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## Editorial

# A brief journey of a new institute towards fulfilling 'National Goals' for prevention and control of deafness

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## 1. Background

More than 5% of world's population which amounts to about 430 million people need some kind of rehabilitation for hearing loss. World Health Organisation (WHO) estimates that by 2050 more than 700 million people (one in ten) will have 'disability' due to deafness which means hearing loss greater than 35 decibels (dB) in the better hearing ear.<sup>1</sup> Hearing impairment leads to the inability to interpret speech sounds, disability in communication, delayed language acquisition, economic and educational setback, social isolation, and stigmatization.<sup>1-6</sup>

WHO estimates, there are approximately 63 million people, who are suffering from Significant Auditory Impairment in India. The estimated prevalence is 6.3% in Indian population. As per National Sample Survey Office (NSSO) survey (2001), there are 291 persons per one lakh population who are suffering from severe to profound hearing loss. A large percentage of the population suffering from deafness are the 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. National Program for

Prevention and Control of Deafness (NPPCD) was initiated on pilot basis in the year 2006-07 (January 2007) covering 25 districts of 10 states and 1 Union Territory (UT), and has been expanded to 228 districts of 27 States /UT in a phased manner till now.

Objectives of the programme are:-

1. To prevent the 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 and material and training personnel.<sup>2,6,7</sup>

Though the goals set through NPPCD are being implemented in a phasic manner by Ministry of Health and Family Welfare (MOHFW), it is however a duty of all the otologists working in private or institutional set-ups to pursue the national goals. This article aims at highlighting the course of development of a new department of Otorhinolaryngology and Head-Neck Surgery (ORL &

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HNS) in All India Institute of Medical Sciences, Rishikesh (AIIMS-R), and how it has progressed towards fulfilment of goals set by NPPCD. The article may be a source of guidance and inspiration for the several upcoming institutes in relation to what the department could achieve and what it could not since conception.

## 2. Institute's Journey Towards Fulfilment of National Goals

AIIMS-R started functioning in year 2012 and the Department of Otorhinolaryngology and Head-Neck Surgery at All India Institute of Medical Sciences was started in year 2013. Hospital services started functioning in year 2014. In a span of ten years department has made a considerable progress in fulfilling the national goals for prevention and control of deafness. A brief description of services offered, research and academic activities is provided here.

### 2.1. Clinical Services offered in the department

The state of art outpatient department houses five consultation rooms equipped with sophisticated workstations (with facility for endoscopy, narrow band imaging, microscopy, stroboscopy, caloric testing, electrocautry, etc.), minor operation theatre, vestibular examination room, voice laboratory, speech therapy and audiometry room. The audiology and speech unit is equipped to carry out basic comprehensive audiometry, tympanometry, Oto-Acoustic Emissions, Brainstem Evoked Response Audiometry (BERA), Auditory Steady State Response (ASSR), hearing aid trial and provides support for the cochlear implant program. The institute has outsourced the dispensing of hearing aids at discounted rates for the convenience of the patients. This hearing aid store is placed a convenient location with department's OPD. The indoor patient department includes 24 bedded ward with the facility of minor procedures. The department caters the needs of more than 5000 patients per month.

The first surgery was performed in year 2014 in the shared Operation Theatre (OT). However, the department today adorns with separate OTs (twin rooms for cases under general and local anaesthesia separate), which is equipped with state of art equipment as per international standards (including one of the best available microscopes, endoscopes, otologic drills, CO<sub>2</sub> laser machine, etc.). We also share Robotic operation theatre (equipped with da-Vinci robotic systems) with other specialities. The department now performs all possible advanced otologic surgeries including variety of hearing reconstructions to cochlear implantations.

### 2.2. Integration with government schemes

1. The department was integrated with the 'Assistance to Disabled Persons for Purchase/Fitting of Aids and Appliances' (ADIP) scheme initiated by the Ministry of Social Justice and Empowerment, Government of India (GOI). First cochlear implantation was done with the aid of ADIP scheme in year 2016.
2. Temporal bone dissection laboratory was set up with the aid of NPPCD, Government of India (GOI) in year 2018 with an aim of training post-graduates and otologic surgeons from other parts of country.
3. Rashtriya Bal Swasthya Karyakram (RBSK) is an important initiative of GOI aiming at early identification and early intervention for children. The institute has integrated itself with the program and we have stated getting patients from various peripheral and outreach service centres.
4. Recently institute has made an agreement with All India Institute of Speech and Hearing, Mysore (AIISH) to set up Outreach Service Centre (OSC) within AIIMS-R. In this scheme AIISH will provide manpower including audiologist, speech and language therapist which will add to the already existing workforce of one audiologist and one speech therapist in the institute. Besides imparting professional training, the OSC shall render clinical services (including audiological tests, speech/language therapy and neonatal screening), conduct research and educate the public on issues related to communication disorders such as hearing impairment, mental retardation, voice, fluency and phonological and language disorders.

### 2.3. Research activities

Research projects with the extramural grants were undertaken to achieve goals that required more than five lakhs rupees investment.

1. First project funded by Science and Engineering Research Board, Department of Science & Technology, GOI, targeted at finding effects of radiations emitted by mobile phones on auditory system was started in year 2015. A separate research laboratory to perform audiological investigations was set up to examine the research subjects.
2. An ambitious project targeted at doing registry of deaf-mutism with Multi-centric descriptive-exploratory study to find out pre-, peri- and post-natal risk factors and causes of delay in treatment of deafmutism in patients visiting tertiary care centres of Uttarakhand, with the help of a pre-validated questionnaire was started in year 2000. The project is funded by Uttarakhand State Council for Science & Technology, India (UCOST).

3. A project funded by Medtronics India targeting validation of the accuracy of an android based device (ENTra view) in the evaluation of hearing loss in a quiet and noisy environment and possibility of its use as a screening tool to detect hearing loss, was started in year 2019. This is a step towards development of what is now called as tele-otology and audiology.

Research that required less than five lakh rupees was undertaken with the help of intramural grants.

1. The clinical-audiological study of deaf-mute patients of Uttarakhand State visiting AIIMS, Rishikesh.<sup>7</sup>
2. Prevalence of Auditory neuropathy spectrum disorder (ANS) and its audiological characteristics in a tertiary care hospital.
3. Universal screening of neonates and infants in a tertiary care hospital (AIIMS) in Uttarakhand.
4. Correlation of pre and intra-operative ossicular integrity assessment.
5. Radiological relations of sigmoid sinus with landmarks of mastoid surgery.
6. Validation of a Hindi questionnaire for finding the pre-, peri- and post-natal risk-factors of Deafmutism.

#### 2.4. Academics

The department besides training MBBS students admits 4-5 post-graduates for (MS in Ear, Nose, Throat and Head-Neck Surgery) since year 2016, and 2-4 MCh students (super-specialisation in Head-Neck Surgery & Oncology) from year 2020. Since year 2016 department has been conducting several Continued Medical Education (CME) programs and workshops for educational purposes.

Some of these were focussed on implementation of prevention and control of deafness:

1. A series of temporal bone dissection workshops.
2. Live surgical workshop for endoscopic ear surgery.
3. Series of poster competitions and quiz competitions for students.
4. Awareness programs like 'No Horn Day'.
5. Online Panel discussions.
6. Webinars on World hearing/deafness days.

### 3. Conclusion

Deafness is substantial problem worldwide and in India. It influences the socioeconomic growth of society by hampering the communication skills and development of the effected individuals. NPPCD has set up national goals for prevention and control of deafness, and it is a duty of all otologists to contribute in whatever way to achieve these goals. Department of ORL & HNS in AIIMS-R has been able to achieve several targets set by NPPCD, the path however is long and the journey continues.

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### 6. Conflict of Interest

None.

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