



## COMMUNICATION IMPLICATIONS: FACE MASKS AND STUDENTS WHO ARE DEAF AND HARD-OF-HEARING

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### — STUDENT COMMENTARY —

Many people, regardless of hearing ability, perceive information from seeing the faces of others, and most individuals who are Deaf and Hard-of-Hearing (DHH) lip-read to some extent during conversation. For the DHH, mask-wearing can become a hinderance that makes daily life more challenging. In this new “normal” of daily life brought about by the onset of the Coronavirus (COVID-19) pandemic, mask-wearing and physical distancing have become essential safety measures that we must take in order to keep ourselves and others safe. Face masks have become a public and social-gathering norm in addition to a primary line of defense against COVID-19. However, this barrier of protection has added a barrier of communication for the DHH. From bank tellers to physicians, therapists, and teachers, professionals around the country are treating and interacting through a barrier. For individuals who rely on lip-reading and facial expressions to communicate, the increased use of facial coverings can lead to even greater sense of isolation. The goal of this work is to highlight communication challenges encountered by the DHH community when communicating with others wearing face masks and offer simple solutions to address the difficulties that mask-wearing presents to this population.

#### **The Global Pandemic and Students Who are DHH:**

Students who are DHH may struggle to communicate basic needs at school, with friends and family. When this is coupled with a global health crisis, the consequences of these life-altering changes push the boundaries from interference to a very real and palatable impedance to a person’s quality-of-life.

#### **Face Masks: How they Impact the DHH:**

In a recent study, Goldin et al (1) tested medical masks and described how they “essentially function as a low-pass acoustic filter for speech, attenuating

the high frequencies (2000-7000 Hz) spoken by the wearer by 3 to 4 dB for a simple medical mask and close to 12 dB for the N95 masks.” The authors state that speech quality is reduced when a person communicates wearing a face mask. When the face mask is then coupled with background noise, signal reverberation, and an absence of visual (facial) cues, speech can be highly unintelligible for the DHH. Essentially, face masks make listening a more challenging task, particularly so for the DHH. Twelve decibels are the sound equivalent of a pin dropping, however; for a person with a pre-existing partial or significant loss of hearing, every decibel that is “heard” and “understood” matters. Essentially, further reduction of audible sound, even the amount equivalent to a pin dropping makes listening and understanding speech an increasingly challenging task. Relevant questions that maybe asked include, How might the DHH improve their understanding of speech within a mask-wearing culture? How does this affect students who are DHH?

#### **Listening Challenges for Students Who is DHH:**

Students who are DHH have transitioned back to school to continue their learning. However, their primary mode of understanding has been diminished. Masks are covering the teacher’s lips or muffling voices and are interfering with seeing facial expressions. In addition, there is debate occurring as to which type of mask is best for students who are DHH to help with facilitating communication. For example, clear masks often fog up and muffle sound, while cloth masks take away lip reading and facial expression cues but tend to transmit sound better. More importantly information from Centers for Disease Control (CDC) indicates face shields haven’t proven to completely stop or protect against the spread of the virus (2).

### **The COVID-19 Pandemic and Service Delivery Models:**

School-based therapists should always evaluate their own risk and that of the students they serve when making decisions about service delivery. In the school setting, service delivery models may vary depending on the school district's model for instruction. These service delivery models include full in-person (within the school) setting, virtual-only interaction or a hybrid model of virtual and in-person learning. These models of instruction can even be on a staggered schedule and change week-to-week.

### **Communication Breakdown:**

Communication breakdowns should be consistently considered when speaking to DHH. When a message is not understood, blame is often placed on the listener. But it is both the speaker and the listener who have an equal responsibility for ensuring the intended message is understood. As a speaker, I should ask: What can I do to minimize the communication breakdown? Should I rephrase the question? Should I say it louder? Should I say it slower?"

### **Communicating with PPE: Impact on Students Who are DHH:**

A key question that exists is "How do we help our students who are DHH during the COVID-19 pandemic?" Each student's hearing acuity, learning style and receptive language comprehension is unique. We need to consider each student's individual strengths and abilities before we as therapists make a decision regarding the type of Personal Protective Equipment (PPE) that we use for therapy with students who are DHH. We must treat every student individually and make decisions regarding mask types, hearing, learning, and understanding according to their unique needs.

### **Self-Advocacy Skills for the DHH During COVID-19:**

Now more than ever, self-advocacy skills are an imperative for the students who are DHH within the learning environment. Students who are DHH should be given the opportunity to express to the school's instructional staff their areas of difficulty so the school can most effectively educate these students. The combinations selected by students will be unique to their hearing and learning needs. Some students may require a Functional Modulation (FM) system, ask their therapist to wear a cloth mask, and provide visual support before the lesson. Other students may request their therapist wear a clear mask and utilize an FM system only. Other students may indicate they would prefer distance learning to see their therapist on the screen without a mask paired

with the use of closed captioning (CC) to best facilitate learning.

### **Gaining Access to the Curriculum: COVID-19 and Individual Assessment:**

Individually assessing each student's needs to determine what works best for the individual may take some time and creativity on behalf of the therapist. Masks have changed the way DHH students are educated without consideration of the implication of the recommended safety approaches. We must be aware that we are all in this together and we must figure out what works best for each student. Encourage students, families, and staff to think outside the box when it comes to educating DHH students during this special time. Other instructional methods and strategies may include functional listening evaluations, time in a sound booth, experimenting with different masks, small group instruction, and one-on-one teaching sessions to impart new concepts.

Accessibility to online learning platforms (Schoolgy, Google Slides, Google Classroom, pre-recorded lessons using Loom) have become an integrated part of our daily teaching modality and are quickly becoming the rule than the "exception". Perhaps we should reframe our thinking and look at this new way of instruction as an opportunity for us as educators and therapists. We can broaden our knowledge of using online learning tools and a variety of media platforms to incorporate these into our sessions and classes. With accessibility to online learning materials, you may consider a variety of tools to better understand and figure out what works best for each student. In this time of uncertainty and high stress, there is no right or wrong answer. Now more than ever, it is our opportunity to truly serve our population of hearing-impaired students to give them the assistance they need to navigate the new world of wearing masks.

### **Suggestions for Improving In-Person Communication:**

- Speaking in the same room as the person with whom you are speaking; do not yell across rooms or between rooms
- Face your communication partner (i.e., do not turn your back to the other person in your conversation),
- Turn down background noise (television, radio, music, vacuum cleaner)
- Call the listener's name to gain attention before speaking

- Describe the topic you are speaking about so the listener can better guess on words that were missed.
- Look at the person with whom you are speaking
- Do not touch or cover your mask while you are speaking as doing this can further reduce sound transmission through the mask. Placing hands near your mouth may also add a visual distraction to the person focusing on listening
- Ask your communication partner to write down what they are saying. If a pen and paper is not available, suggest they use a cell phone (i.e., open the Notes app. or a new text message box) and ask them to type and share their screen with you
- Be precise when describing what you did not hear (e.g., Did you say, “hat or “cat?”, “The last word I heard clearly was “book;” I heard you up until the word “happening;” What did you say before the word “house?”)
- Ask if they would be comfortable taking their mask off while they speak if you agree to remain masked while keeping a six-foot distance.

### **Speaker and Listener Responsibilities when Communicating:**

- Inform your communication partner of your awareness and understanding during a conversation. Nodding shows the speaker that you are comprehending what is being said. Gestural cues such as a thumbs up, paired with nodding can also send the same message. Visual information tells the speaker a clear message that is comprehensible. Alternatively, pointing to your ears, paired with shaking your head “no” also sends a message that you do not understand the message. Follow this by requesting the speaker repeat or reword the message.

### **Suggestions for Wearing a Mask with Hearing Aids:**

Due to the location of hearing aids, masks prove to be a challenge when placing or removing a mask. There are a few concerns that I will describe with regard to placement of and removal of your mask. These strategies might help increase awareness of hearing aids during mask usage. I would recommend that you wear your mask using the following strategies to ensure that you do not interfere with your hearing aids and that you are still maintaining adequate coverage of your face and nose:

### **Mask Wearing Considerations**

- Use a mask that has thin straps: If the straps of a mask are thick, it will take up more room behind

the ear. A thin strap will allow for more space behind your ears.

- Ensure proper fitting of the mask: If a mask is too small, your ears will be pulled forward, which could compromise the seal of your hearing aid inside of your ear. It might also reduce the fit of the hearing aid that is worn behind-the-ear. Ensure that your mask is the correct size to both cover your nose and mouth, and that your hearing aids are not falling off of your ear(s).

### **Mask Removal and Placement:**

- Make sure that you are not pulling off your hearing aids when you remove your mask. Feel around your ear(s) to locate your hearing aid. Slowly remove the mask’s straps, holding your hearing aid in place as your second hand removes the straps. If you have reduced mobility of your hands, ask another person to assist you in removing your mask.
- Ask for assistance with mask placement and removal: If you have reduced dexterity (movement of your hands and fingers) ask a trusted person to assist you. Alert the person of your hearing aids and show them where your hearing aids are located prior to their assistance. Always feel for your hearing aids before and after mask placement and removal.
- Consider wearing a mask that tie around your head. Masks that don’t have to wrap around the ears are better for those with hearing aids.

### **Environmental Concerns when Removing Your Mask:**

- Try to avoid removing your mask when you are in the car, above a sink, in a restroom, and other public gathering space (i.e., restaurant, hotel). These locations are spaces that might prove more difficult to locate your hearing aid(s) if they do fall off when you remove your mask.

### **What to Do if Hearing Aids Fall Off when Adjusting a Face Mask:**

- Some hearing aids have a feature called “Find My Hearing Aid” which, when paired with the person’s smart phone, will send a signal to the hearing aids indicate whether you are getting closer or farther from the device. Even if your hearing aid is lost outdoors and runs out of battery charge, your phone’s GPS will show where the hearing aid was when it was last connected.
- If your hearing aids do not have a “Find My Hearing Aid” feature, be patient and ask for assistance from others around to help you search

for your lost hearing aids. Try to identify the area where it is most likely you lost your hearing aid.

- If you are unable to find your hearing aids, call your hearing aid provider to find out if your hearing aids are covered under a “loss or damage” policy for replacement.

The strategies, suggestions and accessibility features compiled below are intended for therapists to share and use with students who are DHH. These resources are aimed at assisting students using virtual communication by incorporating assistive listening devices, phones with captioning, smartphone apps into their daily life. The technology described below will help change spoken language into text, and the strategies described serve to help the DHH advocate for themselves when spaced apart and communicating with others wearing face masks.

Many types of technology support individuals who are DHH. These devices have accessibility features including:

- Adding Captioning to a smartphone: The following captioning applications are available to be downloaded for smart phones: CaptionCall (iOS), Clarity, Clear Captions (iOS), InnoCaption (iOS and Android), Hamilton (Android)
- Pairing Your Hearing Aids: Hearing aids direct input to device: Many hearing aids now can be “paired” (i.e., Bluetooth pairing) to your devices. Once you pair your hearing aid(s), you can control the input volume with your device. This allows you to hear phone calls and other audio more clearly on your cellphone or other device (i.e., tablet or iPad).
- Allow Subtitles when viewing videos: Some video content online includes alternative accessibility features such as closed captions (CC) and subtitles for the DHH (i.e., called SDH). For example, YouTube has videos that have a “CC” button on the control bar of the video. By clicking on the “CC” button, subtitles will be enabled for the video you are watching. You may also change the subtitle’s language to best fit your needs.

- Use visual alerts on your smart phone: Some phones have an LED flash (i.e., your camera’s flash) on your phone that blinks when your device is locked. This can be useful if you don’t want to miss a notification while your device is locked.
- Utilize RTT calls when needed: Real-time text (RTT) phone calls provide instant transmission of a message as you compose it. Transcripts are saved in the call history of the Phone app. You can upgrade a regular call to RTT.
- Make your conversations more visual with FaceTime or Video Calls: FaceTime (iPhone) and Video Calls are another way the DHH may wish to communicate with others. These video calls enable you to have live video wherever you and your caller are at the time. Such video calling uses high-quality video and fast frame rate making it an ideal option for communicating with sign language. Furthermore, if the person you are calling is home, they may wish to remove their mask, which would allow you to see their lips.
- Live Listening or Live Streaming: Developers like Apple have created a feature called “Live Listen”. This option pairs your smartphone (iPhone, iPad, or iPod Touch) to a remote microphone that sends sound from your environment to your hearing aids or your earbuds.

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## References

Centers for Disease Control and Prevention. Considerations for Wearing Masks: Help Slow the Spread of COVID-19. 2020. (<https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/cloth-face-cover-guidance.html>)

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