National Strategy on Prevention of Deafness and Hearing Impairment in Bangladesh : 2011-2016

Directorate General of Heath Services
Ministry of Health and Family Welfare

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Message

Hearing is an essential sensory sense of an individual for development of speech which is crucial for verbal communication and personality development. Deafness and hearing impairment is one of the most frequent sensory deficits in human beings. It is the second commonest form of disability in Bangladesh and is causing economic, social, educational and vocational problems. In South-East Asia the problem is disproportionately high. We are happy to know that Bangladesh is going to develop a national strategy plan for prevention of deafness and hearing impairment.

Reducing the incidence and impact of non-communicable diseases including deafness & hearing impairment is one of the Government's objectives identified in the HNPSP. Growing concern about hearing impairment is also reflected in the public domain by the activities of the many non-governmental organization. Development of national strategy for deafness & hearing impairment reflects a shared commitment to reduce the incidence of deafness & hearing impairment and improving the quality of life of those who develop deafness & hearing impairment.

I would like to thank the individuals who contributed to develop this strategy, either by participating in working groups, providing comment and peer review or by participating in consultation through meetings and individual submission.

These pledges are at the heart of the national deafness & hearing impairment control strategy. These strategies will provide a strong foundation for how we will move forward.

12/09/11

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Directorate General of Health Services
Mohakhali, Dhaka 1212

Vice-Chancellor
Bangladesh Sheikh Mujib Medical University
Dhaka

Message

Hearing impairment touches our soul in our personal, family and social life. Hearing impairment and deafness is an illness that afflicts large numbers of people from all backgrounds. Its diagnosis, treatment and prevention are one of the major health challenges in our society. It is belived that hearing impairment and deafness can be prevented by early detection and effective treatment. So all our ability and efforts to be combined to make people aware and make services available with a planned approach.

Our action must focus on prevention and reducing the risk of people getting the disease. Screening and early diagnosis which we are setting out in this plan will allow all of us faster and easier access to hearing impairment and deafness management. To achieve this goal incorporation of primary ear and hearing care in the existing primary health care services is recommended. Development of national deafness & hearing impairment control strategy reflects a shared commitment to reduce the incidence of deafness and hearing impairment, to improve the quality of life of those who develop hearing impairment.

Members of the Society of Otolaryngologist and Head-Neck Surgeons of Bangladesh are happy to know that National strategy on prevention of deafness and hearing impairment in Bangladesh is going to be published, first time in our country. Though it is late but at last our dream is going to be fulfilled.

On behalf of the society of Otolaryngologist and Head-Neck Surgeons of Bangladesh, I would like to thank and congratulate everyone who has contributed during the development of this strategy. The next step is the implementation and to turn this strategic plan into a reality. I look forward to working with you all.

(Prof. Pran Gopal Datta)
Vice-Chancellor
&
President,
Society of Otolaryngologist and
Head-Neck Surgeons of Bangladesh

Preface

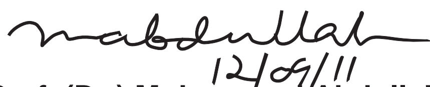
Bangladesh has been passing through epidemiological transition from communicable to non-communicable diseases. Rapid demographic and epidemiological transitions have affected the magnitude and pattern of deafness among the populations of the South East Asia Region (SEAR). Hearing impairment is the second commonest form of disability in Bangladesh and is producing substantial social and economic costs because of its effect on child health development and education.

Early detection of hearing impairment and proper management could prevent permanent hearing disability. Therefore, for prevention and proper management strengthening of services at the primary, secondary and tertiary level is required. The present system of ear care services is exclusively hospital based, where the preventive aspect is neglected. There is also no satisfactory recording system of hearing defects. The development of a national strategy and programme for prevention of deafness and hearing impairment and side by side legislation in favour of a healthy public policy can be a useful instrument for prevention of deafness in Bangladesh.

WHO in collaboration with regional, international professional bodies and NGOs has developed a programme "SOUND HEARING BY THE YEAR 2030" and requested the Governments of the South-East Asia Region to incorporate the concept of Primary Ear and Hearing Care (PEHC) through the existing primary health care (PHC) services. It is expected that implementation of this programme could eliminate 90% of the existing deafness and hearing impairment by 2030.

The national strategic plan for prevention of deafness has been developed for the first time in Bangladesh on the basis of consensus of group of broad-based stakeholders through a series of exercises. This document provides a common strategic framework as well as guidance to effectively address this challenge. All stakeholders from public and private sector are requested to play due role in implementing this strategic plan.

Finally, Bangladesh Government expresses sincere appreciation to the WHO for bringing this issue forward and providing extensive technical assistance to develop this strategic document.



Prof. (Dr.) Mohammad Abdullah
National Focal Person for Prevention of
Deafness & Hearing Impairment in Bangladesh
&
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National Institute of ENT

1. Introduction

Hearing is an essential requirement of an individual to perform daily activities. Deafness and hearing impairment is reported to be increasing globally, becoming one of the most frequent sensory deficit in human beings. The problem is disproportionately high in the South-East Asia Region. In 1985, WHO estimated that there were 42 million[1] deaf persons in the world. More recent estimates put the number of deaf and hearing impaired at 250 million[2].

Rapid demographic and epidemiological transitions have affected the magnitude and pattern of deafness among the populations of the South East Asia Region (SEAR)[3]. Worldwide one person in a thousand born with deafness and about an equal number born with sound hearing develops deafness during their life time. Most countries of this region have national policies for prevention of deafness and hearing impairment, Bangladesh is yet to develop national policy and strategies for prevention of deafness and hearing impairment.

The far-reaching implications of hearing loss, both in respect to development of communication skills as well as in terms of social and economic consequences and quality of life warrant an urgent need to highlight the magnitude and severity of the problem. Strong advocacy is required to bring in forefront the evidence-based information needed on the magnitude and consequences of deafness on one hand, and the availability of information on resources for hearing care on the other.

WHO in collaboration with regional, international professional bodies and non-governmental organization (NGOs) has developed a programme "SOUND HEARING BY THE YEAR 2030" and requested the governments of the SEAR to incorporate the concept of Primary Ear and Hearing Care (PEHC) through the existing primary health care (PHC) services. It is expected that implementation of this programme could eliminate 90% of the existing deafness and hearing impairment by 2030.

For successful implementation of wide scale effective programme for the prevention and control of deafness and hearing impairment care should be taken so that the interventions are soundly based on the realities of cultural,

economic and social factors, general education, nutrition and a host of other determinants of health.

Early detection of impaired hearing and proper management could prevent permanent hearing disability. Early detection at the primary care level is possible through the community clinics. Therefore for proper management and for prevention activities strengthening of services at the primary, secondary and tertiary level is required. The present system of ear care services is exclusively hospital based, where the preventive aspect is neglected. There is also no satisfactory recording system of hearing defects. The development of a national strategy and programme for prevention of deafness and hearing impairment in Bangladesh and side by side legislation in favor of a healthy public policy for deafness prevention can be a useful instrument for prevention of deafness.

2. Current situation

Hearing impairment is the second commonest form of disability in Bangladesh and is causing economic, social, educational, and vocational problems. Children are the worst affected section of the community in this regard. Many factors including genetic factors, childhood diseases including diseases of the mother during pregnancy and exposure to noise above the threshold level over an extended period of time are responsible for causing hearing impairment.

Deafness produces substantial social and economic costs throughout the world because of its effect on child health development and education. In a study it was revealed that 33% people have some degree of hearing impairment in either of the ear. Among them 35% are from rural area and 29% from urban areas[4].

In same study it was found that profound deafness was present in only 0.5%. Profound hearing loss was less in rural area than urban area[4]. It is estimated that hearing aids were needed for 4 to 6 percent of the population[5]. According to another study, childhood onset deafness in Bangladesh is 5%, whereas adult onset deafness is 33%. In respect of manpower there are 307 ENT specialists in the country, in other words there is one specialist for 1,997,597 populations[6].

Trained human resources and testing facilities for ear and hearing care are still lacking in the district hospitals. There is no school for audiologists in Bangladesh. Cost of surgery is high, which the general people cannot afford & there is inadequate supply of hearing aids as well. There is also lack of facilities for screening, diagnosis & management of ear diseases at primary and secondary level of care. The declaration of the International Workshop on Primary Ear Care held in South Africa states that 'Ear disease causing disability is most effectively prevented through early identification and treatment within primary health care'. Declaration also takes into consideration that the developing countries are lacking in effective legislation against noise and programmes to prevent noise induced hearing loss. Opportunities exist for prevention of the noise induced hearing loss by primary, secondary and tertiary health care and it is necessary for countries to measure the size of the problem and adopt country specific strategies for its prevention.

The World Health Assembly has passed two resolutions in relation to prevention of deafness and hearing impairment (PDH), in 1985 and 1990. They affirmed that majority deafness and hearing impairment is avoidable or remediable and that the greatest needs for the problem are in developing countries. The 1990 resolution estimated that there are 120 million persons with disabling hearing conditions worldwide and urged member states to set up national programmes for the prevention of deafness and hearing impairment, with the technical assistance of WHO. The WHO-PDH addresses problems in this field of major public health importance. These problems include ototoxicity, chronic otitis media, noise damage to hearing, inherited and congenital causes, and the provision of appropriate affordable hearing aid services.

The PDH programme has developed a standardized Ear Disease Assessment Protocol to enable countries to conduct national surveys rapidly. A national programme will require a set of integrated strategies to prevent deafness and hearing impairment.

The meeting recommended that all countries should implement national programmes for the prevention of noise-induced hearing loss, integrated with Primary Health Care.

3. Deafness and hearing impairment

Deafness refers to the complete loss of hearing ability in one or two ears. Hearing impairment refers to both complete and partial loss of the ability to hear.

3.1 Types of hearing impairment

There are four types of hearing loss:

- Conductive hearing losses are caused by diseases or obstructions in the outer or middle ear. Conductive hearing losses usually affect all frequencies of hearing evenly and do not result in severe losses. A person with a conductive hearing loss usually is able to use a hearing aid well or can be helped medically or surgically.

- Sensorineural hearing losses result from damage to the delicate sensory hair cells of the inner ear or the nerves that supply it. These hearing losses can range from mild to profound. Even with amplification to increase the sound level, a person with a sensorineural hearing loss may perceive distorted sounds, sometimes making the successful use of a hearing aid impossible.

- Mixed hearing loss refers to a combination of conductive and sensorineural loss and means that a problem occurs in both the outer or middle and the inner ear.

- Central hearing loss results from damage or impairment to the nerves or nuclei of the central nervous system, either in the pathways to the brain or in the brain itself.

Hearing loss is generally described as mild, moderate, severe, or profound, depending upon how well a person can hear the intensities or frequencies most strongly associated with speech. Hearing impairment can occur either in one ear or in both ears. Generally, only children whose hearing loss is greater than 90 decibels (dB) are considered deaf.

3.2 Causes of hearing impairment and deafness

Deafness can be inherited. If one or both parents or a relative is born deaf, there is a higher risk that a child will be born deaf.

Hearing impairment may also be caused by problems during pregnancy and childbirth. These include:

1. Premature birth;
2. Conditions during birth in which a baby lacks enough oxygen to breathe;
3. Rubella, syphilis or certain other infections in a woman during pregnancy;
4. Inappropriate use of ototoxic drugs (a group of more than 130 drugs, such as the antibiotic gentamicin, streptomycin, neomycin, kenamycin, amikacin, diuretics such as frusemide, ethacrinic acid, antimalarial such as quinine, analgesics such as salicylates, indomethacin, ibuprofen) during pregnancy; and
5. Jaundice, which can damage the hearing nerve in a newborn baby.

4. Policy framework

The National Health Policy provides a comprehensive policy framework for development of health services in Bangladesh. It is a vision that recognizes health as a fundamental human right and therefore the need to promote health and suffering in the spirit of social justice. The same, as specified below, provides the policy framework for development of services for prevention and management of deafness and hearing impairments in the country. It includes:

1. Provision of health education and promotion of ear care for prevention and control of deafness and hearing impairment.
2. Creation of awareness among the public, PHC personnel, physicians, pediatricians, obstetricians, pharmacists, paramedics, school teachers, public leaders, and religious leaders about ear infections (otitis media) and related risk factors for hearing disorders.
3. Human resources development with emphasis on building appropriate knowledge and skills in provision of standard and quality services for prevention and control of deafness and hearing impairment.
4. Extension and strengthening of range and quality of existing services at all levels.
5. Priority attention to the needs of vulnerable groups. Provision of educational and rehabilitation of deaf child at different level.
6. Community involvement including NGO participation, in collecting information on magnitude of the problems to help in service planning and delivery.
7. Review and redesign the existing education and training programmes for different categories of health manpower pertaining to prevention and control of deafness and hearing impairment.
8. Review and redesign information, education and communication strategies materials, media and methods.
9. Establishment of a comprehensive epidemiological surveillance system with emphasis on micro-epidemiological approach.

10. Provision of interventions for prevention and control of hearing impairment as an integral part of the existing service delivery system at all levels.
11. Incorporation of Primary Ear & Hearing Care (PEHC) in the existing PHC services as an element.
12. Promotion and development of intra-sectoral and inter-sectoral coordination and cooperation in prevention and control of hearing impairment.
13. Promotion of private sector development in selected areas such as development of hearing devices/ hearing aids, diagnostic facilities etc.
14. Promoting and supporting relevant bio-medical and health systems research.
15. Mobilization and allocation of resources required for effective implementation of this programme, preferably separate budget allocation for the programme including HRD.
16. The policy should have a special focus on providing services which targets the primary level in underserved areas and populations, giving attention to the secondary level for referral and appropriately strengthening tertiary care.
17. 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.
18. Promote production and distribution systems for low-cost and good quality hearing aids.
19. Conservation of hearing through legislation and enforcement of laws for noise control with special attention to industrial noise, noise at construction works as well as risk at entertainment centers, music, children's toys, etc.
20. Programmes for prevention and control of deafness should be built around existing health infrastructure.
21. Develop country database on deafness and hearing impairment to demonstrate the size and cost of the problem and selection of option for cost-effective interventions.

22. Develop and disseminate guidelines against major preventable causes of hearing impairment.
23. Strengthening of industrial health especially safety measure for the industrial workers.
24. Proper workforce planning for creating ENT manpower and placement for providing services.
25. Establishment of two way referral system for the deaf and hearing impaired patients between different levels of hospitals.
26. Transfer of proper technology from the developed world for updating the management of deaf and hearing impaired patients.

5. Goal and objectives

Goal :

Sound hearing by the year 2030.

Target :

Reduction of the burden of avoidable deafness and hearing impairment by 90% from the existing level by 2030.

Objectives

5.1 General objectives:

To eliminate deafness and hearing impairment.

5.2 Specific objectives:

5.2.1. To develop facility at different levels of health care with appropriate manpower for the prevention, early detection and management, and rehabilitation of the deaf and hearing impaired patients.

5.2.2. To establish "National Institute of ENT" in Dhaka as a centre of excellence for comprehensive health care delivery with a special focus for the management of deaf and hearing impaired patients.

5.2.3. To recruit appropriate human resources at different level of health care to fulfill the goal of 'Sound hearing by the year 2030'.

5.2.4. To develop appropriate and effective legislation with proper application for the control of noise pollution.

5.2.5. To develop system for the early diagnosis and treatment of hearing impaired patients with proper referral linkage at different levels through skilled manpower.

5.2.6 To incorporate PEHC in the existing PHC services.

5.2.7. To create awareness in the community regarding the prevention of deafness and hearing loss through different media and also using IEC materials.

5.2.8. To develop standardized treatment regimen for common problems in relation to deafness and hearing impairment.

5.2.9. To develop standardized recording and reporting system to monitor case detection and treatment outcome.

5.2.10. To develop data base at different level for the situation analysis with the aim to make proper intervention.

5.2.11. To strengthen the existing inter-sectoral linkages for continuity of the rehabilitation programme for persons with deafness.

5.2.12. To develop institutional capacity for ear care services by providing support for equipment and material and training personnel.

6. Strategies

6.1 Provision of appropriate manpower and Infrastructure development at all levels to control deafness and providing ENT specialized services with follow up and referral system.

6.2 Human resource development through education, training and research along with supportive tools such as manuals, standardized treatment regimen etc.

6.3 Proper legislation with application for the control of noise pollution through multisectoral collaboration.

6.4 Mass awareness development regarding causes of deafness and its prevention.

6.5 Early diagnosis and treatment of hearing impairment at different levels involving communities and schools etc.

6.6 Incorporation of PEHC in to the existing PHC services.

6.7 Generation of evidences through surveys etc every five years on prevalence and incidence of deafness and hearing impairment for updating policies, strategies and interventions.

6.8 Periodical audiological screening to identify hearing impairment and deafness among high risk population.

6.9 Standardized recording and reporting system to monitor case detection and treatment outcome.

6.10 Formation of national and other level committees to oversee the effective implementation of the programme

6.11 Development of the coordination mechanism among the different stakeholder for the development of plan and implementation.

6.12 Advocating the modernization of the industries to minimize the sound pollution.

6.13 Proper focus on the health of the industrial labour especially giving importance on the use of protective material/devices to prevent noise induced hearing loss.

6.14 Increased coverage of child and mother immunization (+MMR) and integration with EPI programme and also increased coverage of anti-natal and post-natal care to prevent sensorineural hearing loss.

6.15 Incorporation of screening programme for deafness and hearing impairment programme with EPI programme.

6.16 Screening of deafness and hearing impairment at grass root level by giving training to the field workers on Morros Index for neonates and other simple clinical tests.

6.17 Provision of academic environment (pre-schooling) for deaf and hearing impaired children so that after certain development they can go with the normal schooling.

6.18 Crush programme for development of audiologists and audiometricians, speech therapist, auditory verbal therapists etc. in the country.

6.19 Provision of otoacaustic emission and auditory brainstem response (ABR) in the audiology unit at all tertiary level hospitals.

6.20 Govt. and NGO collaboration for increasing coverage of the screening/early detection and treatment of the deaf and hearing impaired patients.

6.21 Allocation of proper resource envelop for the planned activities.

6.22 Development of workforce plan for creating need based ENT manpower.

6.23 Provision of rehabilitations at different level of disability including cochlear implants.

7. Organizational set up and staffing pattern

7.1 National Institute of ENT as an apex body is under the processes of implementation as an ECNEC approved separate project having its own organizational setup and staffing pattern. Director of the National Institute of ENT will be responsible and accountable for supervision and implementation of the programme.

7.2 Expansion of existing ENT department and establishment of audiovestibular unit in terms of infrastructure and human resource in all medical college hospitals. (To be implemented through separate project after consultation with society of ORL-HNS of Bangladesh).

7.3 Establishment of ENT and audiovestibular unit in terms of infrastructure and human resource in all District Hospitals. (To be implemented through separate project after consultation with society of ORL-HNS of Bangladesh).

7.4 Establishment of ENT and audiovestibular unit in terms of infrastructure and human resource in all Upazila Hospitals. (To be implemented through separate project after consultation with society of ORL-HNS of Bangladesh)

7.5 Establishment of pre-school for deaf children in the vicinity of the institute, medical college hospitals and district hospitals so that children get medical coverage and regular checkup easily (To be implemented through separate project after consultation with society of ORL-HNS of Bangladesh). It can be implemented by public sector/private sector/public private partnership/NGOs).

8. Plan of action

To achieve the goal of sound hearing 2030 the programme will be continued for 20 years. Plan for next five years (2011-2016) in outlined below:

8.1 In first 2 years

8.1.1 Situation analysis of the country by conducting national survey

8.1.2 Sensitization of policy makers, service providers and the community

8.1.3 Activation of national committee and holding regular meeting to oversee and also give directives for the programme implementation

8.1.4 Completion of National Institute of ENT

8.1.5 Formulation of national policy on ear care

8.1.6 Development of audio vestibular unit in all public medical college hospitals

8.1.7 Special campaign for the development of awareness in the community on prevention of deafness and hearing impairment

8.1.8 Memorandum of article between various authorities regarding establishment of Preschool for Deaf Children

8.1.9 Development of forms and formats and other reporting tools

8.2 In 2-5 years

8.2.1 Development of infrastructure in 25% medical college hospitals and other tertiary care institute/hospital

8.2.2 Development of appropriate skilled manpower in 25% medical college hospitals and other tertiary care institute/hospital

8.2.3 Development of infrastructure in 20% district hospitals

8.2.4 Development of appropriate skilled manpower in 25% district hospitals

8.2.5 Establishment of Preschool for Deaf Children in 20% area

8.2.6 Supply of equipment, instrument and other logistic to 25% public medical college hospitals, district hospitals and UHC

8.2.7 Establishment of referral system

8.2.8 Functioning of National Institute of ENT with full potentiality and wide spectrum of services

8.2.9 Special campaign in the educational institution for the development of awareness among the student and teacher on the prevention of deafness and hearing impairment

8.2.10 Development of IEC material for the prevention of deafness and hearing impairment

8.2.11 Use of designed forms and format for reporting and performance monitoring

9. Activities of the programme

9. A. Infrastructure development

9. A. 1. National level

9.A.1.1 National Institute of ENT as an apex body is under the processes of implementation

9.A.1.2 Establishment of a manufacturing plant at Dhaka for preparation of low cost, durable and effective hearing aid and accessories.

9. A. 2 National Institute of ENT

9.A.2.1 Institute will have a strong wing of otology and audio vestibular unit with 250 bedded hospitals.

9.A.2.2 It will be developed as a center of excellence in the domain of ENT health care and related activities.

9.A.2.3 It will implement "Sound Hearing 2030" and all other ENT programmes in the country.

9.A.2.4 It will act as an authority and decision maker in the field of ENT and Head Neck Surgery. It will involve national and overseas department/faculty for development of human resources and subjects in Bangladesh.

9. A. 3 Medical college hospital level

Expansion of existing ENT department and establishment of audiovestibular unit in terms of infrastructure and human resource (To be implemented through separate project after consultation with society of ORL-HNS of Bangladesh)

9. A. 4 District hospital level

Establishment of ENT and audiovestibular unit in terms of infrastructure and human resource (To be implemented through separate project after consultation with society of ORL-HNS of Bangladesh)

9. A.5 Upazila health complex level

Establishment of ENT and audiovestibular unit in terms of infrastructure and human resource (To be implemented through separate project after consultation with society of ORL-HNS of Bangladesh)

9. A.6 Union health centre level

Required facilities

9.A.5.1 Provision of facilities for diagnosing hearing impaired patient

9.A.5.2 Provision of medicines to combat common ENT problems that are related to hearing impairment.

9.A.5.3 Provision of necessary equipments.

Recommended standard physical facilities

Arrangement of special room at outdoor to carry out different ENT related examination and tests.

9. A.7 Community clinic

After basic training grass root level workers will be utilized to provide ear care services at the community level

9. B. Human resource development

9.B.1 Strengthening of existing post graduate courses by qualified and experienced teachers

9.B.2 Orientation courses for ENT professionals to update knowledge and skill

9.B.3 Arrangement for Bachelor/Master Courses in audiology and other relevant subjects

9.B.4 Arrangement of one year diploma or certificate courses on

10.B.4.1 Speech therapy

10.B.4.2 Audiology

10.B.4.3 Sign language and other relevant subjects

9.B.5 Arrangement of higher education and super specialty training for post graduate doctors in foreign countries

9.B.6 Arrangement of highly skilled and qualified foreign doctors as visiting professor/consultant in National Institute of ENT for training of doctors

9.B.7 Provision of short courses in simple diagnostic and management of ear and hearing disorders

9.B.8 Provision of training for health related personnel in primary, secondary and tertiary level

9.B.9 Provision of foreign training for ENT specialists

9.B.10 Development of skilled and qualified ENT nurse with provision of training in home or abroad

9.B.11 Provision of crushed training programme for ENT related manpower development (e.g. Speech therapist, Audiometry technician, ENT OT technician etc.)

9. C. Behavior change communication

9.C.1 Providing support with ear health education within the community by mobilizing trained volunteers , school teachers and Imams

9.C.2 Developing a primary ear care booklet & other educational material to mobilize community resources to improve ear health;

9.C.3 Development of primary ear care awareness using appropriate media;

9.C.4 Development of educational materials

9.C.5 Formulation of strategy for behavior change communication;

9. D. Service delivery from the National Institute of ENT

Leading role of *National Institute of ENT* are-

- Policy formulation
- Advocacy
- Resource mobilization

9.D.1. National level:

Super specialist care will be provided by National Institute of ENT

Main services:

1. Provision of comprehensive ear care
2. Diagnosis & management of all referral cases of ENT diseases.
3. Diagnosis, causes of sensory neural hearing loss;
4. Neuro-otology (hearing/balance included)
5. Microsurgery
6. Endoscopic surgery
7. Cochlear implant programme
8. Screening for hearing defects.
9. Counseling on ear care;
10. School ear care service
11. Assessment of hearing levels
12. Determine types, and degree of hearing loss;
13. Follow up of
    - a. Low birth weight babies
    - b. Premature babies
    - c. Jaundiced babies
    - d. Babies born as a result of consanguineous marriage
    - e. Babies born to mothers who had rubella infection during pregnancy
    - f. Cases in families who had strong family history of deafness
    - g. Mentally retarded children regarding hearing
    - h. Support services for hearing impaired

It includes following:

1. Provision of hearing aids, ear moulds, accessories.
2. Speech therapy
3. Schooling: Arrangement of special schools for hearing impaired children
4. Rehabilitation:
    - a. Community based
    - b. Vocational
    - c. Counseling

Other Support services

a. Laboratory: It includes audio vestibular and temporal bone dissection laboratory
b. Radiology
c. Oncology
d. Pathology /Microbiology/Medicine/Ophthalmology

Services for occupational high risk group

1. Regular check up as integral part of occupational heath services
2. Provision of pre-recruitment checks
3. Legislation
   i. To reduce noise pollution
   ii. To provide protective measures to workers
   iii. To provide compensation when necessary

Special education:

All students 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 standard ensured by appropriate authority.

Following supportive infrastructure should be in place

1. Visual highlighting in school education
2. Family and community support
3. Teachers training regarding the handling of the child
4. Support to the teacher/student from the institute
5. Ongoing hearing aid assessment
6. Occupational therapists and vocational trainers should be available at school level
7. Provision of parent and community interaction for better outcome of education The authority of the institute will look after this supportive infrastructure and monitor their activities.

Mode of service delivery

a. Through daily clinics with outpatient and emergency service for all ENT patients
b. Special clinics for school children for childhood deafness
c. Indoor service
d. Surgical care
e. Audio vestibular service
f. Speech therapy/Auditory Verbal therapy

9.D.2. Proposed Services provided at the Medical College Hospital

The teaching hospitals provide the tertiary ENT care along with ear care, which involves:

1. Provision of comprehensive ear care;
2. Provide full range of in-services to deal with all referral cases;
3. Diagnosis & management of all ear diseases. e.g.
   i. Impacted wax
   ii. Foreign bodies of ear
   iii. Otitis externa including Otomycosis
   iv. Acute Otitis Media (AOM)
   v. Chronic Otitis Media (COM) and its complications,
   vi. Injuries to ears
4. Other ENT services
5. Diagnosis, causes of sensorineural hearing loss;
6. Neuro-otology (hearing/balance included)
7. Speech, language therapy
8. Microsurgery
9. Endoscopic surgery
10. Cochlear implant program
11. Assessment of hearing levels
12. Determine types, and degree of hearing loss;
13. Follow up of
    i. Low birth weight babies

ii. Premature babies
iii. Jaundiced babies
iv. Babies born as a result of consanguineous marriage
v. Babies born to mothers who had Rubella infection during pregnancy
vi. Cases in families who had strong family history of deafness
vii. Mentally retarded children regarding hearing

14. Counseling on ear care;
15. School ear care service: This will be an integral part of primary ear care services with the main aim of early detection of hearing impaired children, their correction and follow up.
16. Screening for hearing defects.
    i. Neonates at birth (Morros reflex)
    ii. Infants between 6-12 months with a check list by field level workers guided by Health Inspector.
    iii. Routine screening: at school entry

Support services for hearing impaired

It includes following:

a. Provision of hearing aids, ear moulds, accessories and other assistive services.
b. Speech therapy
c. Schooling: Arrangement of special schools for hearing impaired children
d. Rehabilitation:
    1. Community based
    2. Vocational
    3. Counseling
e. Services for occupational high risk group
    1. Regular check up as integral part of occupational heath services
    2. Provision of pre-recruitment checks
    3. Legislation
        i. To reduce noise pollution
        ii. To provide protective measures to workers

iii. To provide compensation when necessary

a. Other support services

i. Laboratory: It includes audio vestibular and temporal bone dissection laboratory

ii. Radiology

iii. Oncology

Behavior change communication through appropriate IEC

Material and methods;

1. Contents:
2. Awareness about ototoxic drugs and sources of noise-induced hearing loss;
3. Methods:
4. Medias: Awareness about ototoxic drugs and sources of noise-induced hearing loss;

Other services:

Along with National Institute of ENT Medical colleges will play a leading role in

1. Policy formulation
2. Advocacy
3. Resource mobilization

Mode of service delivery:

1. Through daily clinics
2. Special clinics for school children for childhood deafness
3. Indoor service
4. Surgical care
5. Audiology service
6. Speech therapy

9.D.3. Services provided at the district hospital

District hospitals will provide the following secondary services:

1. Diagnosis & management of common ear diseases. e.g.
   - i. Impacted wax
   - ii. Foreign bodies of ear

iii. Otitis externa including Otomycosis

iv. Acute Otitis Media (AOM)

v. Chronic Otitis Media (COM) and its complications,

vi. Injuries to ears

2. Diagnosis, causes of sensorineural hearing loss;
3. Assessment of hearing levels
4. Determine types, and degree of hearing loss;
5. Awareness about ototoxic drugs and sources of noise-induced hearing loss;
6. Behavior change communication through appropriate IEC material and methods;
7. Counseling on ear care;
8. School ear care service: This will be an integral part of primary ear care services with the main aim of early detection of hearing impaired children, their correction and follow up.
9. Screening for hearing defects.

i. Neonates at birth (Morros reflex)

ii. Infants between 6-12 months with a check list by field level workers guided by Health Inspector.

iii. Routine screening: at school entry

10. Follow up of

i. Low birth weight babies

ii. Premature babies

iii. Jaundiced babies

iv. Babies born as a result of consanguineous marriage

v. Babies born to mothers who had Rubella infection during pregnancy

vi. Cases in families who had strong family history of deafness

vii. Mentally retarded children regarding hearing

Other Services:

i. Pure tone audiometry & typanometry

ii. Simple ear surgery e.g.

iii. Simple mastoidectory

d. Myringotony
e. Myringoplasty
f. Tympanoplasty
g. Impacted ear wax removal
h. F.B. removal
i. Facilities for basic ENT surgery
j. Determination of types & degree of hearing loss.
k. Fittings of hearing aid
l. Speech therapy

Out reach services:

1. Awareness raising
2. Motivation
3. Screening for ear diseases & hearing impairment.
4. Referral

Primary care: 3 tier approach

9.D.4. Services at community clinic, union health centre, upazilla health complex

1. Diagnosis & primary management of common ear diseases. e.g.
   i. Impacted wax
   ii. Foreign bodies of ear
   iii. Otitis externa including Otomycosis
   iv. Acute Otitis Media (AOM)
   v. Chronic Otitis Media (COM) and its complications,
   vi. Injuries to ears
2. Diagnosis and causes of sensorineural hearing loss;
3. Assessment of hearing levels (whispered & conversational voice tests, tuning fork tests and the use of screening audiometer);
4. Awareness about ototoxic drugs and sources of noise-induced hearing loss;

5. Follow up of
   i. Low birth weight babies
   ii. Premature babies
   iii. Jaundiced babies
   iv. Babies born as a result of consanguineous marriage
   v. Babies born to mothers who had Rubella infection during pregnancy
   vi. Cases in families who had strong family history of deafness
   vii. Mentally retarded children regarding hearing

10. Monitoring and evaluation

10.1 Information system

10.1.1 Essential types of Information: The essential types of information are:

a. Prevalence and incidence of hearing impairment

b. Manpower

c. Equipment available

d. Types of training undergone by ear care workers

e. Facilities available (their range, quality, quantity spread both in public and private sector)

10.1.2 Basic data from different level of institutions:

a. Primary Care Institutions

b. Secondary Care Institutions

c. Tertiary Care Institutions

d. School Health Clinics

10.1.3 Following data to be collected

a. Number of cases screened and diagnosed having ear problem

b. Number of cases referred for further investigation

c. Number of cases confirmed

d. Number of cases factory/ industrial workers at risk screened/ detected/ referred for correction/ rehabilitation/ compensation

e. Number of personnel/organization prosecuted after adequate warning/education

10.1.4 The National Focal Point develops a database on hearing impairment, periodically, analyze and publish report on the subject.

11. Expected benefits of the programme

The expected short and long term benefits of the programme are as follows:

11.1 Large scale direct benefit of various services like prevention, early identification, treatment, referral, rehabilitation etc. for hearing impairment and deafness at the primary, secondary and tertiary level of the health care delivery system.

11.2 Decrease in the number of hearing impaired persons.

11.3 Decrease in the severity/ extent of ear morbidity or hearing impairment.

11.4 Improved service network for the persons with ear morbidity/hearing impairment in the country

11.5 Awareness creation among the health workers / grassroots level workers through the Community Clinic/Union Sub centre/Health & Family Welfare Clinic / Upazila Health Complex

11.6 Larger community participation to prevent hearing loss through creation of a collective responsibility framework in the broad spectrum of the society.

11.7 Leadership building among the primary health centre medical officers to create better sensitization at the grassroot level to ensure better implementation of the programme.

11.8 Capacity building of the service providers at different level to ensure better care.

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