

Training Programme of ANM's Report National Programme for Prevention and Control of Deafness (NPPCD)

(26/11/2025 to 27/11/2025) (2 Batches)



Introduction

The National Programme for Prevention and Control of Deafness (NPPCD) South District of Delhi in collaboration with Sound Hearing 2030 and AGSG Health Foundation organized training programme to strengthen the competencies of healthcare providers in early detection, prevention, community awareness, and reporting of hearing loss.

The training was conducted in two batches, with Day 1 and Day 2 having identical content, ensuring uniform capacity building across groups.

The only variation between the two days was in the clinical/etiological session, where different experts facilitated the module. All other sessions and resource persons remained the same.

Session 1: Hearing Loss in Overall Perspective & Launching of NPPCD Programme

Resource Person: *Dr. Arun Kumar Agarwal*

Day 1 began with an overview of the burden of hearing loss and the public health significance of NPPCD. Key discussions included Global and Indian prevalence of Hearing Loss, Importance of early screening and intervention, Strategic objectives and components of NPPCD to improve ear and hearing care services and Expected outcomes and participant responsibilities.

He explained about NPPCD — Overview & Launch

- The NPPCD was launched by the Ministry of Health and Family Welfare (MoHFW), Govt. of India and official pilot phase started in 2006-07 (January 2007), initially covering 25 districts across 10 States and 1 Union Territory. The Objectives & Long-Term Goals:
- The NPPCD aims at multiple levels — prevention, early detection, treatment, and rehabilitation. Its key objectives include
- Prevent avoidable hearing loss due to disease or injury.

- Early identification, diagnosis, and treatment of ear problems responsible for hearing loss and deafness.
- Medical rehabilitation of persons of all age groups suffering from deafness.
- Strengthen inter-sectoral linkages to support continuity of rehabilitation programmes for persons with deafness.
- Build institutional capacity: equip District Hospitals (DHs), Community Health Centres (CHCs), Primary Health Centres (PHCs) with ENT/Audiology infrastructure, diagnostic/therapeutic facilities, trained manpower.
- Long-Term Goal: Reduce the total disease burden of hearing impairment/deafness by 25% (compared to baseline) by the end of the relevant plan period.
- From the pilot 25 districts (2006–07), the programme expanded. By mid-2010s, it covered **192 districts across 20 States/UTs**.
- It was planned to further expand to extend **384 districts** by the end of the 12th Five Year Plan (2017). According to the latest official sources, NPPCD is now implemented in **587 districts across 36 States/UTs** (as of 2024).
- The programme is integrated under the larger umbrella of National Health Mission (NHM), at state and district levels.

Session 2: NPPCD, Service Delivery & Referral System

Resource Person: *Dr. Suneela Garg*

Participants were oriented on NPPCD operations at different levels of care.

Hearing loss is a major global public health issue, affecting communication, development, education, mental health, and overall quality of life. Globally, 1.5 billion people experience hearing loss, and 430 million require rehabilitation services. This number is expected to rise to 700 million by 2050.

Global Situation: WHO estimates (2018) show 466 million people live with disabling hearing loss, including 34 million children. Around 60% of hearing loss is preventable. Nearly 1.1 billion young people are at risk of permanent hearing loss due to loud recreational listening. 200 million children globally experience preventable middle-ear infections. 80% of affected individuals live in low- and middle-income countries where ear and hearing care services are inadequate.

In India, the burden is significant: the country constitutes **17.5% of the world's population** and carries a large share of global hearing impairment cases.

- The programme is designed to deliver ear and hearing care services at **primary, secondary, and tertiary** healthcare levels.
- **Capacity building & infrastructure strengthening:** Providing ENT/Audiology equipment (audiometers, diagnostic tools, sound-treated rooms), surgical instruments for ear surgery, BERA/OAE facilities, etc.
- **Human resource & training development:** Training ENT specialists, audiologists, audiometric assistants, community-level health workers, ASHAs, school health personnel for ear care, detection and referral.
- **Service delivery:** Ear screening (especially newborn screening in hospitals), audiological evaluations (PTA, BERA/OAE), middle ear pathology management, ear surgeries

(tympanoplasty, mastoidectomy for chronic middle ear disease), hearing aid provision, speech & hearing rehabilitation, referral networks.

- **Awareness, prevention & outreach:** Information-Education-Communication (IEC) / Behaviour Change Communication (BCC) campaigns to raise awareness about ear diseases, prevention of avoidable hearing loss, early detection; community and school-level screening camps; integration with maternal-child health, child development and school health services.
- **Rehabilitation and long-term support:** Provision of hearing aids (particularly for children), referral for cochlear implants (when needed), speech therapy, disability certification, linkages for social support.

Impact of Unaddressed Hearing Loss: Unaddressed hearing loss affects:

- Listening and communication
- Speech and language development
- Cognition
- Education levels
- Employment and financial stability
- Mental health, social isolation, identity, and stigma

Prevalence

- NSSO 58th round (2002) identified hearing disability as the **2nd most common disability** in India.
- WHO protocol-based surveys (2003) estimated **6.3% prevalence** of hearing impairment—approximately **80 million people**.
- Adult-onset deafness: **7.6%**
- Childhood-onset deafness: **2%**
- Sensorineural hearing loss (SNHL) prevalence among newborns: **2–3 per 1000 live births**.

She talked about the ICMR National Task Force Study held in 2020

- Total surveyed: **92,097 people** across six major cities (Bangalore, Bhavnagar, Bhubaneswar, Raipur, Shillong, Shimla).
- **9.92%** were diagnosed with hearing loss (>25 dB).
- Causes included:
 - Ear wax – 15.9%
 - CSOM – 5.2%
 - Serous otitis media – 3.0%
 - Tympanic membrane perforation – 0.5%
 - Genetic – 0.2%
 - Non-infectious causes – 10.3%
 - Others – 13.1%
 - Unknown – 13.5%

Objectives of NPPCD: To prevent hearing loss due to disease or injury, ensure early diagnosis and treatment, provide rehabilitation, strengthen institutional linkages, and generate research and epidemiological data.

1. **Early detection, diagnosis, and treatment** of ear diseases causing hearing loss.
2. **Prevention of avoidable hearing loss** through health promotion and disease prevention.
3. **Rehabilitation** of individuals with hearing impairment across all age groups.

4. **Develop institutional capacity** by establishing infrastructure, equipment, and trained manpower.
5. **Strengthen inter-sectoral linkages** for comprehensive rehabilitation services.

Capacity Building: District Hospitals

- ENT surgeon, Audiologist & Speech-Language Pathologist, Audiometric assistant
- Instructor for young hearing-impaired children,
- Equipment: Operating microscopes, microdrills, audiometers, OAE, impedance audiometers, sound-treated rooms

Primary Health Centres: Oscopes, tuning forks, wax removal kits, Basic detection and screening tools and School health doctors for screening.

Service Delivery Structure

Primary Level (SC/PHC/CHC)

- Early identification of hearing impairment
- Basic primary ear care
- School-level screening in collaboration with RBSK
- Public awareness and community education
- Referral of suspected cases

Secondary Level (District Hospital)

- Diagnosis and management of ear diseases
- ENT services, audiometry, tympanometry, OAE screening
- Ear surgeries (e.g., tympanoplasty, mastoidectomy)
- Hearing aid fitting and audiological rehabilitation
- Training of PHC doctors, health workers, teachers

IEC and Awareness Activities

- Posters, TV clips, radio jingles, flip charts
- Development of IEC strategy at central level using a programme mascot
- Involvement of NGOs, panchayats, medical colleges
- Regular KAP (Knowledge, Attitude & Practices) surveys
- Focus on stigma reduction and early care seeking

National Hearing Awareness Campaign – 3rd March-Conducted annually on **World Hearing Day**, with:

- Gram Sabha activities in rural India
- Urban awareness programmes involving NGOs, local bodies, medical colleges
- Community-level screening and education
- Monitoring by district nodal officers

Purpose: To highlight that more than **50% of hearing impairment is preventable** and early action can significantly reduce the burden.

Future Plans:

- Strengthening routine IEC activities
- Enhanced surveillance system

- Stronger referral networks
- Capacity-building at all healthcare levels
- Nationwide awareness campaigns
- Integration with national health programmes

Session 3: Etiological Factors of Hearing Loss & Case Scenarios

Resource Persons (Day 1): Dr. Ravi Meher (Day 1) and Dr. Nikhil Arora (Day 2)

Topics: Causes of Hearing Loss

1. Congenital Causes

Congenital hearing loss is present **at birth** and may result from conditions affecting the fetus during pregnancy or complications during childbirth.

Key Congenital Factors

- **Maternal infections during pregnancy (TORCH)**
– *Toxoplasmosis, Rubella, Cytomegalovirus (CMV), Herpes* can affect fetal cochlear development.
- **Prematurity & Low Birth Weight**
– Babies <1500 g or born before 34 weeks have a higher risk of auditory system underdevelopment.
- **Birth Asphyxia / Hypoxia**
– Inadequate oxygen supply during delivery can damage the auditory nerve or brain centers.
- **Neonatal Hyperbilirubinemia (Severe Jaundice)**
– High bilirubin levels may cause *kernicterus*, which impairs auditory pathways.
- **Ototoxic Drug Exposure in Pregnancy**
– Maternal intake of certain medications (e.g., aminoglycosides) can harm the fetus's inner ear.

2. Genetic Causes

Genetic or hereditary hearing loss occurs due to mutations inherited from parents or arising spontaneously.

Types of Genetic Hearing Loss

- **Syndromic (30%)**
– Hearing loss is part of a broader syndrome.
Examples:
 - *Usher syndrome*: hearing loss + vision problems
 - *Waardenburg syndrome*: hearing loss + pigment abnormalities
 - *Alport syndrome*: hearing loss + kidney issues
- **Non-Syndromic (70%)**
– Hearing loss occurs alone without other abnormalities.
 - Common mutation: **GJB2 (Connexin 26)**
 - Usually congenital and often severe to profound.

Genetic Transmission Patterns

- **Autosomal recessive**
- **Autosomal dominant**
- **X-linked**
- **Mitochondrial inheritance**

Genetic factors can cause **sensorineural hearing loss**, usually permanent.

3. Infectious Causes

Infections can affect the outer, middle, or inner ear, leading to temporary or permanent hearing loss.

Common Infectious Causes

- **Otitis Media (Middle Ear Infection)**
 - Very common in children; fluid accumulation causes conductive hearing loss.
- **Chronic Suppurative Otitis Media**
 - Long-term infection that can damage ossicles and cause permanent hearing loss.
- **Meningitis**
 - Bacterial meningitis may damage the cochlea or auditory nerve, often causing profound SNHL.
- **Measles, Mumps, Rubella**
 - Viral infections that can affect the inner ear.
- **Cytomegalovirus (CMV)** – leading cause of congenital infectious hearing loss.
- **COVID-19** (rare)
 - Reported to cause sudden sensorineural hearing loss in some cases.

4. Traumatic Causes

Trauma can damage the external, middle, or inner ear structures, leading to conductive or sensorineural hearing loss.

Types of Trauma

- **Head Injury**
 - Temporal bone fractures may disrupt the ossicles or damage the cochlea.
- **Acoustic Trauma**
 - Exposure to loud noises or blasts damages hair cells in the cochlea.
 - Common in industrial workers, military, and urban youth exposed to loud music.
- **Barotrauma**
 - Pressure changes (air travel, diving) can rupture the eardrum.
- **Foreign Bodies or Physical Injury**
 - Inserting objects into the ear canal can perforate the eardrum.
- **Ototoxic Drugs**
 - Medications like aminoglycosides, chemotherapy drugs can cause irreversible SNHL.

5. Age-Related Causes (Presbycusis)

Age-related hearing loss occurs gradually as the ear structures degenerate with aging.

Characteristics

- Progressive **sensorineural** hearing loss
- Difficulty hearing high-frequency sounds
- Reduced speech clarity, especially in noisy environments

Underlying Mechanisms

- Degeneration of hair cells in the cochlea
- Reduced function of the auditory nerve
- Thickening or stiffening of the basilar membrane
- Reduced blood supply to inner ear structures

Risk Factors

- Long-term noise exposure
- Smoking
- Diabetes, hypertension
- Genetic predisposition

Presbycusis is one of the most common causes of hearing loss in adults above 60 years.

Session 4: Role of IEC Material, World Hearing Day Registration & hearWHO App Demonstration

Resource Person: *Ms. Janki Mehta*

This session focused on:

- Use of IEC materials for awareness generation
- Best practices in community-level behavioural communication
- Guide to **World Hearing Day registration**
- Demonstration and use of the **hearWHO mobile app** for self-screening and public awareness

Session 5: Reporting Format under NPPCD

Resource Person: *Dr. Sanjana Arora*

Participants received hands-on guidance on:

- Monthly and quarterly NPPCD reporting formats
- Documentation of screening, referrals, and follow-up
- Importance of timely submission for programme monitoring

Conclusion

NPPCD is a comprehensive national initiative aimed at **reducing preventable hearing loss**, improving **early detection**, providing **quality ear care services**, and ensuring **rehabilitation** for people with hearing impairment. Through capacity building, structured referrals, surveillance, and community awareness, the programme significantly contributes to reducing disability and improving quality of life across India.

Across the two days, the training successfully enabled:

- Strengthened understanding of hearing loss epidemiology and public health relevance
- Enhanced competency in NPPCD service delivery, referral, and coordination
- Improved knowledge of hearing loss etiological and clinical decision-making
- Effective utilization of IEC materials for awareness generation
- Skills in using digital tools like **hearWHO** for community benefit
- Improved accuracy in programme reporting and monitoring

Participants from both groups demonstrated active engagement, interactive discussion, and readiness to apply the programme skills in field settings.



