

## Frequently Asked Questions About FM Systems

### 1. What is an FM system?

An FM system is a device used by individuals who are deaf or hard of hearing and also by others who have attention issues. The speaker's voice stays consistently loud despite distance from the student. This minimizes negative effects from the competing classroom noise and echoes. It consists of a transmitter (and sometimes a lapel microphone), which is worn by the speaker, and a receiver, which is worn by the individual who is deaf or hard of hearing. FM systems use FM radio waves to send a signal directly to the receiver. FM systems are different from hearing aids in that they are intended to amplify only a specific speaker's voice, not all sounds. FM systems are sometimes used with or instead of hearing aids. They generally run on rechargeable batteries, with smaller systems using button batteries as well. FM systems are also called Assistive Listening Devices (ALDs) or "Auditory Trainers." FM systems can be one way of providing IDEA, Section 504 or ADA access to students with hearing loss.

### 2. How do I know which system to buy for my student?

You should have a recommendation from the student's audiologist. No FM system should be purchased without such a recommendation. There are many types and degrees of hearing loss as well as a variety of hearing aids. In addition, educational placements vary widely. An audiologist needs to consider many factors before making a specific recommendation.

### 3. What kinds of FM systems are available?

- For students with a mild to moderate hearing loss or a unilateral loss: Such students can often benefit from a low-gain "Walkman" style FM system with a headset or a desktop speaker. Students with a cochlear implant sometimes use a desktop system as well. Brand names include Phonic Ear (Easy Listener or Totable), Lightspeed, and Westone (Conversor). These systems cost about \$600 to \$800.
- For students with a unilateral loss: Some students are benefiting from several new devices. The Edulink, by Phonak, is a very lightweight system consisting of a teacher transmitter/mic and a tiny receiver worn in the good ear. The Sprite, by Phonic Ear, looks like a silver hearing aid, and is also worn in the good ear. The Edulink has no earmold and is thus non-occluding; the Sprite does have an earmold. These systems cost about \$1,000 to \$1,200.
- For students with a moderate to profound hearing loss: There are two types of personal FM systems available for students with a more involved hearing loss: stand-alone and boot. More information about each is below. These systems cost between \$2,000 and \$2,500. Both types have a receiver of some sort for each ear and a teacher transmitter and microphone.
  1. Stand-Alone BTE FM Systems: First, there are "stand-alone" systems that are independent of a child's hearing aids. The receivers are usually analogue hearing aids with an FM receiver built in. These systems are independent of the functioning of the child's hearing aids and are necessary in cases where families are unwilling or unable to keep working hearing aids on the child. Brand names include Telex (Select 1-40 and Select 2-40). Onetime expenses associated with these types of systems will be a calibration of the stand-alone BTEs, which is about \$300. If the student's hearing changes, the FM system will need to be recalibrated.
  2. Boot FM Systems: Secondly, there are "boot" systems that hook onto the back of a student's hearing aids. These consist of a receiver and a "boot" or "shoe" that holds the receiver on the hearing aid. Brand names include Phonic Ear (Lexis) and Phonak (Microlink). These boot systems are digital but can work with

digital or analogue hearing aids, or may be connected to a cochlear implant's processor. Boot systems are dependent on fully functioning and present hearing aids with well-fitting molds or working processors. Boot systems are useless if the child's processor or aids are at home or broken. Ordering exactly the model boot (shoe) and receiver recommended by the audiologist is essential for compatibility with the student's hearing aids. No calibration is needed for the boot-type systems that attach to the hearing aid; however, hearing aids older than two or three years may need factory retrofitting to be boot compatible. This has cost about \$100 to \$250 per aid. In addition, some minor modifications of the child's hearing aid may be necessary to accept the boot. These minor changes may be done at the audiologist's office for the cost of an office visit. The audiologist will be able to tell you if factory retrofitting or in-office modifications will be necessary. Earmolds and batteries will be the family's responsibility as they are associated with the child's hearing aid. If a child gets new or loaner aids for some reason, the receiver (\$700 to \$800) will most often be useable, but a new boot (\$40-\$50) will need to be purchased for each receiver.

- For some students, usually with mild to moderate or unilateral losses: Some students can benefit from a classroom-mounted sound-field system such as the Phonic Ear Radium with a single columnar speaker or the Phonic Ear Quad system with four speakers. The sound is louder than the teacher's voice alone, but the speakers are farther from the child's ears, and is generally not as clear as the three types of personal systems mentioned above.

#### **4. Who will teach us all about using this FM system? How often should we check it? How do we maintain and troubleshoot this equipment?**

ATECH Vision & Hearing Services staff members can teach the educational team about use, charging, and troubleshooting. Schools who wish to use this service should complete a "Request for Services" form. Please be aware that an in-school staff person with normal hearing will need to check this equipment every morning; we will be glad to train several people how to do this. It absolutely must not be left to the child to report if the system is not working well.

#### **5. Who will pay for ongoing repairs and maintenance?**

Under the 2002 NH Rules for the Education of Children with Disabilities, it is the school's responsibility to provide and keep functional any assistive technology equipment listed in the child's IEP. So, in addition to the original purchase and warranty costs, expected ongoing costs may include:

- Lapel or boom microphones will often last only a year. If this transmitter uses such a microphone, obtaining an extra mic at the time of purchase is advised.
- Headsets (standard-jack), also usually a yearly expense, may be obtained from any local retailer.
- Two or four rechargeable NiCad or NiMH AA batteries will need replacing every two years at a cost of \$10 or \$20. Radio Shack sells these. It is important to make sure that the battery type (NiCad or NiMH) and mAh remain the same.
- One zinc-air high power button battery per Edulink, SPRITE, Select 2-40 or 1-40 will be an ongoing weekly expense. Radio Shack carries these at a cost of \$0.70 to \$1 each.
- SPRITE and Select 2-40 and 1-40 BTE systems require new earmolds every 6 months at about \$75-\$100 each.

#### **6. Should we purchase the manufacturer's warranty?**

Especially for the more expensive BTE and boot systems, we strongly encourage teams to purchase the extended warranty option for repairs. Some firms will replace a lost boot once with the extended warranty. NHVHN is unable to cover these loss/repair costs for district or parent-owned equipment, but will gladly assist in troubleshooting and will provide parts ordering information.

#### **7. Do we have to purchase this system outright or can we trial it?**

Most companies also allow for a 45-day free trial upon receipt of a PO. In addition, please contact us for evaluation tools for teachers and other staff to complete pre- and post- FM system use. The NH Vision and Hearing Network has a limited pool of FM systems that can be borrowed for a short period of time.

#### **8. Can we ask parents to purchase the equipment or cost-share?**

One can always ask! However, many parents have already had to completely fund the purchase of hearing aids at \$3,000 to \$6,000. Most people do not know that very few health insurance companies help to cover the cost of hearing aids. In addition, cost-sharing can become problematic. If the family moves to another SAU or state, it is difficult to resolve. If the units need repair, it can be difficult to troubleshoot and determine if the district-owned part or the family-owned part is causing the problem. Both often need to be sent in together. Responsibility for repair bills can be hard to determine in dual-ownership situations.

#### **9. Can an FM system go home with the student?**

IDEA indicates that assistive technology needs to be available in all educational situations. Because of the unique nature of hearing loss and its impact on language development, all listening communication situations, independent of the location, are educational. Generally, however, the FM systems stay in the schools. The most common exceptions have been for educational after-school activities such as skiing, scout meetings, horseback riding, and cultural events. A previous written agreement with the parent is encouraged before the system leaves the school. In the case of negligence, the parent should cover the cost of repair; however, in the case of simple wear and tear (e.g. the microphone cord wearing out), the school should take on the responsibility for repair.

#### **10. These systems seem expensive. Do we really have to purchase them?**

Best practices indicate that all students need to hear their teachers and classmates as well as possible. These students are almost always beginning their education from a level far behind that of their peers. Students with hearing losses have often missed years of clear input and thus are often delayed in three areas: their development of spoken language, knowledge of the world, and social skills. Hearing aids are often not enough to hear and understand in the general noise of a typical classroom. For many students, FM systems increase dramatically the practical listening effectiveness of hearing aids alone.

Under the 2002 NH Rules for the Education of Children with Disabilities, it is clear that *"Each LEA shall ensure that assistive technology devices or assistive technology services, or both, are made available to a child with a disability if required as part of the child's special education, related services, or supplementary aids and services stated in the child's IEP."* Access, for students with hearing loss, is not a matter of ramps or large print books. Access for these students is provision of the best communication, hearing and listening situations possible. Attaining the schools' goal of an educated citizenry means providing oral deaf and hard of

hearing students the assistive listening technology they need to access the general curriculum and achieve academic and social success. Thank you for your assistance.