

**National Programme for Prevention and Control of
Deafness
(NPPCD)**



Operational Guidelines for 12th Five Year Plan



**Ministry of Health & Family Welfare
Government of India**

NATIONAL PROGRAMME FOR PREVENTION AND CONTROL OF DEAFNESS

Hearing loss is the most common sensory deficit in humans today. As per WHO estimates in India, there are approximately 63 million people, who are suffering from significant auditory impairment; this places the estimated prevalence at 6.3% in Indian population. As per NSSO survey, currently there are 291 persons per one lakh population who are suffering from severe to profound hearing loss (NSSO, 2001). Of these, a large percentage is children between the ages of 0 to 14 years. With such a large number of hearing impaired young Indians, it amounts to a severe loss of productivity, both physical and economic. An even larger percentage of our population suffers from milder degrees of hearing loss and unilateral (one sided) hearing loss.

OBJECTIVES OF THE PROGRAMME

1. To prevent avoidable hearing loss on account of disease or injury.
2. Early identification, diagnosis and treatment of ear problems responsible for hearing loss and deafness.
3. To medically rehabilitate persons of all age groups, suffering with deafness.
4. To strengthen the existing inter-sectoral linkages for continuity of the rehabilitation programme, for persons with deafness.
5. To develop institutional capacity for ear care services by providing support for equipment, material and training personnel.

Long term objective: To prevent and control major causes of hearing impairment and deafness, so as to reduce the total disease burden by 25% of the existing burden by the end of 12th Five Year Plan.

COMPONENTS OF THE PROGRAMME

- 1) **Manpower training and development** . For prevention, early identification and management of hearing impaired and deafness cases, training would be provided from medical college level specialists (ENT and Audiology) to grass root level workers.
- 2) **Capacity building** . for the district hospital, community health centers and primary health center in respect of ENT/ Audiology infrastructure.
- 3) **Service provision**. Early detection and management of hearing and speech impaired cases and rehabilitation, at different levels of health care delivery system.
- 4) **Awareness generation through IEC/BCC activities** . for early identification of hearing impaired, especially children so that timely management of such cases is possible and to remove the stigma attached to deafness.

STRATEGIES

- To strengthen the service delivery for ear care.
- To develop human resource for ear care services.
- To promote public awareness through appropriate and effective IEC strategies with special emphasis on prevention of deafness.
- To develop institutional capacity of the district hospitals, community health centers and primary health centers selected under the Programme.

PROGRAMME EXECUTION & EXPANSION

The Programme was a 100% Centrally Sponsored Scheme during 11th Five Year Plan. However, in as per the 12th Five Year Plan, the Centre and the States will have to pool in resources financial norms of NRHM mutas mutandis. The Programme was initiated in year 2007 on pilot mode in 25 districts of 11 State/UTs. The Programme has been expanded to 192 districts of 20 States/UTs. In the 12th Plan, it is proposed to expand the Programme to additional 200 districts in a phased manner probably covering all the States and Union territories by March, 2017.

EXPECTED BENEFITS OF THE PROGRAMME

The Programme is expected to generate the following benefits :-

- i. Availability of various services like prevention, early identification, treatment, referral, rehabilitation etc. for hearing impairment and deafness as the primary health center / community health centers / district hospitals largely cater to their need.
- ii. Decrease in the magnitude of hearing impaired persons.
- iii. Decrease in the severity/ extent of ear morbidity or hearing impairment.
- iv. Improved service network/referral system for the persons with ear morbidity/hearing impairment.
- v. Awareness creation among the health workers/grassroot level workers through the primary health centre medical officers and district health officers, which will percolate to the lower level health workers functioning within the community.
- vi. Capacity building at the district hospitals to ensure better care.

Central Coordination Committee (CCC) –

A Central Coordination Committee will be constituted at the central level with the following members to provide technical inputs and facilitate implementation of the Programme:

• Representatives of Directorate General of Health Services/Ministry of Health & Family Welfare	2	
• Adviser NPPCD		1
• Representative of WHO		1
• ENT specialists/experts	2	
• Audiologists and Speech therapists	2	
• Public Health expert	1	
• Representative of RCI	1	

I. Central Level-

Central Cell-

A support to the Programme Division in the Ministry of Health & Family Welfare will be provided by a team with necessary technical support to the States/District level functionaries in successfully implementing the programme.

2. The team will put in place an effective Management Information System (MIS) for collection of data for effective supervision and monitoring of the Programme.

The Cell will be manned by following Manpower on contractual basis-

- i. National Consultants 2 (Monthly salary of Rs. 60000/-)
- ii. Programme Assistants 1 (Monthly salary of Rs. 30000/-)

- | | | |
|------|---------------------|-----------------------------------|
| iii. | Data Entry Operator | 1 (Monthly salary of Rs. 15000/-) |
|------|---------------------|-----------------------------------|

II State level:

State Cell-

To strengthen Monitoring of the programme at State level. The Cell will be manned by following Manpower on contractual basis-

- | | | |
|------|----------------------|------------------------------------|
| i. | Consultant | 1 (Monthly salary of Rs. 50000/-)* |
| ii. | Programme Assistant: | 1 (Monthly salary of Rs. 25000/-)* |
| iii. | Data Entry Operator | 1 (Monthly salary of Rs. 15000/-)* |

State Health Society and Programme Committee (under NRHM)-

Already constituted state mission under NRHM will look into the activities at state level. Under the programme, funds will be transferred to State Health Society, for carrying out various activities through District Health Society.

Functions

- Preparation of District plans for implementation of National Programme for prevention and control of Deafness.
- Monitor and supervise Implementation of National Programme for Prevention and Control of Deafness in the state in reference to the programme activities related to Training of Medical and non-medical professionals, IEC and Social mobilization and Manpower development.
- Release and monitor flow of funds to District Health Societies.
- Review and take appropriate measures in the expenditure of funds by District Health Society.

State Nodal Officer-

State Nodal Officer preferably an ENT surgeon at the directorate/ Secretariat level will provide technical guidance and expertise to the State Health Society for the purpose of implementation of the programme in the various districts of the state.

III District level

District Health Society and Programme Committee (under NRHM)-

Functions

- ◆ Planning : Preparation of District Micro-plan based on magnitude and distribution of deaf/hearing impaired persons and resources available for ear care.
- ◆ Implementation of the programme through utilization of government facilities, involvement of NGOs and community participation.
- ◆ Monitoring of programme: activities and quality control.
- ◆ Financial and Material Management ;
- ◆ Social mobilization and public awareness
- ◆ Orientation of various functionaries of health and other related sectors.
- ◆ Procurement of equipments and other materials.
- ◆ Arrangements for screening camps- through identified NGOs, having adequate infrastructure for carrying out activities under the programme.
- ◆ Monitoring and Financial Assistance for organizing camps.

District Hospital:

It is proposed to strengthen the ear care services at district level by providing manpower support such as one ENT Surgeon, one Audiologist, one Audiometric Assistant and one Instructor for hearing impaired at each district on contractual basis.

- i. **ENT Surgeon:** An ENT Surgeon with Post Graduate Qualification wherever ENT specialists are not present in the district hospital. The job responsibility of the Contractual ENT surgeon will be as under:
- To provide ENT Clinical Services at the District Hospital,
 - Conducting Training Programmes

Proposed salary: Rs 60,000 per month with a yearly increment of 10%.

- ii. **Audiologist (Audiologist & Speech language Pathologist):** A technical person with 4 years graduation in Audiology & Speech language Pathology. The job responsibility of the Audiologist will be as under:
- Provision of audiological services & prescribing hearing aids
 - Assist in training programmes
 - Monitoring and Evaluation of the Programme
 - Maintenance of Database

Proposed Salary: Rs. 30,000 per month with a yearly increment of 10%.

- iii. **Audiometric Assistant:** A technical person with 1 year diploma in Audiology. The audiometric assistant will provide support to CHC in screening of HI persons. The job responsibility of the Audiologist will be as under:
- Assist in providing audiological services
 - Visit CHC by visiting on fixed day for screening of HI persons
 - Assist in training programmes
 - Monitoring and Evaluation of the Programme
 - Maintenance of Database

Proposed Salary: Rs. 15,000 per month with a yearly increment of 10%.

- iv. **Instructor for the Young Hearing Impaired Children:** It is proposed that a Instructor may be inducted on contractual basis, to look after the therapy and training of the young hearing impaired children at the district level. The job responsibility of the Instructor will be to provide training, therapy and early education for the young hearing impaired children.

Proposed salary: Rs. 15000 per month with a yearly increment of 10%.

SERVICE DELIVERY AND REFERRAL SYSTEM

I. Primary level- CHCs/PHCs/SCs/Primary School teachers/Health Workers/Panchayat

Functions:

- ◆ Early identification of cases of hearing impairment and their management in collaboration with NRHM (RBSK- Rashtriya Bal Swasthya Karyakram).
- ◆ Primary ear care.

- ◆ Promoting public awareness in respect of prevention of deafness.
- ◆ Sensitization training of health workers.
- ◆ Support to School Ear care programme.

II. Secondary level- District Hospital

Functions:

- ◆ Management of cases referred from PHCs/CHCs.
- ◆ Organization of Ear care screening camps in collaboration with NRHM and Ministry of Social Justice & Empowerment (M/o SJ&E) .
- ◆ Organization of School Ear Care Programme.
- ◆ Training of manpower- PHC doctors, nurses, Audiometric assistants, health workers, school teachers.

III. Tertiary level-State Medical College

In each state, one medical college has been identified to act as the Center of Excellence and referral center for the districts covered under the programme in that state. Two ENT surgeons and one Audiologist from the medical college will be trained under the programme.

Functions:

- ◆ Training of Manpower i.e. sensitization programmes and surgical training workshops
- ◆ Management of referral cases, especially the difficult cases for diagnosis and management.

PROGRAMME COMPONENTS

1. MANPOWER TRAINING & DEVELOPMENT

Objectives:

1. To orient all the Health Care personnel from the district to grassroot level about prevention, promotion, early identification and rehabilitation of all types of ear diseases leading to deafness.
2. To make these personnel aware of the existing facilities available for deafness in order to facilitate appropriate referral.
3. To sensitize the health care personnel regarding their specific roles in the programme.
4. To enable the health providers to provide a leadership role in creating awareness about hearing impairment.
5. To facilitate development of suitable manpower, in order to be able to implement this programme in the entire nation, in a phased manner.

Training would be imparted to the following functionaries at all levels:

- Sensitization of the State medical college experts
- District level ENT officers
- Sensitization of Audiologists
- Medical Officers under CHC/PHC
- Obstetricians and Pediatricians at the district and CHC level
- Medical Officer under School Health Scheme
- Medical Officers involved in industrial health available in the district
- Multi Purpose Workers- male and female
- Primary School teachers at village level
- Functionaries at grass root level such as
 - Anganwadi workers
 - Accredited Social Health Activist (ASHA)
 - Trained Birth Attendants

TRAINING SCHEME

I. Sensitization and Awareness of the doctors and Audiologists at the Medical College level

Objectives: Sensitization to the objectives of the programme and definition of role of the Medical College in the programme.

Participants: 2 doctors (preferably, the Head of Department of ENT and another ENT doctor, who may be the designated coordinator of the activity) and an Audiologist from the designated medical college would be sensitized to the program.

Resource persons: Central Coordination committee will conduct this training.

Venue: Maulana Azad Medical College, New Delhi/ Identified Regional Training Centres

Duration: 1 day

Contents: A 5 hour sensitization training programme. This will be dealing with:

- ◆ Need for the programme
- ◆ Outline of the programme objectives
- ◆ Methodology to be followed for implementation of the programme
- ◆ Role of the State Medical College in the programme
- ◆ Introduction to the training modules to be used at all levels

Training material required: Copy of the programme to be given to all participants as well as the relevant training modules.

Budget: Provision of TA, DA (including accommodation) for training under the programme as per existing NRHM norms.

II. Training of District Hospital ENT Doctors and Audiologists

ENT surgeon and Audiologists at the District level will be nodal persons for coordinating the ear and hearing care activities in the district. They need to be trained for skill up gradation and re-orientation.

Objectives:

- Sensitization about the programme
- Definition of their respective roles
- Skill reorientation

Participants: ENT surgeon and Audiologist/ working at the District Hospital from each district.

Resource persons: Co-ordinators at the State Medical College.

Venue: Identified Regional Training Centres

Duration: 3 days for the ENT surgeons and 2 days for the Audiologists

Content: The training module will be based on the already existing WHO module (Annexure 1).

- ◆ Sensitization and awareness regarding the programme. The pivotal role of the District level ENT surgeon and audiologist will be outlined. They will be

introduced to the training modules for the Primary level doctors and other health care personnel.

- ◆ Hands on surgical training meant as a reinforcement course for the doctors. Micro-ear surgeries pertaining to deafness correction including Myringoplasty, Tympanoplasty, Stapedectomy and Mastoidectomy will be covered in this period.
- ◆ Reorientation of diagnostic and therapeutic skills will be done for the Audiologists/ audiometricians.

Evaluation: Pre and Post test will be done based on the course content.

Budgetary requirements: Provision of TA, DA (including accommodation) for training at identified Regional Training Centres under the programme as per existing NRHM norms.

III.Sensitization Training of Pediatricians and Obstetricians:

Objectives: To Create awareness amongst Pediatricians and /Obstetricians regarding causes of deafness. To sensitize them to the importance and techniques of early identification of hearing loss amongst the newborns and its causes.

Participants: The Pediatricians and Obstetricians at the level of the Community health Centre and District hospital will be trained.

Resource Persons: ENT Specialist and Audiologist at the District hospital.

Venue: District hospital

Duration: 1 day

Content:

- ◆ Sensitization to the various factors and causes responsible for hearing loss in new born and young children with special emphasis on the antenatal and perinatal causes.
- ◆ Prevention of prolonged labour and early resuscitation of asphyxiated babies in respect of preventing hearing loss in new borns.
- ◆ Risk factors for hearing loss and the identification of hearing loss in the very young children.
- ◆ Aware of the diagnostic facilities available in this regard so that they can refer all children, who may potentially be hearing impaired for diagnosis and management at appropriate level of care.

Training Material: Training modules.

Evaluation: By Pre-test and post-test

Budgetary requirement: Provision of TA, DA under the programme as per existing NRHM norms.

IV.Training of the doctors at the Primary Health Centre and Community Health Centre

Objectives:

- ◆ Sensitization about the National Programme for Prevention and Control of Deafness.
- ◆ Creation of awareness regarding the preventable causes of hearing loss/Deafness.
- ◆ Reorientation in early diagnosis and treatment of common ear diseases/community ENT.
- ◆ Introduction to Training Modules for carrying out training of Health care workers in the community.

Participants:

- ◆ Doctors at the Primary Health Centre
- ◆ Doctors under the School Health Scheme
- ◆ Doctors working in various industrial units in the districts

Resource Persons: District level ENT Surgeons/Audiologists of the respective district. In addition a Central/State faculty shall be associated.

Venue: Districts Hospital

Duration: 2 days

Content:

- ◆ Sensitization and awareness regarding the program
- ◆ Skill building with regard to use of Otoscope and diagnosis
- ◆ Management of common ear diseases
- ◆ Exposure to rehabilitation strategies for hearing/speech impaired children.
- ◆ Introduction to the training module for the Health care workers &/or school teachers.

Training material: Training Modules

Training evaluation: Pre test and Post test will be done based on the curricula.

Budgetary requirement: Provision of TA, DA (including accommodation) under the programme as per existing NRHM norms.

V. Training of Public Health Nurses, Multi Purpose Workers male and female (ANMs), Anganwadi Supervisors (AWW Supervisor) and Child Development Project Officers (CDPO)

At the grass root level, primary health care is also provided by Paramedical personnel and PHC nurses. Thus primary ear care needs to be greatly strengthened with training of PHC workers along with sensitization of supervisors from ICDS scheme .The involvement of supervisory functionaries from ICDS would facilitate involvement of grass root level functionaries.

Objectives:

- ◆ To sensitize the workers regarding the programme and regarding the ear and hearing care.
- ◆ To enable them to identify deafness at an early age.
- ◆ To motivate them for awareness generation in the community.

Participants:

- ◆ Public Health Nurses of the PHC level
- ◆ Male and female MPWs at the subcentre level
- ◆ Anganwadi worker Supervisors and Child Development Project Officers, in the district.

Venue: Community Health Centre/ PHC.

Resource Persons: PHC/CHC doctors/RCI Rehabilitation Professionals.

Duration: 1 day: 4 hours for lectures based on the training modules and 2 hours for discussion & FAQs.

Content:

- ◆ Sensitization and awareness regarding the deafness prevention programme and hearing disorders.

- ◆ Their role in facilitating early detection of hearing loss by family members and grass root level workers through one to one communication, asking pertinent questions that may indicate hearing loss in a child as well as referral and guidance.
- ◆ Introduction to the questionnaires.
- ◆ Sensitization towards the training module of the grassroots level worker.

Training material: would include modules, samples of questionnaires and other IEC material.

Training evaluation: Pre and Post-test would be done.

Budgetary requirements: Provision of TA, DA under the programme as per existing NRHM norms.

VI. Training of Health workers at Grass root level: Anganwadi workers (AWW), ASHAs, TBAs:

Objectives:

- ◆ Sensitization towards the programme.
- ◆ Orientation towards ear and hearing care in order to facilitate primary and secondary prevention.

Participants:

- ◆ AWW
- ◆ ASHA, wherever available.
- ◆ TBAs

Training will be done in batches of 60-70 in each of the PHCs.

Training to be done by: ANMs/AWW Supervisors/CDPOs/RCI Rehabilitation Professionals (in H.I.). The modalities of training will be worked out with the Medical Officer in charge of the PHC, who will also be the co-ordinator for this training.

Venue: Primary Health Centre.

Duration: 1 day

Content:

- ◆ Sensitization and awareness regarding the programme.
- ◆ Enhancement of competencies.
- ◆ Information about the importance of ear care and hearing for leading a physically and socially useful existence.
- ◆ Defining specific roles in order to facilitate early detection and referral.

Training material: Modules along with IEC material.

Post-training evaluation: Pre-test and Post-test to be done.

Budgetary requirements: Provision of TA, DA under the programme as per existing NRHM norms.

VII Training of the Primary School teachers and Parents of Hearing/Speech impaired children at the village level:

Objectives:

- Orientation towards the preventable causes and ill effects of hearing loss in a young child.
- Sensitization towards the early identification of such children and the treatment options/facilities available at different levels of health care.
- Introduction to the proforma/questionnaire to be filled by the students.

Participants:

- One Primary school teachers from each village in the selected districts.
- Teachers with preferably science background will be identified at each school.

Content:

- Sensitization and awareness regarding ear and hearing care.
- Introduction to the use of a proforma for carrying out screening in the school children for ear diseases and speech and hearing disorders.
- Sensitization to the IEC material, to be used for creation of awareness among the school children.

Resource Persons :

- Training will be conducted by the PHC doctors, trained under the programme and locally available Rehabilitative Professionals in Hearing Impairment.

Venue : One selected local school of the area.

Training material: Modules /Training material/ Questionnaire

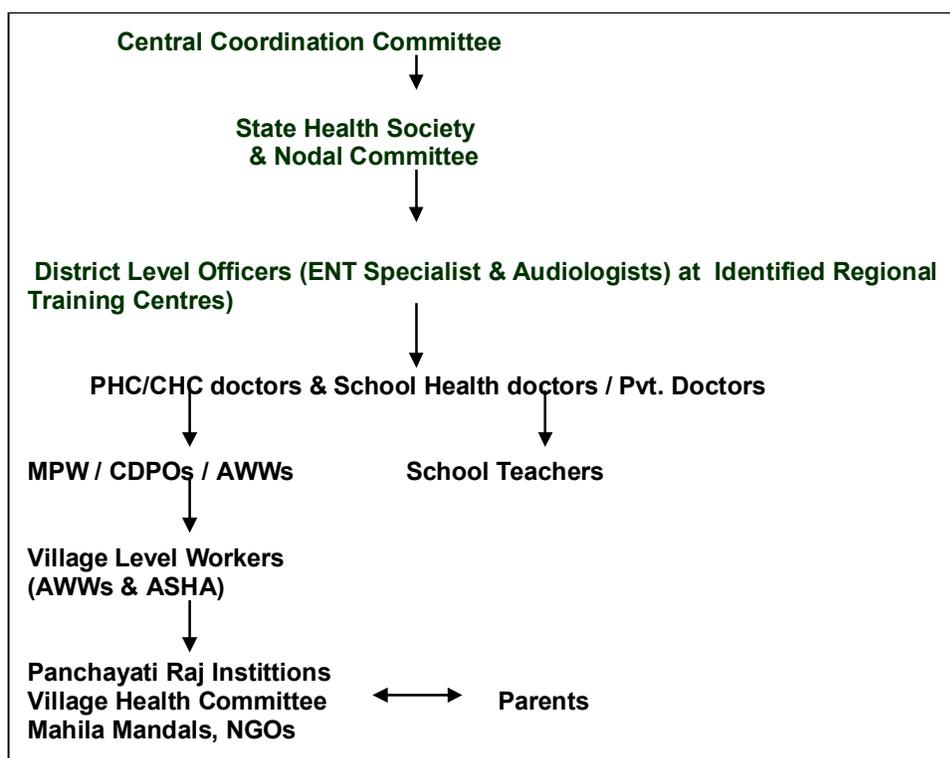
Post-training evaluation: Pre-test and Post-test training evaluation would be done.

Training material: Modules and IEC material

Budgetary requirements: Provision of TA, DA under the programme as per existing NRHM norms.

A budgetary provision of Rs.10.00 lakhs per district has been made for above seven level training programmes.

Training Scheme:



SERVICE PROVISION INCLUDING REHABILITATION in collaboration with NRHM & M/o SJ&E

Service components will include:

- Early detection
- Ear Screening camps
- Treatment: medical and surgical
- Appropriate referral
- Rehabilitation of hearing and speech disorders and hearing aid provision.
- Awareness creation in the community.

1. Early Detection

- The detection would be by sensitized personnel at grass root level including family members/parents, selected school teachers, MPWs at subcentre level, Public Health Nurses & medical officers in PHCs and CHCs and district level personnel. Personnel at all levels would be assigned a specific task in order to ensure that the right guidance is provided at the appropriate time to the affected persons.
- House to house surveys will be conducted by the AWWs & ASHAs, under the supervision of the male and female MPWs for detection of cases of hearing impairment and deafness. The deafness cases will be noted in the disability column of ANM's village register.
- The MPWs will maintain records of each family based on a Family performa provided to them.
- The District level Pediatricians and Gynecologists will be responsible for referring any child born of a high risk pregnancy or delivery, as well as other children who are exposed to a high risk factor in infancy and who show features suggestive of hearing impairment. These children will be screened by the district level ENT doctor / Audiologist with OAE and then subjected to diagnostic tests.
- School teachers will undertake to screen the children in the school with the help of pre-prepared proformas. These will help to identify children with any ear or hearing problem. They will then be referred to the School Health doctor for evaluation, diagnosis and guidance regarding treatment.

2. Ear Screening Camps

Functions

- ◆ Screening camps will be organized in collaboration with NRHM (RBSK)/ M/o SJ&E at the PHC/CHC and District level for screening the general population in respect of ear problems, hearing impairment and deafness.
- ◆ Detection and treatment of common ear problems.
- ◆ Spreading awareness regarding ear problems, early detection of deafness, available treatment and health care facilities for referral of such cases.
- ◆ Education of community, especially the parents of young children regarding importance of right feeding practices, various common ear problems, early detection of deafness in young children and available treatment for hearing impairment/deafness.
- ◆ Education of Panchayat members, members of Mahila Mandals and Youth leaders.

Conduct of Screening Camps

- ◆ Ear screening camps will be conducted by the PHC/CHC doctors and district level ENT specialists, trained under the programme.
- ◆ The screening camps will be facilitated in collaboration with NRHM (RBSK) or by the NGOs, identified by the M/o SJ&E/ District Health Society. These NGOs will require adequate infrastructure to carry out screening camps and experience of work at the community level.
- ◆ One screening camp will be organized per month at any PHC or CHC or District hospital by rotation.

Budget: No budgetary provision has been made for screening camps under NPPCD.

Guidelines for conducting screening camps as **Annex -2**

3. Treatment

Treatment of all affected persons would be undertaken at the following levels:

- Public Health Nurses and MPWs: would provide treatment of common ear ailments such as Wax, Acute Suppurative Otitis Media etc. under the guidance of the PHC doctor. The Public Health Nurses &MPWs will have the capacity to distribute relevant ear drops and medicines under the guidance of the PHC doctor.
- Trained PHC/CHC doctors will provide early diagnosis of ear diseases and treatment of all common ear ailments. All persons requiring special diagnostic facilities, complicated cases and those needing surgical intervention will be referred to the District hospital.
- District hospital: The District level ENT doctors and Audiologists will provide comprehensive preventive, promotive and curative and medical rehabilitative services. Wherever feasible, suitable linkages would be developed with the Comprehensive Rehabilitation Centres (CRC) and DDRRC in coordination with the Ministry of Social Justice & Empowerment, for provision of rehabilitative services.
- The District level Paediatricians will also be responsible for treating ear diseases such as Acute Otitis media, so that progress to Deafness can be prevented.

4. Referral services:

Effective linkages would be developed from peripheral level to district level with the help of functionaries and personnel from grass root level (AWW, ASHA and sensitized parents and PRIs), subcentre level (Male and female MPWs), PHC level medical officers, Public health nurses, School teachers and School health doctors, ENT private practitioners and District level officers.

5. Rehabilitation and Hearing Aid provision:

- ◆ All patients who are identified as having an ear problem that either requires surgery, hearing aid fitting or rehabilitative therapy will be referred to the ENT doctor and Audiologist at the district level.
- ◆ Those who need surgery will be given the appropriate treatment at the district hospital.
- ◆ Complicated cases that cannot be adequately handled at the District hospital will be further referred to the State Medical College for expert treatment.
- ◆ Patients who suffer with Sensorineural hearing loss that is not amenable to medical or surgical correction and which requires hearing aid, will be fitted with the same at the district level which will be provided by Ministry of Social Justice & Empowerment. This will include children who are suffering with Bilateral sensorineural hearing loss.

- ◆ The hearing aids will be issued as per existing rules. It is proposed that collaboration with the Ministry of Social Justice & Empowerment will be established for this purpose.
- ◆ The requirement for Speech therapy and Hearing therapy will be met with by the Audiologist at the District level.

Budget- Under NPPCD, no budgetary allocation has been kept separately for provision of hearing aids.

Guidelines for distribution of hearing aids as **Annex - 3**

6. Awareness Creation among Parents/ community:

- ◆ Community level health workers and doctors will undertake this activity on a continuous basis. This will also form a part of the IEC activities at various levels.
- ◆ Sensitization will be done regarding various aspects relating to early detection of hearing loss. They will be educated about the various ill effects of hearing loss on the speech, mental and social development of the child.
- ◆ Information regarding various treatment modalities as well as techniques of rehabilitation.
- ◆ Sensitization to ill effects of hearing loss in the elderly so that they may refer the aged hearing impaired persons for suitable management/rehabilitation.

Budget: Provision of Rs 20.00 lakhs at State level and in addition Rs 2.00 lakhs at each district level has been kept for IEC activities under NPPCD.

CAPACITY BUILDING

i) **At the PHC and CHC level:** for screening of ear morbidity and detection of hearing loss, the equipment required would be:

PHC Kit which will consist-

- a) Head Lights
- b) Ear Speculas
- c) Ear Syringes
- d) Otoscope
- e) Jobson Horne Probes
- f) Tuning forks of 256, 512, 1024 Hz
- g) Noise Maker
- h) Pure tone audiometer (only for CHC)

Logistics/Medicines :

Medicine kit i.e. Borospirit ear drops, wax dissolving drops and Antibiotic ear drops, including cotton swabs and normal saline solution, for use by the Health care workers.

Budget : Provision of Rs. 20,000/- per kit for PHC and Rs 50,000 per kit for CHC has been kept.

ii) District hospital:

The District hospital is to be an important center for the management of ear problems and deafness cases, which are referred from the health care facilities at various levels. Provision of following equipments has been made-

S. No	Equipment required
1	Microscope
2	2 sets of Microdrills with 2 handpeices and burrheads
3	2 sets of micro-ear surgery instruments.
4	Pure Tone Audiometer
5	Impedance Audiometer
6	OAE machine
7	Sound treated room

Technical specifications of the equipments to be procured under National Programme for Prevention and Control of Deafness is as Annexed at 1.

Budget : Provision of Rs. 20.00 lakh per district hospital has been kept.

iii) State Medical College

Medical colleges with existing audiological and ENT set up will act as tertiary referral and training centre.

Technical specifications of the equipments to be procured under National Programme for Prevention and Control of Deafness

SURGICAL OPERATING MICROSCOPE FOR E.N.T. USE-

Surgical Operating Microscope with heavy sturdy floor base with precision to produce sharp images with following specifications,

Magnification Range	:	4X to 25X, in 5 steps.
Field of View	:	52 mm to 8 mm
Objective Focal Lengths	:	200mm//400mm
Fine focusing range (Manual):	:	24mm . 30mm
Tilt Range of optical head	:	Axial + 90deg. With side tilt provision

Illumination: High intensity up to 100,000 Lux with built-in cold light source with fiber optic light guide with provision for filters.

The microscope should be versatile with provision to tech accessories like CCTV Attachment, single monocular co-observation tube.

- Two years warranty /Guaranty to be given with the equipment.
- Rates for five years comprehensive maintenance contracts to be quoted separately after warranty period.
- Minimum of two routine maintenance services/inspections to be provided annually.
- The rates of Comprehensive Maintenance Contract (CMC) for 5years should be quoted along with the price rate. CMC rates will be included in calculating the total cost for evaluation of price bids.
- Price quoted should be inclusive of their installation at site.

MICRODRILL SYSTEM-

Micromotor system having following specifications:

Speed Variation	:	Maximum should not be less than 30,000 rpm
Rotations	:	Clockwise & Anticlockwise
Foot Control	:	Variable speed type

Surgical type hand pieces suitable for ENT. Straight type & angled type.

- Two years warranty /Guaranty to be given with the equipment.
- Rates for five years comprehensive maintenance contracts to be quoted separately after warranty period.
- Minimum of two routine maintenance services/inspections to be provided annually.

- The rates of Comprehensive Maintenance Contract (CMC) for 5years should be quoted along with the price rate. CMC rates will be included in calculating the total cost for evaluation of price bids.
- Price quoted should be inclusive of their installation at site.

EAR SURGERY INSTRUMENTS-

The surgical instruments should be made using top quality medical grade hardened stainless steel with defined specifications like AISI-410, AISI-420, AISI-304, AISI-303, AISI-440 etc. using guidelines of ASTM standard F899-94 and ISO 7153 and with a dull finish.

Each centre will procure at least two sets of following instruments used for microsurgery of the ear.

1. Mollison's Mastoid wound retractor
2. Ear speculum (black finish) 5 5 5 5 5 .. Set of 5 of different sizes
3. Self retaining ear speculum 3 3 3 3 3 .. Set of 3 of different sizes
4. Perichondrium/Periosteal elevator
5. Cell seaker
6. Lempart curette 3 3 3 3 3 3 3 3 3 .. Set of 3 of different sizes
7. Crocodile forceps-micro
8. Cup forceps/granulation forceps- micro
9. Myringotomy knife
10. Tympano meatal flap elevator
11. Circular knife
12. Flag knife/Radial knife
13. Straight needle/pick
14. Curved needle/pick
15. Right angle Needle
16. Sickle knife
17. Micro scissors - straight,
18. Set for stapedectomy
19. Micro suction tips 5 5 5 5 5 5 5 5 5 . Set of 5 of different sizes
20. Set of Burrs : Tungston Carbide Cutting and Diamond Polishing Burrs.
(size 2mm, 3mm, 4mm, 5mm, 6mm, 7mm cutting and polishing).
21. Oscopes with 3.5 volts rechargeable battery with battery charger.

INDIGENOUS DIGITAL AUDIOMETER-

Essential

Power supply: 220 Volts, 50Hz

Transducer: headset with earphones (TDH 39, TDH 39P, TDH 49) & supraaural ear cushions (MX41 AR), insert earphones, bone vibrator (Radio ear b-71), Talk over microphone, Talk back microphone

Patch cords

Stimuli

Type: Pure tones (continuous, pulse tone, interuptor), Narrowband noise, speech noise, speech (monitored live voice and recorded voice)

Frequencies: 250Hz to 8000Hz in octaves for air conduction 250Hz to 4000Hz in octaves for bone conduction

Intensity:

-10dB HL to 120dB HL in steps of 5dB for air conduction

-10dB HL to 70 dB HL in steps of 5 dB for bone conduction from 250Hz to 4000Hz
Power supply: UPS/Battery backup & mains.
Self-calibration

- Two years warranty /Guaranty to be given with the equipment.
- Rates for five years comprehensive maintenance contracts to be quoted separately after warranty period.
- Minimum of two routine maintenance services/inspections to be provided annually.
- The rates of Comprehensive Maintenance Contract (CMC) for 5years should be quoted along with the price rate. CMC rates will be included in calculating the total cost for evaluation of price bids..
- Price quoted should be inclusive of their installation at site.

IMPEDANCE AUDIOMETER-

Essential

Power supply: 220 Volts, 50Hz

Probe tone: 220 or 226 Hz

Probe assembly with contralateral test facility (with supra aural earphones: TDH 39/TDH39A/TDH49/TDH49A/TDH 50 with MX 41 AR ear cushions or insert earphones (ER Tone 3A)

Test cavities (0.5, 2, 5 cc)

Probe tips - assorted

Printer

Tests required

- Compensated tympanometry (ear canal volume and tympanometric peak pressure)
- Ipsilateral and contralateral acoustic reflexes

Air pressure range: + 200da Pa to . 400 da Pa

Stimuli for acoustic reflexes:

Type: Pure tones

Frequencies: 500Hz, 1000Hz, 2000Hz and 4000Hz

Intensity : up to 120 dB HL

Power supply: Battery operated & main

Self-calibration

- Two years warranty /Guaranty to be given with the equipment.
- Rates for five years comprehensive maintenance contracts to be quoted separately after warranty period.
- Minimum of two routine maintenance services/inspections to be provided annually.
- The rates of Comprehensive Maintenance Contract (CMC) for 5years should be quoted along with the price rate. CMC rates will be included in calculating the total cost for evaluation of price bids..
- Price quoted should be inclusive of their installation at site.

OAE ANALYZER

Essential

Power supply: 220 Volts, 50Hz

Type of OAE: TEOAEs, DPOAEs

Stimuli: clicks at 80dB SPL for TEOAEs and 40-70 for DPOAEs

Stimuli frequency: 500 to 8000Hz; Intensity: 0-85 dB SPL, 5dB steps

Automatic F1 and F2 ratio calculation

Low battery warning

Serviceable probes; probe mount

Probe tips . assorted
Cleaning kit
Printer
Power supply: Battery operated
Can be used as stand alone or with a PC
Self-calibration
Separate probe for infants and adults

- Two years warranty /Guaranty to be given with the equipment.
- Rates for five years comprehensive maintenance contracts to be quoted separately after warranty period.
- Minimum of two routine maintenance services/inspections to be provided annually.
- The rates of Comprehensive Maintenance Contract (CMC) for 5years should be quoted along with the price rate. CMC rates will be included in calculating the total cost for evaluation of price bids.
- Price quoted should be inclusive of their installation at site.

SPECIFICATION OF SOUND PROOF ROOM-

Chamber features:

1. A single chamber sound treated room.
2. The wall of the chamber will be cavity walls filled with Sound insulation material.
3. The inside of the cubicle will have acoustic treatment on wall and ceiling and sound absorbent flooring.
4. Inner size of the cubicle should not be less than 8 ft. X 8 ft.
5. Air Conditioner: Split type at least 1 ton. A.C. should be fitted inside the chamber.
6. Door : There will be one sound treated door for the main entry which will be of 750mm (W).
7. Chamber should have one double glass window of at least 2ft.X 2ft.

PHC Kit-

1. Features and Specifications of Head Light

- Combination of xenon bulb and LED bulbs
- 18 lumens, xenon: 7.5 lumens, LED
- 90 degree tilting head
- Water resistant
- Push button switch
- Unbreakable polycarbonate lens
- Weighs less than 5 Oz with batteries
- Runs on alkaline batteries

2. Ear specula

- Troeltschs ear specula, adult size, set of 3
- Troeltschs ear specula, infant size, set of 3

3. Ear Syringe

- Ear syringe . stainless steel, 4oz capacity, 3 nozzles of varying sizes.

4. Otoscope

- All Plastic Moulded Head.
- 2.5v Halogen Bulb.
- Acrylic viewing window with magnification.
- Swiveling viewing window built into instrument.
- Four (4) Reusable Specula of different sizes.

5. Jobson Horne Probe

- Double ended --- serrated tip& smooth ring, length 140mm.
- Made up of good quality rust free stainless steel material

6. Tuning fork

- Of frequencies 512Hz
- Made up of good quality rust free stainless steel
- Should have minimum Decay time of 40 sec.
- Footplate should be present

7. Noise Maker

- Rattle toy made with food grade plastic.

GUIDELINES FOR SCREENING CAMPS TO BE HELD IN THE DISTRICTS

A. OBJECTIVES OF THE CAMPS:

- Identify all persons with ear diseases that are or can be the common cause of hearing loss (or any other complication) in the affected person, such as:
 - i. Wax
 - ii. Secretory Otitis media
 - iii. Suppurative Otitis media
 - iv. Otomycosis/otitis externa
 - v. Exposure to Noise
 - vi. Presbycusis
- Awareness generation about the common causes leading to hearing impairment and report to nearest PHC/CHC/district hospital for seeking medical advice.
- Management of cases with ear diseases wherever possible, ie for:
 - i. Wax: removal by probing/syringing etc to be done, if possible. Wherever this is not possible, suitable treatment for wax softening and removal must be initiated.
 - ii. Initiate medical treatment for Secretory Otitis media
 - iii. Initiate medical treatment for Suppurative Otitis media
 - iv. Initiate medical treatment for Otomycosis/otitis externa
- Refer for further management wherever required. This may be:
 - i Follow up for the medical treatment advised.
 - ii Surgical treatment
 - iii Audiological assessment or work up
 - iv Specialised diagnostic work up (x-rays, CT scan etc)
- Provide suitable guidance and advice to the patient and/or the family members regarding:
 - i Prevention of hearing loss
 - ii Need for surgical treatment
 - iii Need for rehabilitation therapy
 - iv Proper use of hearing aids.

B. INFRASTRUCTURE AND MANPOWER REQUIREMENT FOR THE CAMP:

For the camp, the following persons must be available:

- 2 Doctors: At least one of them must be an ENT surgeon (District level ENT doctor or from Medical College in the vicinity). The other doctor may be an ENT surgeon, if feasible or else may be an MBBS doctor who has undergone training under the programme.
- **At least one** and preferably two Audiologists or Audiological assistants should be there to facilitate the camp process. One of them ought to be the Programme assistant at the district level. However, till such a time as the Programme assistant post is not filled at the District hospital, any other person trained as an Audiologist or Audiological assistant may be recruited for the camp.
- Equipment required:
 - 1 Head light (available at the PHCs)

- 2 Otoscopes (1 is available at the PHC/CHC. The other may be brought along by the ENT doctor.)
- Tuning forks (available at the PHC/CHC)
- 2 or more aural probes (for wax removal)
- Syringe, cannula, saline etc for wax removal by syringing.

C. FUNCTIONING OF THE CAMP:

The screening camps will be organized in collaboration with NRHM (RBSK)/ M/o SJ&E. At the time of the camp, it is proposed that the following may be the methodology:

The patient/s who arrives at the camp will be reporting to the camp organizer / assistant first. The camp organizer will record the name of the patient and on the referral slip (as provided under the programme). The patient will then carry the slip to the doctor. The doctor will assess the patient and provide suitable treatment, guidance, and referral. Wherever, assessment of hearing is required, he/she can refer the patient to the audiologist/audiological assistant who will perform the informal hearing tests (voice tests) or tuning fork tests on the patient and send back to doctor or, wherever possible, take the necessary action on his/her own.

On the referral slip the diagnosis and advice would be noted. On the way out, the patient must show the slip to the camp assistant who will make the necessary entry in the register regarding the patient's diagnosis and action taken so that a suitable record be maintained. The format for this record is:

S.No.	Patient's name	Age /Sex	Diagnosis (including normal)	Action taken	Whether referred. If yes, place of referral (District/Medical College)

Once the camp has been completed, the camp organizer (NGO representative) will ensure that the data pertaining to the number of persons visiting the camps etc are compiled as per the format given above and the necessary information is sent (in the proforma provided) to the District nodal officer as well as to the Programme assistant at the District hospital.

**NATIONAL PROGRAMME FOR PREVENTION & CONTROL OF
DEAFNESS**

DISTRICT LEVEL PROFORMA for maintenance of Registry of Deaf

Report to be submitted for the month of _____ 2013-14

SCREENING CAMPS

Number of screening camps organized: _____

Number of patients screened in the camps: _____

Morbidities:

Morbidities	0-5years	5-14years	>14-50 years	>50 years
Hearing Loss				
Mild				
Moderate				
Severe				
Profound				

Morbidities	0-5years	>14years
CSOM		
ASOM		
Secretory OM		
Wax		
Ear Trauma		
Speech Problems		
Any other		

Guidelines for prescribing hearing aids under NPPCD

I. Procedure for hearing aid prescription for adults (cases who can speak):

1. **Unaided testing**

- Seat the case at a distance of 5 feet (~ 1.5 meters)
- Using a normal conversational voice level, present the following test items:
 - i. /a/, /i/, /u/, /m/, /s/, /sh/
 (Note: If any speech sound is not present in a particular language, then it need not be presented; Vowels should not be produced along with the consonants)
- The case is asked to repeat the speech sounds
- The number speech sounds correctly repeated is noted down as the '**Unaided score**'
- The speech sounds should be randomly produced and not in the same order.
 - ii. Ask the person to answer five questions (Eg: How many brothers do you have? Where do you live? What did you eat for lunch? What is your father's name? Do you drink coffee or tea?)
Avoid using questions having yes/no answers.
Note the number of questions answered correctly.
 - iii. Ask them to repeat five two syllabic words (Eg: toothbrush, sunset, armchair or idhar-udhar, ek-do, aas-paas)
Note the number of words repeated correctly.

2. **Aided testing:**

Aided testing involves pre-selection and selection of hearing aids. Details of how these are to be done are given below-

a. *Pre-selection of hearing aids*

Based on the air conduction thresholds or the degree of hearing loss, pre-select the following hearing aids and do the aided testing:

Sl No.	Hearing aid model	Fitting range
1	Model A	PTA ranging from 41 to 69 dB HL
2	Model B	PTA ranging from 70 to 89 dB HL
3	Model C	PTA ranging from > 90 dB HL

b. *Selection of hearing aids*

Aided testing for selection of hearing aids involves the following steps:

- The case is made to wear one of the three pre-selected hearing aids using a appropriately fitting ear tips or stock ear moulds
- Ensure that the hearing aid is switched off and the volume control is turned down while placing the hearing aid in the ear
- Switch the hearing aid on. Gradually increase the volume control setting to approximately 1/3rd of the total range (or set it at 2, if the numbers range from 1 to 4).
- Follow the same procedure as given in the unaided testing condition.
- This testing is done in **Hear only** mode.
- The number of speech sounds and words correctly identified, and the number of questions answered correctly is considered as the '**Aided score**'.
- If the case has very poor speech identification ability (SIS of <50 %), then test only for awareness of these speech sounds. Test if the case is aware of most of

- the speech sounds (i.e., 4 to 5 out of 6 in the Ling sound test) at normal conversation levels. If not, repeat the test using a higher gain hearing aid
- Before prescribing any hearing aid, ensure that the case can tolerate loud sounds, such as banging on a table, loud claps, banging on a door, hitting a drum (~80 to 90 dB HL).

II. Procedure for hearing aid prescription for children who have limited or no speech:

1. *Unaided testing for children who cannot be conditioned*

- Seat the child at a distance of 5 feet (1.5 meters)
- Present the following sounds, starting from a softer level and going up to a louder level:
 - Drum
 - Bell
 - Speech (Papa / Paapa / child's name / sounds /a/, /i/, /u/, /m/, /s/, /sh/)
- Look for behavioural responses to the presented sound - such as eye widening, eyeball movement, head turn, cessation of activity.
- Note down the level for each stimulus at which the response was observed in the unaided condition.

2. *Aided testing:*

Aided testing involves pre-selection and selection of hearing aids. Details of how these are to be done are given below.

a. *Pre-selection of hearing aids*

Based on the air conduction thresholds or the degree of hearing loss, pre-select the following hearing aids and do the aided testing:

<i>Sl No.</i>	<i>Hearing aid model</i>	<i>Fitting range</i>
1	Model A	PTA ranging from 41 to 69 dB HL
2	Model B	PTA ranging from 70 to 89 dB HL
3	Model C	PTA ranging from > 90 dB HL

b. *Selection of hearing aids*

Aided testing for selection of hearing aids involves the following steps:

- The child is made to wear one of the three pre-selected hearing aids using a appropriately fitting ear tips or stock ear moulds
- Ensure that the hearing aid is switched off and the volume control is turned down while placing the hearing aid in the ear
- Switch the hearing aid on Gradually increase the volume control setting to approximately 1/3rd of the total range (or set it at 2, if the numbers range from 1 to 4).
- Follow the procedure as given in the unaided testing condition.
- This testing is done in audio only mode.
- The hearing aid with which the child can respond at the lowest level is the one that can be selected
- (If more than one hearing aid is available in a category, test with at least two to select the more suitable hearing aid)
- Before prescribing any hearing aid, ensure that the child can tolerate loud sounds, such as banging on a table, loud claps, banging on a door, hitting a drum (~80 to 90 dB HL).

Format I

***FORMAT OF PRESCRIBING HEARING AID BY ENT SURGEON OF DISTRICT HOSPITALS UNDER NPPCD PROGRAMME**

NAME OF THE HOSPITAL / CENTRE:

Name of Patient

Case
Number

Age

Sex

Hearing Aid Make

Hearing Aid Model

For Right Ear

Vol:

Other
Settings

For Left Ear

Vol:

Other
Settings

Earmould Right

Shell / Skeleton /Canal Any other (Specify)

Earmould Left

Shell / Skeleton /Canal Any other (Specify)

Usefulness for

Awareness

Speech identification

(Audio mode / Audio Visual Mode)

Ease of listening

DATE:

Signature of Audiologist with seal.

Signature of ENT surgeon with seal

*This prescription shall be treated as supply order to the vendor

Copy to:

1. Patient

2. State Nodal Officer

3. Distt. ENT Surgeon (office copy)

FORMAT -II

FORMAT OF CERTIFICATE TO BE GIVEN BY ENT SURGEON / AUDIOLOGIST OF
DISTRICT HOSPITALS UNDER NPPCD PROGRAM FOR PAYMENT.

This is to certify that

- a. The hearing aid model/s _____ with serial numbers _____ prescribed in favour of _____ (Name of patient) was /were received in good condition, tested and found as per prescription.
- b. The earmould/s is /are suitable to the client

The bill for the above hearing aid/s and earmould/s may be admitted and passed for payment.

DATE:

Signature of Audiologist with Seal

Signature of ENT surgeon with seal

Certified that I, _____ have received the above hearing aid/s and ear mould/s in good condition and I also certify that I have not received any hearing aid in the last 3 years under any other scheme of Govt. of India.

Date:

Signature or Thumb Impression of patient / Guardian

Name of the patient / Guardian:

Full Address with Telephone No. (if any)

Copy to:

- | | |
|-------------------------------------|--|
| 1. State Nodal Officer | 2. Directorate General Health Services |
| 3. Distt. ENT Surgeon (office copy) | |

**Diagnostic Algorithm and Standard Treatment Guidelines for Management of
Common Ear Conditions**

Background

Deafness is defined as the inability to use hearing as a primary channel for receiving speech, even with amplification. Hearing loss is hearing impairment of various degrees.

It is estimated that there are approximately 63 million people in India suffering from hearing impairment. A significant proportion of cases of hearing loss are due to common ear diseases, which if diagnosed early and managed properly can significantly reduce the burden of decreased hearing.

Considering the burden of the problem and the burden of disability due to decreased hearing/deafness, there was a pressing need for developing guidelines for diagnosis and treatment of patients with ear diseases.

We have developed, in consultation with some of the leading experts in the country, an Algorithm for diagnosing common ear conditions and Treatment Guidelines for managing these conditions. The principal objective of this exercise is to aid in reducing the burden of preventable hearing loss in the country.

These guidelines have been developed with the objective of helping physicians, general practitioners or pediatricians at the primary and secondary level, who are often the first interface with a majority of patients, in arriving at a diagnosis of common ear conditions and instituting proper management.

Standard Treatment Guidelines

These guidelines are intended to cover the management of the common ear conditions which may lead to hearing impairment.

Common ear conditions which may lead to hearing impairment. (Click on the links below to see the guidelines)

1. Ear Wax
2. External auditory canal infections
3. Otomycosis
4. Acute Suppurative Otitis Media - ASOM
5. Chronic Suppurative Otitis Media - CSOM (Safe type)
6. Chronic Suppurative Otitis Media - CSOM (Unsafe type)
7. Otitis Media with Effusion - OME

Apart from these common ear conditions leading to decreased hearing there are other causes of preventable hearing loss, like excessive use of ototoxic drugs and noise induced hearing loss. These are also important causes of hearing loss and should receive adequate consideration.

Early screening for hearing loss and early rehabilitation is recommended to reduce the disability caused by hearing impairment.

Ear Wax-

Signs and Symptoms

- » Wax seen in the ear
- » Pain / decreased hearing / itching in ear

Treatment

- » In case of severe pain analgesic should be given
- » Wax softener ear drops, 3-5 drops three times a day for 4-5 days
- » Removal of the wax by gentle syringing (refer the patient if you are not familiar with the procedure of syringing)
- » If pain persists refer to an ENT specialist

Advice to the patient

- » Not to instill oil in the ear

- » Not to use ear buds or any sharp object for cleaning the ear

External Ear Canal Infections

Otitis externa, Furunculosis

Signs and symptoms

- » Pain and heaviness in the ear
- » Tenderness and swelling of the ear canal and surrounding area
- » Decreased hearing

Treatment

- » Topical ear drops (Steroid and antibiotic combination)
- » 10% Ichthammol glycerine packing (to be changed or removed after 24 hours)
- » Anti-inflammatory drugs
- » Systemic antibiotics [Amoxycillin+Cloxacillin / Amoxycillin]
- » If no improvement is seen in 5-7 days, refer to an ENT specialist

Advice to the patient

- » Not to scratch the ear with pointed objects
- » Keep the ear dry (prevent water from getting into the ear)

Otomycosis-

Signs and symptoms

- » Pain and heaviness in the ear
- » Itching in the ear
- » Decreased hearing
- » Whitish debris/ spores in the ear canal

Treatment

- » Antifungal ear drops three drops three times a day
- » Topical cleaning
- » Gentle syringing and dry mopping

Acute Suppurative Otitis Media (ASOM)-

Signs and symptoms:

- » Earache/fever/excessive
- » Crying/URI/decreased hearing/ear discharge
- » Congestion/bulging/perforation of the tympanic membrane

Treatment

1. Antibiotic therapy

- » Amoxycillin:
- » For children: 40- 60 mg/kg in three divided doses for 10-14 days
- » For adults: 500mg three times a day for 7 days. OR
- » Co-trimoxazole or Erythromycin (if allergic to penicillin) OR
- » Co-amoxyclav/Cefaclor (in case of no-response for 48-72

hours with above drugs)

2. Anti-inflammatory drugs for three days/till symptoms subside

3. In case of discharge . Borospirit/Ciprofloxacin/Ofloxacin ear drops

Refer to an ENT specialist if-

- » Patient develops features like vomiting with headache/facial palsy/dizziness/mastoid tenderness
- » Symptoms worsen even after 48 hours of second line medical treatment

Advice to the patient-

- » Keep the ear dry (prevent water from getting into the ear)
- » In case of discharge . dry mopping of the ear with a clean cotton wick.
- » Not to put any indigenous eardrops

Chronic Suppurative Otitis Media CSOM (Safe Type)

Signs and symptoms

- » Mucopurulent ear discharge for 3 months or longer hearing impairment
- » Central perforation of the tympanic membrane

Treatment

- » Dry mopping of the ear using a cotton wick (or gentle suction under vision)
- » Topical Borospirit/Ciprofloxacin/Ofloxacin with/without steroid ear drops
- » If fungal infection is suspected/seen . add topical anti-fungal agent (like Clotrimazole)
- » If acute symptoms like increased discharge/pain appear then add systemic antibiotics (as per ASOM treatment guidelines)
- » After control of infection the patient should be referred to an ENT specialist for surgical management.

Advice to the patient

- » Keep the ear dry (prevent water from getting into the ear)
- » Dry mopping of the ear with a clean cotton wick
- » Not to put any indigenous eardrops

Chronic Suppurative Otitis Media with Cholesteatoma (Unsafe Type)

Signs and symptoms:

- » Foul smelling ear discharge
- » Hearing impairment
- » On examination - retraction pocket or perforation of tympanic membrane with whitish flakes (cholesteatoma). Granulations or a polyp may be present.

Treatment:

All patients with unsafe CSOM need urgent referral to an ENT specialist because without treatment, serious, even fatal complications may occur. The treatment is essentially surgical.

Danger Signs for immediate referral:

Severe headache	Projectile vomiting
Vertigo	Neck rigidity
Facial nerve paralysis	Mastoid abscess

Otitis Media with Effusion (OME)

Signs and symptoms

- » Decreased hearing/fullness
- » Sometimes ear-ache

On examination - dull, retracted ear drum sometimes with air bubbles and a visible air-fluid level

Treatment

- » Most cases in children follow a course of spontaneous resolution so a policy of wait and watch with monthly follow up for three months is recommended.
- » If features of ASOM develop manage as per ASOM treatment guidelines
- » If the effusion does not resolve even after three months then referral is indicated

Diagnostic Algorithm

This diagnostic algorithm has been prepared keeping in mind the common presenting complaints of patients coming with ear infections. The common presenting symptoms are: pain in the ear, discharge from the ear, hearing loss and combinations of these complaints. We have made a simple algorithm which can be used by the health care provider to arrive at a diagnosis on the basis of the history of patients. The next level of diagnosis is based on the examination of the ear. This is possible at centers where facilities of otoscopy using an otoscope are available. Accordingly the health care provider can either refer the patient to an ENT specialist for further detailed evaluation and management or if possible, can manage the patient as per the treatment guidelines.

Diagnostic Algorithm Diagram

DIAGNOSTIC ALGORITHM FOR COMMON EAR CONDITIONS

