Teacher In-Service: Technology and Strategies

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Introduction

At the start of a new school year, teachers and staff may be unfamiliar with amplification technology (i.e. hearing aids, cochlear implants, and FM systems*). In most school districts, teacher in-services (training about technology and strategies) are arranged by educational audiologists and teachers of the Deaf/Hard of Hearing. However, in some cases there is no access to these professionals at this important time. As a result, parents have requested materials to help them be better advocates for their child through a teacher in-service.

The material presented in this toolkit is focused on the importance of FM systems, technology, and instructional strategies to support your child succeeding at school. A separate document deals with using an educational interpreter in the classroom.

You’ll find there are some universal and general statements about Deaf and Hard of Hearing children. But as your child is also unique, the resources presented here are fully intended to be tailored to reflect him/her and your situation. Please email Alberta Hands & Voices at info@albertahandsandvoices.com to obtain the file in Word format, so that you can tailor the information. Also, there are links to video and audio clips that are much easier to locate if you have an electronic version of the file.

There are also important resources for in-servicing teachers in the Welcome to Kindergarten section of the toolkit. The Alberta Hands & Voices Facebook page is a great place to get further advice and support on this topic. Share your experiences with us too! The start of the school year is an important and exciting time. We hope these materials can help you to communicate important information to your child’s teachers and school. Good luck!

Sincerely, Alberta Hands & Voices
*The term “FM” means frequency-modulated. Newer technology that is now available (and increasingly popular) is “DM” or digitally-modulated, such as the Phonak Roger system. In order to include both FM and DM, the newer correct term is Remote Microphone Hearing Assistance Technology (RM-HAT). However, since teachers are familiar with the term “FM system,” this guide will use the more commonly known term.

**Tips and Tricks**

The following suggestions can help you get the most out of a successful in-service:

**Find out how much time you have:** Practice ahead of time to make sure you cover the most important information in the time allotted.

**Allow for “hands-on time”:** Hands-on time with the technology is critical. As much as possible, demonstrate first and then give the teacher an opportunity to operate the controls and become comfortable. Some teachers will be very comfortable with technology. Others will not. Observe the teacher’s comfort level and adapt as the in-service progresses.

**Don’t worry about covering absolutely everything:** There is a balance between providing “enough” and “too much” information. This applies particularly to troubleshooting. As the teacher becomes more familiar with the equipment, you can add information either in person or by email.

**Decide on the content:** We suggest reading through the entire document to get an idea of different approaches you can take. Don’t feel that you have to use them all! Making the case for an FM system, and how and when to use FM technology is probably the most important aspect of the in-service. Optional activities, such as playing audio or video clips, are included under the Other In-service Ideas section. Not everyone is comfortable playing clips - this applies to professionals too! There are other documents in this toolkit that you may also
want to bring to the meeting - such as the ones about incidental learning and listening fatigue.

**Prepare an outline:** After you find out how much time you have, an outline will help give structure to the in-service. Here is an example of an outline for a 45-minute meeting:

1. **Introductions:** 5 minutes
2. **Why, When, and How to Use the FM system (including hands-on time):** 25 minutes
3. **Instructional Strategies and Handouts (Letter to teacher, Information about my Child, Letter to other parents):** 15 minutes

**Customize your Template**

Use the materials in the Appendix as a starting point. Not all of the content will apply. For example, some children wear hearing aids; others have cochlear implants. Information about both is provided, but both may not be needed in the final copy (unless, of course, your child has both)!

The template was created as a Microsoft Word document to allow for the addition or removal of information, as you see fit. Feel free to email Alberta Hands & Voices at info@albertahandsandvoices.com to get your own copy of the template.

You can customize the letters, information sheet and technology overview in the following ways:

1. Insert your child’s name in the document.
2. Customize your child’s information.
   a. There are sections where you can insert specific information (e.g., the name of the school, your child’s grade, etc.)
   b. There are pages that will not apply to your child or your child’s technology - delete these. For children with cochlear implants, you can use the Find/Replace feature in Word to customize. (Press the Control Key + F simultaneously, and type hearing aids...
in the “Find” field and type cochlear implants in the “Replace” field.

3. Identify the technology your child uses and delete the other ones.

   a. There are already a variety of images available within the document. Delete the ones that are not specific to your child.

5. Customize content.
   a. If you feel that any of the content is too strong or not strong enough, please feel free to delete or change to best suit your needs.
Other Inservice Ideas

A. Unfair Hearing Test

At home, you can encourage language development and attention by using the following techniques.

This is a very popular way to simulate hearing loss in the form of an unfair spelling test. The audio files on CD are available from the Canadian Hearing Society for $19.99. The same 10 words are presented three times through various filters: mild conductive hearing loss; a high frequency sensorineural hearing loss; and with hearing aids.

During the third run-through of the word list, when the hearing loss is “corrected” by hearing aids, you can add in extra noise for a few of the test items. For example, just when the spelling word is presented, you can cough, crumple up a piece of paper, or make another noise. This helps to show how difficult it can be to listen when there are other noises in the background and helps to make the case for a personal FM system. The purpose is not to exactly simulate the hearing loss, but to give a teacher a personal experience of the effort involved when listening. Debriefing afterwards is important and allows time to discuss their experiences.

This adds another 10-15 minutes to the length of the in-service and should be used with caution; hands-on time with the technology may be a more appropriate use of time for the initial meetings with the teacher. On the other hand, this activity is an effective way to get the message across. If you use this approach make sure to practice first.

B. Earplugs

Another effective activity is to provide earplugs to simulate a mild hearing loss and works best as a group activity. Suggest a discussion topic (e.g., summer vacation) and ask each member of the group to contribute to the conversation. If any of the group members has a slight pre-existing hearing loss, this activity will be difficult. With a big enough group, following the conversation can also be quite difficult for the people sitting on the outside edges. Debriefing
afterwards is important here as well. Ask the teachers how they felt to be in a
group conversation and not really know what was going on.

Did they feel hesitant about participating? You can share any observations you
had about their behaviours, such as leaning forward to hear better, frowning or
scowling, talking loud, panicky look in their eyes, etc.

This activity can be an effective ice-breaker. While hearing loss is not exactly
simulated, participants are given a taste of what effortful listening is like. The
hands-on portion of the in-service should be a priority if time is limited, so this
additional activity may not be the best use of time for the first meeting with the
teacher. Practice first! This may be a good eye-opening experience for your
extended family too.

C. Peer In-Service

You may be offered the opportunity to return another day to give a short
presentation to your child’s classmates. You can also make this suggestion
yourself. The parent of a child in kindergarten shared her experience: “the kids
asked neat questions, and we modeled strategies that would help someone
hear. I am so thrilled with how it went.”

Another parent of a child in grade three said, “it was so great. His classmates
were happy to learn about how they can help, and what the challenges are. One
little guy said it was like he had 'super powers' because he could hear things
from another room with his FM system! What a powerful experience for my son
to be able to explain this and to take on that role of advocate for himself.”

An educational audiologist gave the following advice to a parent of a child in
kindergarten:

“You'll only have a short period of time to keep their attention. I start off
by asking them why hearing is important. How did you use your hearing
today so far? Answers could be: to hear your mom when she woke you
up, crossing the street in traffic, making new friends, and learning. Then I
summarize the list and highlight making friends and learning. I introduce
the technology (cochlear implant, hearing aids, FM) and talk briefly about
how it helps.
What are the top three ways they can help? Ask them first, before telling them, to get them thinking. Examples are calling her name and waiting for her to respond, making sure she is looking at you, etc.

Then let them ask questions. Lots of time for questions is important. Let your child answer some of them if appropriate. Your child is learning from how you answer the questions. When you’re done, make notes for next year. What worked, what new ideas do you have, etc. Also talk to your child about what he/she liked and didn’t like and what you both would do differently.”

The following books can be used for peer in-services. Many are available for purchase at http://www.successforkidswithhearingloss.com.

- Eggbert, the slightly cracked egg: A book celebrating differences
- F is for Feelings: A book to teach emotions as they relate to familiar situations
- 5 Ways to Say Good Day: A Hard of Hearing Story: DVD for in-servicing class peers
- Friends, Like You: book featuring two children with hearing loss
- I’m the Boss of My Hearing Loss
- Oliver Gets Hearing Aids
- Oliver Gets FM
- Stand Tall, Molly Lou Melon (self-concept & bullying)
- TJ’s Story: Hearing Challenges & Self-Advocacy
- WEIRD!: children’s book about self-concept
- The Flying Bathtub: an adventurous story featuring a child with hearing loss
- A Screaming Kind of Day: despite a small difference, some experiences are universal

The Success for Kids with Hearing Loss website features an In-service Combo that includes Have you Heard? Welcoming a Student with Hearing Loss to Your School Community with handouts for you to copy and discuss or leave for school staff. Two good materials to present to class peers have been included in the In-service Combo: the Friends, Like You book can be read aloud to the class and/or the 5 Ways to Say Good Day can be viewed by the
class and then discuss strategies for good communication use in the classroom. The In-service Combo is available from the Alberta Hands & Voices Lending Library.

D. Audio Clips

If you play audio or video clips, there are some actions you can take to make the presentation go more smoothly.

➢ Make arrangements to bring your own computer or iPad.
➢ Check the loudness before the meeting and decide if you will need external speakers.
➢ You may need to make arrangements to log on to a Guest account at the school to access the Internet. Plan to arrive early so you don’t feel rushed.
➢ If you can’t access the Internet at school, ask if a computer with Internet access will be available to play some clips.
➢ Consider sending the clips beforehand via email to the person who will coordinate the computer equipment.

These audio clips are short and powerful. If your in-service time is limited, you can email these to the teacher afterwards:

“I can hurl tennis rackets at small moving objects with deadly accuracy.” is spoken in the next two clips.

**Hearing aids only (no FM), in noise, person speaking is 12 feet from listener.**
(http://tinyurl.com/H-Vtoolkit-3)

and compare it to:

**FM Microphone only, in noise, person speaking is 12 feet from listener.**
(http://tinyurl.com/H-Vtoolkit-4)
Recording simulating an FM microphone in a pizza parlor, clothing store, and classroom.
(http://tinyurl.com/H-Vtoolkit-5)

E. Video Clips

You may choose to show video clips during the in-service, or email them to the teacher afterwards. As an introduction, choose one or two that are most important and especially relevant to your child. As situations arise you may find other clips to be more appropriate.

Student in classroom; teacher forgets to use FM transmitter and then uses FM transmitter. Explanation of need and benefit of FM (about 5 minutes).
(http://tinyurl.com/H-Vtoolkit-1)

Video Clip demonstrating FM benefit from Vermont Hearing Center. This may be a bit long; suggest starting at 2:55 and showing the short demonstration of the effect of distance.
(http://tinyurl.com/H-Vtoolkit-2)

Video Clips from Minerva Deaf Research Lab in Edmonton:

Minerva Deaf Research Lab has video tutorials on the following topics (expanded below):

- educational audiology
- communication matters
- DeafPlus learners

E.1 Educational Audiology

There are 15 educational audiology video clips from Minerva:

Link to educational audiology video clips
(http://tinyurl.com/H-Vtoolkit-6)
Introduction to Educational Audiology Tutorial: provides an overview of what educators need to be aware of when working with students who are Deaf or Hard of Hearing.

What is Hearing Loss: provides information on the impact of hearing loss for children.

How Hearing Supports Learning: discusses auditory access, and tips for teachers on how to help students with understanding and processing auditory information.

What Every Teacher Needs to Know about Hearing and Listening: looks at speech sounds and how listeners understand and hear speech messages.

What a School Day Sounds Like: explores what a school day can sound like for a student who is Deaf or Hard of Hearing and factors that can impact learning.

Improving Hearing and Listening in the Classroom: provides suggestions to reduce classroom noise and improve the ability for students to hear the teacher in the classroom environment.

Understanding Rate of Speech: provides information on how the rate of teacher speech can affect the ability of students who are Deaf or Hard of Hearing to hear and understand classroom information.

Amplification Technology: gives information on the use of amplification devices to support hearing and listening in the classroom.

Cochlear Implants: provides an overview of what a cochlear implant is and how cochlear implants work.

Personal FM Systems: provides information on the benefits of having personal FM systems for students who are Deaf or Hard of Hearing.

Classroom Auditory Distribution Systems (CADS): discusses how classroom auditory distribution systems (CADS) aka soundfield FM systems work in a classroom, and tips for teachers when using this assistive technology.

Is the Technology Working?: discusses how to determine if technology to access auditory information in a classroom is working properly.

Oticon Amigo FM System FAQs: gives answers to frequently asked questions on the Oticon Amigo FM system.

Phonak Inspiro FM System FAQs: gives answers to frequently asked questions on the Phonak Inspiro FM system.

Phonak Zoomlink+ (SmartLink or EasyLink) FM System FAQs: gives answers to frequently asked questions on the Phonak Zoomlink+, SmartLink or EasyLink FM system.
E.2 Communication Matters

There are nine communication matters video clips from Minerva:

[Link to Communication Matters video clips](http://tinyurl.com/H-Vtoolkit-7)

- **Introduction to Communication Matters**: provides an overview of the tutorial and considerations educators need to be aware of when working with students who are Deaf or Hard of Hearing.
- **Good Communication Approaches**: gives tips on good approaches to communication and how to avoid some common communication problems.
- **Optimal Classroom Set Up**: includes useful information about classroom set up and positioning for optimal communication access.
- **Teaching Tips**: includes teaching tips to help ensure that students who are Deaf or Hard of Hearing get the most out of lessons.
- **Group Work**: outlines helpful tips and ideas on how you can make sure students who are Deaf or Hard of Hearing are fully included in classroom discussions and group work.
- **Using Technology During Lessons**: includes teaching tips and considerations for students who are Deaf or Hard of Hearing during your lessons.
- **Identity and Well-being**: many Deaf and Hard of Hearing students experience feelings of isolation when surrounded by hearing peers in the classroom. This clip discusses the critical role of the classroom teacher in supporting self-esteem and sense of belonging in a student who is Deaf or Hard of Hearing.
- **Self-Advocacy Skills**: addresses the following questions: What is self-advocacy and why do Deaf and Hard of Hearing students need it? What does a student who is Deaf or Hard of Hearing need to know in order to be a self-advocate? Can self-advocacy skills be part of IPP goals?
- **The Informal Inventory of Independence and Self-Advocacy Checklist**: a brief overview of the informal inventory, a tool to support monitoring of independence and self-advocacy skills development, is outlined.
E.3 DeafPlus Leaners

These resources are designed to assist educational teams in K-12 settings who support Deaf or Hard of Hearing students who have additional disabilities.

Link to video clips about DeafPlus learners
(http://tinyurl.com/H-Vtoolkit-8)

- **DeafPlus Learners: An Overview**: provides information on DeafPlus learners, their needs, and the needs of their families and teachers.
- **Visual Scheduling for DeafPlus Learners**: gives an overview of visual scheduling strategies and tips for implementing them.
- **Augmentative and Alternative Communication Strategies for DeafPlus Learners**: outlines how Augmentative and Alternative Communication (AAC) strategies can benefit both educators and students in the classroom. ACC includes all forms of communication (other than oral speech) that are used to express thoughts, needs, wants, and ideas. People with severe speech or language difficulties rely on AAC to supplement existing speech or replace speech that is not functional. Special augmentative aids, such as picture and symbol communication boards and electronic devices, are available to help people express themselves.
- **Strategies to Address Problem Behaviour**: includes information on understanding problem behaviour in the classroom, and strategies to improve this behaviour.
- **Adapting Literacy Instruction for DeafPlus Students**: addresses strategies for early literacy development for Deaf students with significant disabilities.
Appendix: Teacher In-Service Template
Letters from Parents to Teachers/to Other Parents

The following is a sample letter from a parent to the school personnel. When you write your own letter, include information about your child before the information about hearing loss. This order is also important for in-person transition or “Meet the Teacher” meetings, especially when your child is present.

You may wish to take something like this introduction letter along with you to prospective school placement meetings to help the principal and teachers get to know your child and their needs. Teachers have found having such a letter helpful for their own reference and to leave for substitute teachers when they are away.

You can also write a letter to other parents. An example is included below.

Including a photo of your child is helpful to make your letter more personal. Instructions for placing an image behind the text, as shown in this example letter to the school, are included at the end of this section. If you prefer, you can also insert an image of your child into a letter and have a white background as shown in the example letter to other parents.

A summary of your child’s information is useful as well and can be used in place of or in addition to a letter. See “Information About my Child” for an outline, following this section, and include other information you feel is important for others to know.
Dear Name of School Staff,

Hi, I’m [child’s name]. I am very excited about starting Kindergarten!

I like playing dress up, playing with dolls, Play-Doh, and sand. I LOVE music and dancing! I am a BIG fan of my two big sisters, Trisha and Hayley.

I have a severe hearing loss in my right ear, and I wear a hearing aid. In my left ear, I have profound hearing loss, so when I was four years old, I had surgery and got a cochlear implant.

My hearing aids and cochlear implant help me to hear really well, but it is still not perfect. Here are some things to keep in mind when communicating with me:

1. To get my attention, call my name. Wait for me to find you because sometimes I don’t know where you are when you call me. Start speaking only when I am looking at your face. I need to be close to you in order to hear you. Please let me sit near the front or near whoever is talking.

2. If I don’t hear you call my name, tap me on the shoulder.

3. Speak clearly (no need to shout). You may need to get down to my height if the room is noisy or if you are not wearing my FM system.

4. When giving instructions, use short, simple sentences. Avoid using single words; these are harder for me to hear.

5. If I appear not to understand, repeat by paraphrasing or re-wording. For example, “I’m going to wait until everybody is sitting quietly before we can all go outside.” Repetition: “When everyone is quiet, we will go outside.”

6. Use my FM system for direct instruction. I really depend on it! Please mute it or turn it off when you are not addressing me or the class so I can hear my friends. It is really distracting for me when I can hear you through the FM system but you are not talking to me.

7. Repeat or rephrase questions and answers of my classmates in any situation in which understanding may be difficult. Say my classmate’s name and point in their direction so that I can see who is talking. For class discussions, it really helps me if you pass around the transmitter.
Dear Kindergarten Parent,

Hi, my name is [child’s name].

I am five years old and I love an adventure! I am in your child’s kindergarten class. I am soooo excited to be in school! My favourite things are swimming and playing with my friends. Oh, and by the way, I am Hard of Hearing and I wear two hearing aids. I’ve had hearing aids since I was a baby. You can ask me or my dad questions about my hearing aids, but really, I am just like other kids.

If you come into the class as a parent volunteer, a few things that could really help me are:

To get my attention, call my name. Wait for me to find you because sometimes I don’t know where you are when you call me. Start speaking only when I am looking at your face. I need to be close to you in order to hear you.

If I don’t hear you call my name, tap me on the shoulder. Speak clearly (no need to shout). You may need to get down to my height if there is a lot of noise.

In the classroom, you will see the teacher wearing a microphone. That is my FM system and it helps me so much. If you are reading a book out loud to the class, please wear it so I can hear the story. It helps me when you repeat the questions from the other students, especially if they have a little voice. It helps everyone, really. Please turn the FM system off or mute it when you are not talking to me so I can hear my friends.

If it is really noisy or there is lots going on, I might miss things. Usually I try to figure out what is going on by watching other children. If you think I am missing something important, please tell me.

Other than that, I am good to go! Oh, and I love play dates!

See you soon, [child’s name].
Information About My Child

My child’s name is: __________________________________________

My child likes to: _____________________________________________

________________________________________________________________

________________________________________________________________

________________________________________________________________

My child’s strengths are: ________________________________________

________________________________________________________________

________________________________________________________________

________________________________________________________________

About my child’s hearing loss: _________________________________

________________________________________________________________

________________________________________________________________

________________________________________________________________

My child uses this listening equipment: _________________________

________________________________________________________________

________________________________________________________________

________________________________________________________________
My child expresses his/herself by:__________________________________________

__________________________________________

My child shows s/he understands by:______________________________________

__________________________________________

My child learns best by:__________________________________________________

__________________________________________

My child’s challenges are:_______________________________________________

__________________________________________

Specialized services that my child requires:______________________________

__________________________________________

Other helpful information:______________________________________________

__________________________________________
Instructions for Image Placement Behind Text

Refer to page 27 in this guide on letters to parents and teachers. One of the easiest and most flexible ways to insert a background image into a Microsoft Word document is to use layering. Layering the image to the back of the document means it won’t interfere with other text or images a user adds. Please note that the instructions below may change depending on the version of Microsoft Word used.

2. Choose Insert → Picture → From File.
3. Select desired picture → Choose Insert.
4. Image should have inserted into the document.
5. Right-click on inserted picture → Choose Format Picture.
6. Under Layout (and possibly Advanced options):
   a. Change Text Wrapping to Behind Text.
   b. Change the horizontal position to left relative to page and the vertical position to top relative to page. You may want to change the positions relative to margin depending on desired layout.
   c. Uncheck the ‘Move object with text’ box.
   d. Check ‘Lock anchor’ box.
7. The image should now be in the top left corner.
8. Drag the bottom right of the image until it covers the entire page.
9. You can now start typing on top of the image.
10. Under Format Picture, you may also want to change the colouring of the background image (i.e., brightness or transparency) to make the layered text more visible.
Hearing Aids: Technology Information

I have two hearing aids and a personal FM system. My hearing aids are the behind-the-ear style. This allows for greater protection of my ear and the hearing aid while at the same time accommodating growth.

**Hearing Aid**: the plastic part of the hearing aids that sits *behind* the ears.

![Hearing Aid Image]

**Earmold**: the rubbery part of the hearing aids that sits *inside* the ears.

![Earmold Image]

The *most important* thing to remember about hearing aids is that they do not “fix” my hearing loss. Even when the hearing aids are in, my hearing is still not normal.
Cochlear Implants: Technology Information

I have [one / two] cochlear implant(s). Cochlear implants are made up of two parts – internal and external components.

1. Internal Components
The internal components are implanted surgically under the skin behind the ear and include the receiver and the electrode array.

   **Receiver:** receives signals from the outside and converts them into electric impulses.

   **Electrode Array:** a group of electrodes that collects the impulses from the receiver and sends them to the auditory nerve.

2. External Components
The external components are worn outside of the body and include the speech processor and transmitting coil.

   **Speech Processor:** worn behind the ear, and contains a microphone, batteries, and controls.

   **Transmitter/Coil:** receives signals from the speech processor and transmits them to the inside.
Cochlear implants are influenced by electrostatic discharge (ESD) – static caused by movement on plastic playground equipment, plastic gym mats, etc.

Although cochlear implant systems have several internal safety features designed to reduce ESD, there is a small risk the external or internal equipment could be damaged if the static discharge flows through the external equipment.

In the case of an ESD event, I may experience uncomfortably loud hearing sensations, but the most likely occurrence is an interruption of stimulation or a processor shutdown.

[Choose the option below that is best suited to your child/family and insert here. Delete this text when done]

My cochlear implant processor should remain on and in place during all activities. In the event of an ESD event, please contact my mom immediately at [587-555-1212].

OR

My cochlear implant processor should be turned off and removed for activities involving plastic playground equipment, plastic mats, etc. Be aware that I will be Deaf without the processor. Make sure I can see you when you speak to me! Use gestures, non-verbal cues, and lipreading to communicate with me.
FM Systems: Technology Information

Why is FM technology so important?

In quiet, close up, one-on-one conversations, hearing aids work quite well. However, as soon as the classroom gets noisy and you are more than six feet away from the person speaking, hearing aids are no longer adequate.

**Background Noise:** Wearing hearing aids is like increasing the volume control of the world. For most people with normal hearing, distracting sounds (e.g. pencil sharpener, heels clicking down a hallway, classroom chatter, shuffling feet, etc.) are subconsciously identified as ‘unimportant’ and ‘tuned out’. With hearing aids, tuning out such sounds is almost impossible, since all sounds are amplified. This causes conscious attention to be drawn to those sounds.

In addition to making all noises louder, hearing aids are not smart enough to know which sounds to focus on. For example, hearing aids don’t know the teacher’s voice is the most important sound in the room. Hearing aids will amplify all voices, particularly the closest voices, such as nearby students. This means listening requires effort and energy. *To be able to hear in any amount of background noise, cognitive (brain) resources are used to identify and ignore ‘unimportant’ sounds.* The more background noise there is in the classroom, the more energy and effort is needed, and the less cognitive resources are available for learning and memory.

**Distance from Teacher:** Hearing aids have a circle of sound of approximately six feet. Within the six-foot circle, in a quiet environment, hearing aids can amplify all sounds quite well.
When more than six feet away, hearing aids can’t give access to the soft, high pitch sounds like /s/, /f/, /th/, etc. This means parts of words are literally missing and will affect the ability to hear plurals, verb tenses, and make meaning of what is said.

Sometimes gaps can be filled by predicting and guessing. The effort and energy involved in filling in gaps is considerable. Listening fatigue is a constant companion, interfering with the ability to learn.

Fortunately, a personal FM system will help overcome (but not “fix”) the problems associated with background noise and distance. A personal FM system is a critical part of educational programming for a student with hearing loss.

While students can “hear” without a personal FM system, they do not hear well enough in classroom environments because of distance and noise for understanding complex concepts and new vocabulary, especially in running speech (e.g. cat drinks vs. the cats drink).

**A personal FM system provides the best possible sound quality in the classroom. To the extent that access to high quality sound is limited, so too is access to instructional information limited.**
PERSONAL FM SYSTEM/ROGER SYSTEM: The Basics

The personal FM system is a two-part device: the receiver I wear and the transmitter you wear. [Delete the images below that don’t apply. Delete this text when done.]

**Receiver (me):** This part of the FM system is connected to the bottom of the hearing aids. It receives the teacher’s voice from the FM transmitter.

**Transmitter (you):** The part of the FM system the teacher wears. It transmits sound to the receiver.
Daily Equipment Checks

To ensure the technology is working, you will need to perform a daily check.

The age and abilities of the student will determine if a daily check or a listening check is required.

[Choose the type of check (i.e., listening, functional, or other) you want your child’s teacher or educational assistant to perform and insert here. Delete this text when done.]
Listening Check

1. **Test the battery**: After the hearing aid has been removed, use a battery tester to make sure the battery remains in the “good” range for several seconds. Another option is to insert a new battery, ensuring it is inserted correctly.

2. **Clean the earmold**: Use an alcohol swab if necessary. Inspect the earmold for any tears or cracks.

3. **Perform the “Ling Six Sound Test” on the hearing aid**:
   a. Put on the listening stethoscope and place the end on the earmold.
   b. Turn on the hearing aid by closing the battery door securely. It will take 3-5 seconds to ‘load’ and you may hear some beeps or tones.
   c. Perform the “Ling Six Sound Test.” Speak the following sounds into the hearing aid:
      
      /a/ = ah = as in “hot”
      /i/ = ee = as in “tree”
      /u/ = oo = as in “moon”
      /s/ = s = as in “see”
      /sh/ = sh = as in “she”
      /m/ = m = as in “man”

      These sounds range from low to high frequency and test the response of the hearing aid to a variety of pitches. All sounds should be clear and of equal loudness. There should be no static or distortion.

4. **Perform the “Ling Six Sound Test” on the FM transmitter**: Turn on the FM transmitter (worn by the teacher).
5. **Repeat the Ling Six Sound Test from Step 3:** Say the sounds into the teacher transmitter and listen through the stethoscope still placed on the earmold.

**Functional Check**

1. With the FM transmitter turned on, ask student to turn off one hearing aid or cochlear implant.

2. From a distance of about 10 feet and cover your mouth, ask an open-ended question or give a task through the FM microphone (e.g., “What did you have for breakfast?” “Put your hand on your head.”). An appropriate response suggests communication between the FM transmitter and the FM receiver. Go to **Step 5.** If the response suggests the FM transmitter and FM receiver are not communicating, continue with **Steps 3 and 4.**

3. Open and close the hearing aid battery door, wait 6-8 seconds for the hearing aid to “load.” Repeat **Step 2.** If there is no change, go to **Step 4.**

4. Replace the hearing aid battery. While there may be enough voltage remaining to power the hearing aid, there may not be enough to power the FM receiver as well. Repeat **Step 2.**

   If there is still no signal, try the following:
   - Check to make sure the transmitter is turned on and the microphone is not muted.
   - In the case of a neck loop receiver – verify the receiver is turned on.
   - The battery charge is appropriate.
   - The transmission distance is within 15 meters (50 feet) inside; 35 meters (115 feet) outside.

   **If the above suggestions don’t resolve the issue, keep in mind I will struggle to hear and listen. Try to position yourself very close to me throughout the day and write a note home to my parents about the malfunctioning equipment.**

5. Repeat with hearing aid or cochlear implant in the other ear.
How to Use the FM/Roger System – Key Points

Using the personal FM system is highly recommended in all learning situations, unless otherwise instructed by parent or educational audiologist.

[Choose the make and model of your child’s FM/Roger system and insert here. Delete this text when done.]
How to Use the Phonak Inspiro – Key Points

1. On/Off and Mute

➢ The on/off switch is on the top portion of the transmitter.

![ON and OFF buttons]

➢ The recommendation is for the system to be worn from the start of the day and only removed at the end of the school day. *Use the MUTE or on/off button when there is no direct instruction*, at recess, and at lunch.

➢ The mute switch on the transmitter is shown below. Remember to "unmute" the microphone when you are starting to speak. If the transmitter is not turned back on in 15 minutes, it will vibrate. You can un-mute and mute again if needed. If the screen has gone to sleep and turned black, press any key to ‘wake it up,’ and then press the mute button.

![Mute button]

2. Wearing the Lapel Microphone

➢ *The placement of the lapel microphone* directly impacts how well you will be heard. Please wear the transmitter as shown in the illustration – at the STERNUM LEVEL, with the microphone pointing UPWARD. The microphone cannot be covered by cloth or have jewelry close by. The rubbing or clanking sounds will be transmitted directly into the hearing aids.
3. Hearing Peers

➢ Your student is unlikely to hear peer questions, answers or comments. During class discussion or questioning the class, be sure to **paraphrase peer questions, answers and comments.** Peers are encouraged to use the transmitter during activities such as partner work, calendar, show and tell, book reports, presentations, reading aloud, etc.

4. Use with a Computer

➢ The system can be plugged into a computer or any device that has a headphone symbol. You will need a 3.5-3.5 stereo audio cord. One comes with each system. This will allow me to access activities such as computer-based teaching, listening centres, MP3 players, iPad, etc.

5. Use with Smart/Promethean Boards

➢ The audio curriculum presented via Smart/Promethean boards is a challenge for children with hearing loss. Depending on the computer-to-Smart/Promethean board wiring, the system can be integrated with the teacher’s computer to provide direct audio access into hearing aids. There is enormous variation from class to class and therefore it is
impossible to provide a general recommendation. Please contact an educational audiologist for support.

➢ Integrating PERSONAL FM and CLASSROOM AUDIO DISTRIBUTION (CADS) technology is **ONLY** recommended for auxiliary audio listening activities (e.g. Smartboard, computer, etc). **Students’ personal amplification should NOT be interfaced.**
How to Use the Phonak Roger Easy Pen – Key Points

1. On/Off and Mute

➢ On/Off switch is on the side of the transmitter, indicated by the green arrow below. Press for one second, until the indicator light turns green.

➢ Mute the transmitter by pressing this same switch only briefly. The indicator light will be a solid violet colour, as shown below.

➢ The recommendation is for the system to be worn from the start of the day and only removed at the end of the school day. Use the MUTE or on/off button when there is no direct instruction, at recess, and at lunch.

➢ Remember to “unmute” the microphone when you are starting to speak.
2. Wearing the Lapel Microphone

➢ The placement of the microphone directly impacts how well you will be heard. Please wear the transmitter as shown in the illustration – at the STERNUM LEVEL, with the microphone pointing UPWARD. The microphone cannot be covered by cloth or have jewelry close by. The rubbing or clanking sounds will be transmitted directly into the hearing aids.

3. Hearing Peers

➢ Your student is unlikely to hear peer questions, answers or comments. During class discussion or questioning the class, be sure to paraphrase peer questions, answers and comments. Peers are encouraged to use the transmitter during activities such as partner work, calendar, show and tell, book reports, presentations, reading aloud, etc.

4. Use with a Computer

➢ The system can be plugged into a computer or any device that has a headphone symbol. You will need a micro-USB to 3.5 audio cord. One comes with each system. This will allow me to access activities such as computer-based teaching, listening centres, MP3 players, iPad, etc.

5. Use with Smart/Promethean Boards

➢ The audio curriculum presented via Smart/Promethean boards is a challenge for children with hearing loss. Depending on the computer-to-
Smart/Promethean board wiring, the system can be integrated with the teacher’s computer to provide direct audio access into hearing aids. There is enormous variation from class to class and therefore it is impossible to provide a general recommendation. Please contact an educational audiologist for support.

- Integrating PERSONAL FM and CLASSROOM AUDIO DISTRIBUTION (CADS) technology is ONLY recommended for auxiliary audio listening activities (e.g., SmartBoard, computer, etc.). Students’ personal amplification should NOT be interfaced with the CADS during teacher instruction unless specified by an educational audiologist.
How to Use the Phonak Roger Touchscreen – Key Points

1. On/Off, Sleep/Wake Up and Mute

➢ The On/Off switch is on the side of the transmitter. To turn on press and hold until indicator light blinks green. To turn off, press and hold until pop-up window appears. Follow instructions on this window.
➢ To wake up, press this same button briefly.
➢ Mute the transmitter by pressing the mute button (microphone with a line through it on lower middle part of the transmitter). The indicator light will be red. To un-mute, press this same button.
➢ The recommendation is for the system to be worn from the start of the day and only removed at the end of the school day. Use the MUTE or on/off button when there is no direct instruction, at recess, and at lunch.
➢ Remember to “unmute” the microphone when you are starting to speak.

2. Check Connection

➢ Check connection to receivers and pass around microphone every morning.
➢ Receivers: Press Connect (on screen) while holding transmitter very close to the student’s ear. Watch the display as you do this—if the connection is successful, you will see “Roger X is connected.” The student will also hear a soft beep.
➢ Pass Around microphone: Turn on the pass around microphone and hold it close to the transmitter. Press Connect on the screen. Watch the display as you do this—if the connection is successful, you will see “Pass Around microphone is connected.”
➢ When pass around microphone is in use, the following indicator lights will flash:
➢ **Green** means a voice is transmitted.

➢ **Blue** means there is no voice being transmitted. Make sure the teacher transmitter is not lying flat on a surface—this disables the pass around microphone (place the teacher transmitter upright or wear and mute it).

➢ **Red** means it is muted (lying flat on table).

3. **Hearing Peers**

➢ Your student is unlikely to hear peer questions, answers or comments. During class discussion or questioning the class, be sure to **paraphrase peer questions, answers and comments.** **Peers are encouraged to use the transmitter** during activities such as partner work, calendar, show and tell, book reports, presentations, reading aloud, etc.

4. **Use with a Computer**

➢ The system can be plugged into a computer or any device that has a headphone symbol. You will need a micro-USB to 3.5 audio cord. One comes with each system. This will allow me to access activities such as computer-based teaching, listening centres, MP3 players, iPad, etc.

5. **Use with Smart/Promethean Boards**

➢ The audio curriculum presented via Smart/Promethean boards is a challenge for children with hearing loss. Depending on the computer-to-Smart/Promethean board wiring, the system can be integrated with the teacher’s computer to provide direct audio access into hearing aids. There is enormous variation from class to class and therefore it is impossible to provide a general recommendation. Please contact an educational audiologist for support.

➢ Integrating PERSONAL FM and CLASSROOM AUDIO DISTRIBUTION (CADS) technology is **ONLY** recommended for auxiliary audio listening activities (e.g., SmartBoard, computer, etc.). **Students’ personal amplification should NOT be interfaced with the CADS during teacher instruction** unless specified by an educational audiologist.
How to Use the Phonak ZoomLink+ FM System – Key Points

1. On/Off and Mute

➢ This FM system has 3 microphone settings. The Zoom setting with the microphone clipped onto clothing is recommended for classroom use and will provide the best sound. Do not use the bottom button unless directed by an educational audiologist.

<table>
<thead>
<tr>
<th>Microphone setting symbols:</th>
<th>Button</th>
<th>LCD</th>
</tr>
</thead>
<tbody>
<tr>
<td>SuperZoom</td>
<td></td>
<td>i</td>
</tr>
<tr>
<td>Zoom</td>
<td></td>
<td>☐</td>
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<tr>
<td>Off</td>
<td></td>
<td>☘</td>
</tr>
</tbody>
</table>

2. Wearing the Lapel Microphone

➢ The placement of the lapel microphone directly impacts how well you will be heard. Please wear the transmitter as shown in the illustration – at the STERNUM LEVEL. It is critical that the microphone not be covered by clothing or have jewelry close by. The rubbing or clanking sounds will be transmitted directly into the hearing aids.

➢ To hold the transmitter in place, use the “clip” around the LED screen.
➢ **Adjusting the Lavaliere Cord Length**

- After putting the FM transmitter over the head and around the neck, the lavaliere cord will need to be cinched to ensure the transmitter is sitting in the correct position. To adjust the cord length, press on the large button and retract or withdraw the cord. The cord length should be adjusted so the FM transmitter is sitting at the **sternum level**.

➢ **Lanyard/Antenna**

- The lanyard by which the Phonak FM transmitter hangs around the neck is also the FM system’s antenna. As a result, the extra length of cord hanging freely is critical and should not be tied or twisted in any way. Tying or twisting the cord will inhibit transmission of the auditory signal, possibly creating static or sound gaps in the hearing aids.

➢ **Sounds Entering the Microphone:**

- The Phonak Zoomlink+ microphone is located on the side of the transmitter. Keep in mind that any noise near the microphone will travel **DIRECTLY** into the hearing aids, interfering with, rather than helping, the listening process. Please be sure to remove any noisy jewelry or keys from around the neck and remove items from near your face and sternum area before talking (e.g. pens, books, hands, gum, etc). Some teachers have tied an elastic band around their keys to reduce the jingling sound from entering the microphone.

3. **Hearing Peers**

➢ Your student is unlikely to hear peer questions, answers or comments. Therefore, during class discussion or questioning the class, be sure to
paraphrase peer questions, answers and comments. Peers are encouraged to use the transmitter during activities such as partner work, calendar, show and tell, book reports, presentations, reading aloud, etc.

4. Use with a Computer

➢ The system can be plugged into a computer or any device that has a headphone symbol. You will need a 3.5-3.5 stereo audio cord. One comes with each FM system. This will allow me to access activities such as computer-based teaching, listening centres, MP3 players, iPad, etc.

➢ You will also need to connect the “backpack”, an adapter that allows charging or audio-input.

5. Use with Smart/Promethean Boards

➢ The audio curriculum presented via Smart/Promethean boards is a challenge for children with hearing loss. Depending on the computer-to-Smart/Promethean board wiring, the system can be integrated with the teacher’s computer to provide direct audio access into their hearing aids. There is enormous variation in wiring from class to class and therefore it is impossible to provide a general recommendation. Please contact an educational audiologist for support.
Integrating PERSONAL FM and CLASSROOM AUDIO DISTRIBUTION (CADS) technology is **ONLY** recommended for auxiliary audio listening activities (e.g. SmartBoard, computer, etc.). **Students’ personal amplification should NOT be interfaced with the CADS during teacher instruction** unless specified by an educational audiologist.
How to Use the Oticon Amigo FM System – Key Points

1. On/Off and MUTE

- The on/off switch is on the top portion of the transmitter: Hold down for 2-3 seconds to turn on/off. The LED will be a steady red when ON.
- The on/off button is also the “MUTE” button. To mute, quickly press the ON button. The LED will flash to confirm mute status and a symbol will appear on the screen indicating the microphone has been muted. Remember to unmute your microphone when starting to speak.
- The recommendation is for the system to be worn from the start of the day and only removed at the end of the school day. Use the MUTE or on/off button when there is no direct instruction, at recess, and at lunch.

2. Wearing the lapel microphone

- The placement of the lapel microphone directly impacts how well you will be heard. Please wear the transmitter as shown in the illustration – at the STERNUM LEVEL, with the microphone pointing UPWARD. The microphone cannot be covered by cloth or have jewelry close by, as rubbing or clanking sounds will be transmitted directly into the hearing aids.
3. Hearing peers:

➢ Your student is unlikely to hear peer questions, answers or comments. Therefore, during class discussion or questioning the class, be sure to **paraphrase peer questions, answers and comments.** Peers are **encouraged to use the transmitter** during activities such as partner work, calendar, show and tell, book reports, presentations, reading aloud, etc.

4. Use with a computer:

➢ **The system can be plugged into a computer** or any device that has a headphone symbol. You will need a 3.5-3.5 stereo audio cord (one comes with each FM system). This will allow me to access activities such as computer-based teaching, listening centres, MP3 players, iPad, etc. **Be sure to mute the microphone so that I don’t hear the extraneous sounds around me.**

5. Use with Smart/Promethean boards:

➢ **The audio curriculum presented via Smart/Promethean boards is a challenge for children with hearing loss.** Depending on the computer-to-Smart/Promethean board wiring, the system can be integrated with the teacher’s computer to provide direct audio
Instructional Strategies to Help Me Succeed

While auditory access is a necessary first step, I may require additional support in the form of strategies or even programming modifications.

The following general suggestions benefit all students with hearing loss, regardless of age, ability, degree of loss or type of device. For recommendations that specifically apply to me, a certified teacher of the Deaf/Hard of Hearing should be consulted.

**Paraphrase:** I will hear the person wearing the personal FM transmitter very clearly. Because what comes through the transmitter is emphasized, whereas sounds in the rest of my environment are not as clear. This means peer comments, questions, answers and discussions are extremely difficult for me to hear. During class discussion, please paraphrase information provided by my classmates.

**Vocabulary and Curricular Concept Preview:** Approximately 80% of our vocabulary is learned simply by overhearing. This is called “incidental learning.” Because I do not have the same opportunity to overhear words and vocabulary concepts, I may not have the same background knowledge as my peers. As a result, I may need the opportunity to hear and discuss new curricular vocabulary prior to the lesson. Please send home new vocabulary words so my parents can review them with me, and/or provide them to my teacher of the Deaf/Hard of Hearing.

**Comprehension Monitoring:** Monitoring my comprehension of verbally presented information will be helpful. Ask open ended questions (e.g., “What do you do now/next? Tell me about . . .”) and gauge my response for appropriateness.

- I frequently miss or mishear what is said, and I am not always aware this has happened. Because I don’t have the language resources an adult has, I am less able to correctly ‘repair’ misheard information. For example, an adult correctly repairs misheard message to: “It’s unequal suffering” while a child
incorrectly repairs the same message as: “It’s a real submarine”. Ask me to repeat back what I have heard. This will provide information about what I missed.

➢ Please do not ask “Did you hear me?” I know that the right answer is “yes,” so I may simply say yes to please you or to avoid unwanted attention. Also, I don’t necessarily know what I am missing (because I am missing it!).

**Self-Advocacy:** In addition to independently and consistently using my hearing aids and personal FM system, I also need to learn to take an active role in maximizing my communication skills through self-advocacy. Some examples are:

- raising my hand to ask for clarification
- approaching teachers after class and requesting clarification or confirmation
- moving closer to the person speaking, etc.

The ability to self-advocate is a skill which I will increasingly rely on as I move upwards through the grades. Self-advocacy can be uncomfortable for me, so I might require direct instruction or scripting. It is especially hard for me to interrupt you while you are teaching to remind you that the FM system needs to be turned back on if you forget to do so after a period of non-use. Please encourage me to help you remember if the FM system needs to be turned back on. One way is for us to have an agreed upon non-verbal gesture, such as a thumbs down or pointing to my ear.