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Ear and hearing health in schools



# Public health interventions in schools for ear and hearing health





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#### ainstream schools are an effective, but often forgotten, location to implement public health interventions, including those to promote ear health and prevent or identify hearing loss.

## Why intervene in schools?

Advantages Several aspects make schools (primary and secondary) particularly suitable for public health interventions:

- They have a 'captive' population, i.e. schoolchildren are required to be present at school and any public health intervention would not have to rely on voluntary attendance.
- In areas where school enrolment and attendance are high, school population may include all members of the population of school-going age. This enables maximum coverage for public health interventions.
- Schools are key institutions in their community in providing and disseminating knowledge, skills and understanding, and promoting human rights. As such, school staff can seem like natural allies in the drive to improve the community's health.
- There already exist a number of public health interventions in schools, so schools may be receptive to new interventions for ear and hearing health.
  Several bodily systems – such as ears, eyes, teeth and nutrition – can be addressed at the same time.
- Schoolchildren can be enabled and encouraged to spread health education messages to their siblings, parents, relatives and friends in their community.

In addition to these general advantages, there are several reasons why schools are a good location to

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implement specific interventions to improve ear and hearing health:

- All children at primary school and secondary school, from ages 5 to 18 on average, can be targeted. Children from birth to primary years are particularly susceptible to ear diseases and this is an important period in the development of the organ of hearing.
- Teachers and schoolchildren in the upper grades may be readily trained to recognise and address ear problems and hearing loss among the general school population without needing extensive technical training.
- Because children learn to speak by listening, children with unidentified hearing loss often experience delays in their language and speech development. Teachers can compare schoolchildren of the same age and thus identify those having trouble with speech and language.
- A child's progressive hearing loss may go undetected in a family environment where the environment is small, communication is one-to-one, and all is familiar. In a larger environment such as a school classroom, a teacher may suspect progressive hearing loss if they have been taught what to look out for (referral must be arranged for clinical diagnosis).
- Teachers may also be able to detect those children with a hearing loss in one ear if they know what to look for, e.g. difficulty in detecting where a sound comes from, problems knowing what is said when spoken to on the side of the poor ear or when the good ear is close to a source of noise. Detecting a hearing loss in one ear enables the teacher to sit the child with the good ear towards him/her or speak to the child facing them.

#### Limitations

It would be preferable to detect any hearing loss as early as possible (through newborn and early years screening programmes), particularly in relation to interventions for speech, language and communication development. A school programme does not replace a newborn screening programme.

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**Regional consultant** Professor Jose M Acuin (Philippines)  In many low- and middle-income settings, children who are hard of hearing or deaf are not enrolled in mainstream education – and therefore will not benefit from an intervention based in mainstream schools.<sup>1</sup>

### Public health interventions in a school environment

These interventions can be grouped into three categories: primary, secondary and tertiary prevention.

#### 1. Primary prevention

This describes public health interventions aiming to prevent the onset of a disease or risk factor that causes hearing loss. In school settings, primary prevention strategies include:

- Raising awareness about ear and hearing health among pupils, teachers, parents and the community.<sup>2</sup>
- A health assessment (preferably mandatory) for children starting school. It should check that children have been vaccinated against infectious diseases that may cause hearing loss (e.g. measles, mumps, and pneumococcus), against congenital rubella (in girls before they reach child-bearing age), and against meningitis where it is endemic. This assessment should also be an opportunity to inform schoolchildren (as well as parents and school staff) on how to access primary ear and hearing care.
- Noise mitigation programmes. Noise-induced hearing loss is increasing, particularly among children and young adults exposed to high levels of environmental and recreational noise. Classrooms should be designed to limit levels of noise, and steps should be taken to reduce noise in environments that are already noisy (e.g. by covering floors with carpet or having ceilings in classrooms to reduce noise from other classrooms). Schoolchildren should be informed of risk factors for noise-induced hearing loss, preferably as part of a wider country-level programme.

#### 2. Secondary prevention

Secondary prevention aims to reduce the impact of ear disease and/or hearing loss through early intervention. It intervenes at the stage where a person already has some signs of ear disease, hearing loss or disability, but this has not so far become apparent or serious.

In school settings, secondary prevention includes:

- Screening children for early signs of ear disease or hearing loss and referring them to enable early intervention. Ideally, screening should be part of a standardised national screening programme and built into national plans for education and healthcare, and made mandatory.
- School healthcare: every school should provide some form of healthcare, e.g. via a nurse or healthtrained teacher who can recognise ear and hearing problems and manage or refer them appropriately.

#### 3. Tertiary prevention

For the World Health Organization (WHO), tertiary prevention is equivalent to habilitation or rehabilitation.<sup>3</sup> Re/habilitation actions, when carried out on a large scale in a population, are public health interventions which have the potential to significantly reduce the disabling effects of hearing loss. These interventions would



include provision of hearing aids and other amplification devices, speech-language therapy, inclusive and special education, and vocational training.

Schools have an important role to play in tertiary prevention. They can:

- Refer those identified as having ear disease or hearing loss during screening or at a school health clinic.
- Offer support to users of hearing aids and other hearing devices, as well as sign language support for deaf schoolchildren.
- Use assistive devices in the classroom when children who are deaf or hard of hearing are present and offer educational support in class as needed (see article on page 7).
- Include schoolchildren who are deaf or hard of hearing in in mainstream schools.
- Identify students with hearing loss who would benefit from but cannot afford hearing aids or other hearing devices.

### What ear and hearing health workers can do

#### Public health policy planning

Ear and hearing care professionals can help advocate for the inclusion of ear and hearing health in school health programmes. Some national plans may only mention hearing screening as needing to be included in the national school health guidelines. Health workers should bring to the attention of policy makers other school-based interventions that should be part of public health policy for ear and hearing healthcare.

#### Engaging with schools in their local setting

When there is no public health planning for ear and hearing care,<sup>4</sup> or interventions to improve the ear and hearing health of schoolchildren, ear and hearing care (EHC) workers can still engage with schools locally.

They can intervene directly in schools, e.g. by conducting screening camps or health assessments. They can also train and empower school staff to help improve schoolchildren's ear and hearing health. They can carry out the following actions:

• Train teachers and schoolchildren to change attitudes and adopt classroom measures to include children who are deaf or hard of hearing (see pages 5 and 7). Screening schoolchildren for ear disease. INDIA



Schoolgirl dry mopping her friend's ear under supervision. KENYA

#### Public health interventions

- Train all teachers to recognise which of their schoolchildren are experiencing hearing loss; some teachers may also be trained to examine ears for ear disease, carry out simple interventions and/or refer for further evaluation at the nearest primary health centre (or a secondary or tertiary facility if nearby).
- Teach and train schoolchildren, teachers, parents or guardians, to provide and spread health education messages about ear and hearing health, prevention of the causes of hearing loss, and hearing-healthy lifestyles. Schoolchildren can be taught to be credible messengers of public health messages to their parents and community.
- Train responsible, senior schoolchildren to check and monitor other schoolchildren for basic conditions, such as ear infections and hearing loss, and carry out simple interventions, under supervision, such as ear mopping for chronic suppurative otitis media.<sup>5</sup>
- Train teachers to help hearing aids users, e.g. by ensuring hearing aids are working at the beginning of the school day and are used, by showing children how to take care of them if they are old enough, helping to replace batteries, and organising repairs.

The next section examines what needs to be considered to make sure these school-based interventions are successful, using the example of screening.

### Screening for hearing loss and ear disease in schools

Screening aims to identify individuals with early signs of ear disease or hearing loss and enable early intervention to stop or minimise its progression. Hearing screening and ear examinations should be performed on school entry, and at regular intervals (usually annually) after that.

#### Conditions that can be suspected from school screening

They include: impacted cerumen in the ear canal, otomycosis (fungal infection of the ear), the presence of a foreign body in the ear, acute otitis media (AOM), otitis media with effusion (OME), chronic suppurative otitis media (CSOM), traumatic damage to the ear, sensorineural hearing loss, conductive hearing loss, as well as suspicion of other cognitive and behavioural conditions which should be referred to the appropriate specialists for further evaluation.

#### Who should be involved? School-led screening:

School-led screening: Ideally a screening progra

Ideally a screening programme should be run by the school itself. Screening may be done by a school nurse or by school teachers using a simply worded screening form, where feasible, or by frequency- and decibelcontrolled screeners such as hand-held screeners, calibrated animal sound games or other acoustic toys. Teachers can also be trained to do hearing testing using a basic audiometer, but an experienced otoscopist, such as an ENT specialist or clinical officer in ENT, would be needed for the ear examination, and to carry out and interpret tympanometry, if available.<sup>6</sup>

#### Mobile screening led by health workers:

Mobile teams can visit schools or set up local ear camps. Staff required for a camp-based approach will include:



- Primary-level doctors or clinical officers trained in ear examination
- Technician who can undertake screening audiometry and tympanometry
- Skill-trained teachers and top-level school leavers needing experience.<sup>6</sup>

### Three important considerations when conducting screening in schools

**1. Raising awareness about ear and hearing care** School screening should always include awareness creation among the schoolchildren and teachers regarding primary ear and hearing care.

#### 2. What happens after screening?

All children identified with ear problems through screening must be referred to the local primary healthcare centre and, if more complicated, to an ear specialist. Children presenting with hearing loss must be referred to the local health authorities for further audiometric evaluation. The mechanisms of the referral and linkages must be set up prior to initiation of the programme. All identified children must receive proper treatment, in accordance with their problem. A follow-up record and database has to be maintained by both the screening agency and the school.

#### 3. Communicating with parents

- Parents of children who are going to be screened must be informed prior to screening and their consent obtained in an appropriate way.
- If the child has a problem that requires attention and the child needs to be referred for further check-up, the parents must be called to the school and informed in person about the situation and the required action.
- If parents do not allow their children to be screened for religious or cultural reasons, the school should tactfully ascertain the reason why and try to seek a mutually acceptable solution (e.g. carry out the screening test at home or on a non-school day).

#### Conclusion

A partnership between ear and hearing health personnel and school staff can be very effective, but it is important to plan ahead and make sure that referral pathways and access to care exist for those schoolchildren who will be identified as having ear disease or hearing loss.

In addition, since deaf children may not attend school, determined attempts should be made to reach them and all children in the community including all out-of-school ones.<sup>1</sup> Ideally, a coordinated community screening programme should complement school-based interventions.

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- <sup>3</sup> Habilitation and rehabilitation have slightly different meanings. According to Rehabilitation International, rehabilitation refers to regaining skills, abilities, or knowledge that may have been lost or compromised as a result of acquiring a disability or due to a change in a person's disability or circumstances. See: www.riglobal.org/projects/ habilitation-rehabilitation/
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Doctor performing a tuning fork test on schoolchildren. PHILIPPINES