deafness”; and
(4) To identify key actions relating to prevention of deafness and hearing impairment to formulate strategic responses to the problem in South-East Asia.

3. CURRENT STATUS OF PREVENTION OF DEAFNESS AND HEARING IMPAIRMENT

3.1 Global and Regional Perspectives
Dr Andrew Smith of PBD WHO /HQ presented an overview of global status and efforts for prevention of deafness currently ongoing at the global level. Dr Abraham Joseph presented the findings of four country population based surveys which showed a prevalence varying from 4.6 percent in Indonesia to 8.8 percent in Sri Lanka. Otitis media, wax, congenital hearing loss, noise and drugs-induced hearing impairment were found to be the main causes. Dr Madan Upadhyay discussed the current status of implementation of deafness programmes and identified the following as the key issues: huge burden of diseases, HRH issues, inadequate infrastructure and low priority for deafness prevention programme in the Region. He outlined several measures for raising profile of deafness programme in National Health development agenda.
3.2 Country Reports

Representatives from Bangladesh, India, Indonesia, Nepal, Sri Lanka, and Thailand presented the report of infrastructure and human resources survey in those countries. Country reports were also presented by Bhutan, Maldives and Myanmar.

3.3 NGO

Ms Silvana Inselmann reported that CBM had been working in India since 40 years and that prevention of deafness was one of its priorities. It was active in establishing schools and vocational training for the deaf, awareness programme as well as pilot studies on prevention of deafness at the primary level. Dr R Brouilette from CBM-International, elaborated on campaigns in noise awareness, community health care, immunization, affordable hearing care and hearing aids. Prof Suchitra Prasansuk presented the perspectives on behalf of the International Federation of Otolaryngological Societies, International Society of Audioligists and Hearing International for prevention of hearing impairment. Dr Padman Ratnesar and Rathnarajah Navaratnam from IMPACT presented their concern and activities in deafness prevention in the Region, as part of the overall programme for disabilities.

4. REVIEW OF THE SIX-COUNTRY INFRASTRUCTURE SURVEY

The survey was coordinated by the WHO Collaborating Centre for Ear Care and Communicative Disorders, Jakarta. Principal Investigators were appointed from Bangladesh, India, Indonesia, Nepal, Sri Lanka and Thailand. The survey protocol developed by Jakarta Centre was pre-tested in the West Java Province. A pre-survey Principal Investigators’ meeting was conducted in Jakarta, where the participants finalized the protocol. The survey was conducted from May until November 2002. A “mixed” methodology consisting of questionnaires, checklists, mapping, focus group discussions, and a panel discussion with the national authorities for refinement of the collected data, was adopted.
4.1 National Policy and Human Resources

Prof Hendarto Hendarmin, Principal Investigator of the Infrastructure and Human Resources for Ear and Hearing Care survey made a presentation on the status of the National Policy and Programme for Deafness Prevention in six surveyed countries. This represents a part of the SEARO commissioned study on infrastructure and human resources for prevention of deafness. Salient findings were:

1. All six SEA countries have a national ear and hearing care policy in some form or other. Most of these countries already have legislation/law for environment noise control, education of the deaf and occupational possibilities for the deaf.

2. Although all countries have developed national programmes for prevention of deafness, the problem is how to evaluate and to measure the implementation activities in the field.

3. There is a lack of human resources in most of WHO SEA countries; relevant professions and population ratio varies in sharp contrast among countries. In most countries majority of human resources are concentrated in the urban areas.

The number of otolaryngologists were reported to be low by many countries. Most WHO SEA countries, except Thailand and India have limited number of audiologists. Some otolaryngologists have to fill this deficiency by performing the task of audiologist in order to solve this problem. India has 15 institutes for training of combined audiologist and speech therapist. Indonesia has just started with a school for audiology last year. There is no school for audiologists in Bangladesh, Nepal and Sri Lanka. There is one school of audiology and one for audiometrists (audiology technician) in Thailand. The ratio of audiometrician to population in Bangladesh, Indonesia and Nepal is reported to be very low.

4. Primary Ear and Hearing Care (PEHC) is the strategy of choice for the provision and implementation of Prevention of Deafness and Hearing Impairment (PDHI). There is a need to further develop PEHC programme in Bangladesh, Sri Lanka, and Indonesia.
4.2 Ear and Hearing Care

Based on the results of the Infrastructure Survey, Dr Bulantrisna Djelantik, as co-PI of the survey, reported that primary ear and hearing care is being provided in all six countries, although information with regard to coverage was not available. PEHC service was claimed to be free in all countries, but users often had to pay for medications, because often supplies quickly run out in all countries. There were varying numbers of dedicated primary ear and hearing care centres in the Member Countries. The study also highlighted the number and type of ear surgeries performed in the countries. Mastoidectomies, as indicator of the presence of the complicated chronis otitis media, were still performed in large number of patients, especially in Bangladesh and Nepal. Grommet insertion for serous otitis media and tympanoplasty for dry perforated ears were performed in government as well as private settings. A few cases of cochlear implantation in adults with sudden deafness as well as congenital deaf children were also performed in some countries. Cost estimate for ear surgery (tympanoplasty and mastoidectomy), varied from USD 40 in Nepal to USD 700 in Indonesia.

Hearing Aids (HA) were needed for 4 to 6 percent of the population. An estimated 60 to 75 million people need hearing aids in SEA and this need remains far from being met. Among the currently used hearing aids, the pocket type was dominant in India, while BTE (behind the ear) type was the most frequently used hearing aid in Indonesia. Their use in Thailand was half and half.

With regard to rehabilitation, all six countries have laws that encourage education and rehabilitation of disabilities. Sign language existed in all six countries. Of all deaf and hearing impaired children, 70 to 90 percent were reported to get no formal education and very few of them obtained higher education and even fewer were self-reliant.

The study also highlighted the significant role played by NGOs in providing ear care as well as rehabilitation services. CBM, IMPACT, Hearing International (HI), HI Japan, British Nepal Otological Services (BRINOS), Rotary Club, Lions Club, as well as a number of local NGOs have been active in providing resources and services for prevention of deafness and hearing impairment, especially through rural out-reach for screening as well as ear surgery programme and hearing aid fitting for the underprivileged deaf and hearing impaired.
While services for ear care were available at the tertiary and primary levels, a large percentage of district hospitals were found lacking in human resources and testing and treating facilities for ear care.

5. NETWORKING

There are many stakeholders involved in the prevention of deafness. In general, it was agreed that services for prevention of deafness lagged far behind the need. This was considered to be largely due to the fragmented nature of the work done by different stakeholders. An urgent need existed to devise ways and means of bringing different stakeholders together. The participants made the following suggestions to address this issue:

- To create a national and regional (SEAR) planning group
- To establish a regional consortium consisting of national governments, WHO, INGOs, NGOs, UN agencies, professional societies and disabled person's organizations.

6. MAJOR OUTCOMES OF THE INTERCOUNTRY CONSULTATION

*General guidelines for formulation of national policies/programme and human resources requirement*

- A national policy for prevention and control of deafness is needed in all countries, taking on board all relevant stakeholders. This should take into account the existing situation and available resources. A focal person should be identified for this purpose and should serve as the Secretary of a National Committee to be constituted by the Ministry of Health. WHO should develop and distribute a template for development of national policy and programmes.

- The policy should have a special focus on providing services which targets the **primary level in underserved areas** and populations, give attention to the **secondary (mid) level for referral**, and appropriately strengthen tertiary care.

- Control of ear infection should be the major goal in the initial years, beside **early detection**, early intervention and management of
hearing impairments including critical attention to upper respiratory infections especially in children.

- The policy should promote production and distribution systems for **low-cost, good quality hearing aids**.
- The policy should also encourage creation of **awareness** among the public, PHC, physicians, pediatricians, obstetricians, pharmacists, paramedics, and school teachers about ear infections (otitis media) and related risk factors for hearing disorders.
- Policies should be formulated for conservation of hearing through legislation and enforcement of laws for noise control with special attention to industrial noise as well as risk at entertainment centres, music, children’s toys, etc.
- Programmes for prevention and control of deafness should be built around existing health infrastructure.
- While developing policies, emphasis should be placed on rapid development of all categories of human resources within the framework of a **team approach**. In particular, the need to develop hearing and speech personnel and teachers for the deaf was emphasized.

**Priorities for diseases control in countries represented**

Priorities for disease control in each of the Member Countries were identified on the basis of burden of disease, feasibility of implementation and availability of resources.

<table>
<thead>
<tr>
<th>Country</th>
<th>Causes</th>
<th>Middle Ear Infections</th>
<th>Congenital Deafness</th>
<th>Presbycusis</th>
<th>Otoxicity</th>
<th>NIHL</th>
<th>Wax</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>1 2</td>
<td>3 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bhutan</td>
<td>1 2</td>
<td>3 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>1 2 4</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indonesia</td>
<td>1 2 4</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Middle ear infections and congenital deafness were identified as two most priority conditions for intervention; noise-induced hearing loss was identified as a priority in Bangladesh, Indonesia and Thailand.

**Ear and hearing health care at primary level (PEHC)**

### Primary level

Primary ear care was identified as the key strategy for prevention of deafness and care for ear diseases. The following matrix was developed as guideline for various types of ear care services to be provided at primary care facilities.

<table>
<thead>
<tr>
<th>Type</th>
<th>Categories activities</th>
<th>Purpose</th>
<th>Methods</th>
<th>Human resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promotion</td>
<td>Public awareness Community education Partner-ship Counselling</td>
<td>Awareness</td>
<td>Brochures Modules Media Leaflets Others</td>
<td>Health workers employee/staffs Volunteers School teachers</td>
</tr>
<tr>
<td>Prevention</td>
<td>Screening 0-4 5-14 15-60 Occupational Immunization Antenatal care</td>
<td>Early detection And prevention</td>
<td>History taking Simple test Ear examination/ cong. abnormalities Simple test as - Morro's reflex</td>
<td>Health workers Health employee /staffs Volunteers School teachers Paramedics Nurse</td>
</tr>
<tr>
<td>Type</td>
<td>Categories activities</td>
<td>Purpose</td>
<td>Methods</td>
<td>Human resources</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------------------</td>
<td>----------------------------------</td>
<td>------------------------------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>Treatment</td>
<td>Primary care and treatment</td>
<td>Avoid complications</td>
<td>Medical treatment</td>
<td>Paramedics, Nurse, Doctors</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Removal of wax and foreign bodies</td>
<td></td>
</tr>
<tr>
<td>Re-habilitation</td>
<td>Referral to specialized centres Follow up</td>
<td>Secondary care Provide adequate hearing for education and job</td>
<td>Depending on diagnosis</td>
<td>Supportive services by the above trained staff.</td>
</tr>
</tbody>
</table>

**Secondary level and hearing health care**

Secondary level were those that were provided by all hospitals at district level or equivalent (in some countries also includes sub-district hospitals). **Ear and hearing care services were found to be the weakest at this level**, which, however, has an important role to play in the referral chain. Services required at this level together with human resources needed and other resources were identified.

**Secondary Ear Care Services**

<table>
<thead>
<tr>
<th>Requirements for secondary/mid level services</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Resources</td>
<td>ENT Doctor / or Substitute</td>
</tr>
<tr>
<td></td>
<td>Audiometrist (1)</td>
</tr>
<tr>
<td></td>
<td>ENT Nurse / Technician (1)</td>
</tr>
<tr>
<td></td>
<td>ENT Nurse (O.T) (1)</td>
</tr>
<tr>
<td></td>
<td>Hearing Aid Technician (including Ear Mould Making)</td>
</tr>
<tr>
<td></td>
<td>Speech Therapist / Audiologist – if possible</td>
</tr>
<tr>
<td></td>
<td>Outreach Services coordinator</td>
</tr>
<tr>
<td>Services</td>
<td>Pure tone audiometry and tympanometry</td>
</tr>
</tbody>
</table>
### Requirements for secondary/mid level services

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple ear surgery, e.g. simple mastoidectomy;</td>
</tr>
<tr>
<td>Grommete/ Myringotomy;</td>
</tr>
<tr>
<td>Myringoplasty/Tympanoplasty type 1; Impacted ear wax / FB removal</td>
</tr>
<tr>
<td>Facilities for basic ENT surgery</td>
</tr>
<tr>
<td>Determine types and degree of hearing loss</td>
</tr>
<tr>
<td>Hearing aid fitting in adults</td>
</tr>
<tr>
<td>Speech therapy</td>
</tr>
<tr>
<td>Outreach services</td>
</tr>
<tr>
<td>• Awareness raising</td>
</tr>
<tr>
<td>• Motivation</td>
</tr>
<tr>
<td>• Screening for ear disease and hearing impairment</td>
</tr>
<tr>
<td>• Referrals</td>
</tr>
</tbody>
</table>

### Tertiary level services

Tertiary ear and hearing health care centres are required to have full range of services to deal with all referral cases. In addition, these centres should play a leading role in policy formulation, advocacy and resource mobilization. These centres should also take/be given increasing responsibilities and resources for training of human resources.

### Tertiary level centres

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functions</td>
</tr>
<tr>
<td>• ENT Services</td>
</tr>
<tr>
<td>• Oto- audiology Diagnostics: Newborn (infant), other ages, management (Interventions), rehabilitation</td>
</tr>
<tr>
<td>• Neuro- otology (hearing/balance included)</td>
</tr>
<tr>
<td>• Speech language therapy/auditory training (Auditory Verbal),</td>
</tr>
<tr>
<td>• Provision of hearing aids, earmoulds, accessories and other assistive devices</td>
</tr>
<tr>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
</tr>
</tbody>
</table>
| • Cochlear implant research and development  
• Human resource development facilities for all levels.  
• Community outreach activities and networking with secondary and primary levels.  
• Public awareness campaigns.  
• Advocacy to policy-makers.  
• Research and development.  
• Supporting services (Laboratory/Radiology, oncology, etc.).  
• Calibration services and training as part of outreach. |

<table>
<thead>
<tr>
<th>Human Resources Needed</th>
</tr>
</thead>
</table>
| • ENT specialists.  
• Otologists.  
• Neuro-otologists.  
• Physician in audiology.  
• Pediatric ENT specialists.  
• Trained ENT nurse / paramedicals and PEHC nurses to work and to train others at the community level.  
• Audiologists/audiometricians/technicians (including hearing aids and earmoulds).  
• Speech pathologists/therapists.  
• Linguistic specialists.  
• Supporting services personnel: radiologists, Oncologist, pathologist, qualified special educators, psychologists, educational and language specialist, diagnosticians, trainers, social workers |

** All of the above designed in response to the national/regional needs assessment.

**Services required for provision, delivery, fitting and maintenance of assistive devices**

Assistive devices were comprehensively defined, as were the levels of service delivery. Sourcing of these was also discussed.

It was agreed that assistive devices should include:
- Hearing aids.
- Group hearing aids FM systems.
- Speech / auditory trainers.
- Loop systems.
- Captioning.
- Text messaging.
- Pagers/Messaging devices.
- Signalling devices.
- Sound to light signal.

### Services for Assistive Devices

<table>
<thead>
<tr>
<th>Requirement for services of assistive devices</th>
<th>Description</th>
</tr>
</thead>
</table>
| Primary level for post-lingually deaf children and all adults | - Public awareness (social marketing).
- To acquire necessary funding initiatives for developing services.
- To reduce ambient noise among users (educational/industrial audiology).
- Job and vocational placement for hearing aid users (development and enforcement of any existing reservation (e.g. 3% in India) for disabled persons in employment. |
| Sourcing and procurement of low-cost, appropriate quality devices and access to consumables (batteries, cords, appropriate ear-hooks, spare parts) | - Good relationship with vendors of assistive devices (guarantees, repairs etc.).
- Ear mould impressions that can be taken by ear nurses and skill-trained teachers (impression materials can be found at dental suppliers).
- Alternative energy sources (solar rechargeable).
Note: Earphone noise reduction cups needed at secondary level |
<table>
<thead>
<tr>
<th>Requirement for services of assistive devices</th>
<th>Description</th>
</tr>
</thead>
</table>
| Accessibility to assessment, fitting, follow-up, evaluation and maintenance | • Networking through CBR (community-based rehabilitation) programmes, is a pre-requisite for comprehensive delivery services  
• Hearing-impaired friendly environments (loop systems/FM). |
| Training of personnel at all levels | • Ear care nurses.  
• Users.  
• All categories of paramedics.  
  - Audiometricians/technicians.  
  - Ear mould technicians.  
  - Repair technicians.  
  - Field workers (CBR and others).  
  - Ear mould impression takers. |
| Research and Development | • Assistive devices.  
• Services.  
• Accessories. |
| Development of materials | • Procedural manual for medical, paramedical and technical professionals.  
• Pictorial user manuals.  
• Guides for families.  
• Public relations and publicity. Tap creative designers (advertising agencies) as resources for publicity.  
• Ear mould making manual. |
| Resources (counterpart contributions) | • Individual users’ contribution, individual philanthropists.  
• Government contribution (India/Thailand)  
• NGOs local and international.  
• Business and commercial support (corporate sponsorship).  
• Civic groups. |

*Rehabilitation for the Deaf and Hard of Hearing*
The participants identified the various levels of services for special education, speech therapy and occupational opportunities. The group stressed that no discrimination should be allowed at any level of education, communication and occupation or any other community activity for the deaf and hearing impaired.

**Special Education**

All children should be integrated at appropriate levels as early as possible into the mainstream of the education system. Special schools for the children who cannot be mainstreamed should be better monitored and minimal educational standards ensured by appropriate accrediting authority. For mainstreaming, several supportive infrastructure should be in place:

- Visual highlighting in school education
- Family and community support
- Teachers’ training regarding the handling of the child
- Support to teacher in the institution
- Ongoing hearing aid assessment
- School-leaving should lead to vocational placement of the individual or further education opportunities. Appropriate marketable skills need to be developed by a trained counsellor at the school/institution.
- Occupational therapists/vocational trainers should be available at CBR and school level.
- Parent and community interaction for better outcome of education in special schools was considered essential.

**Special therapists**

Speech therapist should be made available in tertiary hospitals and special schools. Speech therapist should be available as a shared resource person for secondary hospitals and for children in the main stream of the neighbouring or regional schools.

**Vocational opportunities**

- Sufficient awareness in employment sector regarding productivity capabilities of the hearing impaired and deaf should be created.
Firms and employers should be offering employment to the deaf and hearing impaired and the governments should provide tax benefits and other incentives.

Financial support from government and private sector for self employment of the deaf will greatly help.

Associations for the deaf and hard of hearing should be formed to ensure access to their rights and to promote self-help groups.

7. RECOMMENDATIONS FOR ACTION POINTERS

**WHO**

(1) The network of WHO Collaborating Centres on Hearing Impairment should be expanded.

(2) Governments should be provided guidelines for development of programmes for prevention of deafness and hearing impairment (PDHI).

(3) WHO should take initiative to liaise with other UN agencies.

(4) All information, publications and research highlights on the subject should be distributed through the respective WRs.

(5) Hearing-impaired people should be involved in all aspects of better hearing planning.

(6) WHO should make recommendations to the UN for commemorating an International Year for Better Hearing.

(7) Additional support should be provided for the prevention of deafness and hearing impairment in Member Countries.

**National Governments**

(1) A national Deafness Prevention Programme should be formulated and implemented based on WHO guidelines, and needs assessment based on demographic information.

(2) A focal person should be appointed to coordinate the programme for prevention of deafness and hearing impairment in the Ministry of Health.

(3) A National Working Group should be setup for “Better Hearing” (Prevention of HI) to develop a national time bound plan based on WHO guidelines and national needs assessment. This committee should have representation from Government, NGOs, professional societies and organizations of the deaf.
Training institutions should be set up for training of relevant medical and paramedical personnel.

Finances and other resources should be allocated for prevention of hearing impairment, and funds identified and allocated to support projects that lead to better hearing.

Existing laws related to better hearing including on noise pollution, such laws where they do not exist should be enacted and enforced.

Research leading to better hearing should be supported. A National Better Hearing Day should be supported and promoted for advocacy purposes.

The human rights of the hearing impaired must be respected.

**NGOs**

1. All NGO’s and INGO’s should work within a clear Policy Guidelines formulated by the government.

2. NGOs/INGOs working with other disabilities should be encouraged to extend their work into PDH.

3. Networking within the NGOs/INGOs and with the government should be established.

4. Organize and involve existing INGOs that are already promoting “Better Hearing” such as CBM, Hearing International, IMPACT, International League of Hard of Hearing (IFHOH), World federation of the Deaf (WFD), AG Bell, etc. to develop a major international prevention campaign. These agencies would coordinate with WHO to meet time bound goals.

5. Cooperate and network with countries and clusters of like countries (e.g. Indochina, India, Sri Lanka, Maldives, Nepal/W. Pacific) to meetings of professionals in WHO regions for country clusters.

6. Develop communication media (newsletter, website and internet mail linkage group for information exchange)

7. Coordinate NGO level meetings

**Professional Societies and Professionals**

1. Designate a focal person in the professional society for PDHI.

2. Serve as technical advisers to the government on PDHI.

3. The societies should include PDHI in their meetings, congresses and in other academic and educational activities.
(4) Encourage members of their societies and international societies, such as IFOS, ISA, American Association of Otolaryngologists (AAOO), American Association of Audiologists (AAA), etc, as well as national professional societies to create awareness about deafness to implement interventions

(5) Network with the national, regional and international societies for cooperation towards Better Hearing

**Disabled Person Organizations (DPOs)**

(1) Disabled Persons Organizations should collaborate and work as a pressure group at all levels to express the needs for prevention of deafness.

(2) Strengthen and network with organizations of hearing impaired people amongst themselves at the national, regional and international levels.
Annex 1

PROGRAMME

17 December 2002

0900 to 1200 hrs

- Introduction, adoption of agenda
  Dr Madan Upadhyay, RA DPR
- Global perspective on deafness and hearing impairment
  Dr Andrew Smith, PDH WHO HQ
- Current issues and future directions for prevention of deafness in SEA
  Prof Dr Madan Upadhyay
- Results of the Multicentre Study on the prevalence and etiology of deafness in four SEA countries
  Prof Abraham Joseph

1330 to 1730 hrs

- Country presentations on Infrastructure Survey (mapping):
  Nepal
  Sri Lanka
  Thailand
  Bangladesh
  India
  Indonesia
- Country reports
  Bhutan
  Maldives
  Myanmar
- Discussion
- International Agencies and NGO involvement in the prevention of deafness and hearing impairment
  Prof. Suchitra Prasansuk (Hearing International)
  Silvana Inselmann (CBM India)
  Rathnarajah Navaratnam (IMPACT Sri Lanka)
18 December 2003

0900-1200 hrs

- Presentation: National Policy and Human Resources in SEA
  Prof. Hendarto Hendarmin
- Discussion
- Group Discussion on Planning Strategies
  National Policy & Programmes
  National Awareness, Policy, Laws
  1. National Programs
  2. Resource Mobilization
- Group Presentations:
  National Policy & Programmes

1300 to 1700 hrs

- Field Trip
  National Council for the Deaf, Children Resource Centre
  (BERA etc.)

19 December 2002

0900 to 1230 hrs

- Group Discussions on Planning Strategies:
  Human Resources Development
  Primary Ear & Hearing Health Care Workers
  1. Audiologists – Speech therapists
  2. ENT & Otologists
- Group Presentations:
  Human Resources Development
- Plenary discussions and Summary
- Presentation: EAR & Hearing Health Care and Rehabilitation Facilities in SEA
  Dr Bulantrisna Djelantik
- Discussion

1400 to 1700 hrs

- Group Discussions on Planning Strategies:
Ear & Hearing Care

1. Primary level
2. Secondary level
3. Tertiary level

➢ Group Presentations:
   Ear & Hearing Health Care

➢ Group Discussions on Planning Strategies:
   Rehabilitation
   1. Hearing aid fitting
   2. Speech therapy and special education
   3. Occupational opportunities

20 December 2002

0900 to 1230 hrs

➢ Group Presentations:
   Rehaabilitations

➢ Strengthening Networks in the Prevention of Deafness
   Prof. Dr Madan Upadhyay

➢ Group Discussion

➢ Group presentations: Strengthening Networks

➢ Plenary discussions and Recommendations

➢ Reading of Meeting Report and Summary by Rapporteur
   and its approval

➢ Closing
Annex 2

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Annex 3

OBJECTIVES AND EXPECTED OUTCOME

OBJECTIVES

(1) To review the situation of deafness and hearing impairment in each Member Country of the South-East Asia Region;

(2) To share experiences on successes and constraints in different countries; and

(3) To identify key actions related to prevention of deafness and hearing impairment to formulate strategic response to the problem in South-East Asia.

EXPECTED OUTCOME

(1) Priority for deafness and hearing impairment prevention is established and critical actions for prevention of deafness and hearing impairment are identified; and

(2) Strategic direction for prevention of deafness and hearing impairment in the Region identified.