# AT Update: What’s New in 2021

## [Introduction]

**TRACIE DeFREITAS:**

Welcome everyone, and thank you for joining us for the JAN Accommodation and Compliance Webcast Series entitled "AT Update: What's New in 2021" presented by JAN's Sensory Team Lead Consultant Teresa Goddard and JAN Motor Team Senior Consultant Matthew McCord. My name is Tracie DeFreitas, and I'll be your moderator this afternoon. Before we begin, we do have some housekeeping items to cover.

First, if you experience technical difficulties during this training, please use the question-and-answer option at the bottom of your screen to submit a question or use the live chat at AskJAN.org -- that's A-S-K J-A-N.org. We also offer an FAQ that may answer some of your questions at the link provided here. This FAQ is linked in the email that you received with the event log-in information.

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Now let's get started with today's training. Teresa and Matt, tell us what's new in AT.

## [JAN Overview and AT Basics]

**MATTHEW McCORD:**

Thanks, Tracie. I'm going to begin our discussion today with a brief overview on JAN just in case we have some newcomers, and then I will discuss some AT basics, as well. Teresa will then review JAN's Interactive Process with you all, and then we will both discuss some AT-centered situations and solutions. Along the way we will review some interesting new AT that is either fresh on the market or currently in development, and finally the floor will be open to you all to ask questions at the end, as well.

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For those of you that are new to JAN, welcome. We are a free consultation service that helps people understand job accommodations, Federal employment-related disability rights laws, the resources an individual with a disability can tap into to start a small business, and more. We've been around since 1983, so even longer than the ADA has been around, and we are just one office in Morgantown, West Virginia, but we provide our services to the entire U.S. and its territories. So if you ever have any questions , we're more than happy to help how we can.

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Now let's begin by defining what we mean when we say AT or assistive technology. There is some debate in the community on this, so here is the definition that we use here at JAN. To us, AT means any sort of device or service that helps a person with a disability achieve or maintain functioning. Some prefer to limit the term to only mean things that are designed to help people with severe needs, but we feel that AT can be simple and ubiquitous things, too and not just specialized equipment.

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Practically speaking, there are some good reasons to separate more traditional forms of AT and mainstream devices. For instance, traditional AT tends to be devices that are designed to complete a very specific task for a person with a disability, so they tend to be more specialized pieces of equipment with one or two intended functions. Meanwhile, mainstream devices like computers, cell phones, or iPads are used by so many people that their functions are designed to be useful to a much wider audience. These mainstream devices can and are helpful to people with disabilities, but they are not designed specifically for their needs.

I think the key here, though, is that accessibility in mainstream devices has become a much more prominent concern, and because of that we have built-in accessibility features for these devices right out of the box. Features like speech recognition, word prediction, color contrasting, and more are all standard features now. And because of this, that line dividing traditional AT and mainstream devices gets more blurred as time goes on. In a sense, the goals of traditional AT are being incorporated into our everyday technologies. And because of this, we see both as forms of assistive technology.

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When we think of assistive technology, we might automatically think of high-tech futuristic devices rather than simple modifications. In this slide, we have a picture of a woman communicating with a coworker through a robotic telepresence device, which is a newer technology that could be useful for someone who works from home. Other high-tech options could include alternative input devices, specialized software options, or alternative and augmentative communication devices, also called AAC devices.

But often AT is low-tech and can be implemented fairly easily. Workspace modifications can often be made at little or no cost. And there are all kinds of inexpensive low-tech devices like the pencil gripping aid pictured on the slide. AT may be a custom-designed or custom-modified product, and customization doesn't always translate into high cost either. Removing the legs of a computer desk can be a very low-cost custom modification for an individual of short stature, for example.

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Now that we have a good foundation on what assistive technology is, let's briefly discuss some of the ways that you can keep abreast with all of the newest toys in the AT world. Pictured on this slide are the logos of four prominent AT conferences that we wanted to mention today. First up is the Assistive Technology Industry Association or ATIA. They strive to be the collective voice of the assistive technology industry to help ensure that the best products and services are delivered to persons with disabilities. They put on an annual conference, and their next one is happening in January.

Next is the California State University at Northridge or CSUN. This university puts on an annual conference on assistive technologies to share knowledge and best practices, to help ensure inclusion for everyone. CSUN's next conference will be coming up in March.

Closing the Gap has a conference coming up in October. They discuss AT but have a focus on special education and resources to help enhance the classroom experience for these teachers and their students.

Finally, the Assistive Technology Advocacy Center of New Jersey will be putting on their fifth annual New Jersey Assistive Technology and Community Living Summit next month. Their summit focuses on empowering people with disabilities to increase their independence by connecting state agencies and community living professionals with them.

Any and all of these conferences are great places to help you stay up to date with AT. So if you are interested, I encourage you to give them a look.

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Now I'll turn things over to Teresa so she can help you figure out how AT fits into the ADA accommodation process.

## [AT and the ADA Accommodation Process]

**TERESA GODDARD:**

Thanks, Matt, for that overview, I really appreciate it. I think you did awesome. I think, Matt, you would agree that we often hear from our callers that the world of assistive technology can be exciting but also a little bit intimidating, Especially if you're not accustomed to making assistive technology-related accommodations on a regular basis. For some workplace problems, there are just so many options to choose from that it's hard to decide which to implement, but in other cases the resources might be so limited or so poorly publicized that something might work perfectly for your situation, and you would just overlook it because you haven't heard of it before. And, of course, in some cases a different type of accommodation might make more sense than purchasing assistive technology, or you might need to combine assistive technology with one or even more other approaches in order to achieve an effective accommodation. So sometimes AT might be only part of your accommodation solution.

I'm going to quickly review JAN's Interactive Process, which you can use to narrow down your accommodation options and implement one that will be effective. And then we will jump into some case examples where assistive technology was used as part of an accommodation solution.

Next slide, please. Oh, we're already there, Tracie, thank you.

The interactive process is basically a process for recognizing and responding to an accommodation request that will hopefully, in most cases, lead to a successful accommodation. On this slide we see JAN's six-step Interactive Process.

First, in order to respond to a request, one must recognize that an accommodation request is being made. In order to make a request, an employee or applicant must, as a first step, make it clear that they need a change in the workplace or in the way that things are done in the workplace, and that the change is needed for a medical reason. Of course an employer might need more information in order to respond to the request, but this is usually enough for the first step. If someone is asking for a change in the workplace, whether it's a different headset or a change of schedule, and they indicate that it's for a medical reason, it's likely an accommodation request to which the employer would need to respond.

In Step 2, the employer would gather information needed to respond to the request. And this might include asking for some clarification from the employee or reaching out to resources such as JAN or the state AT project. It could also include requesting medical documentation, if the disability and need are not obvious and the person has not already provided sufficient documentation to you.

Next, the employer would use this information to explore possible accommodation options and to choose one or sometimes more. The EEOC does not require employers to provide the exact accommodation that someone has requested, but it does require that the employer choose from among the range of effective accommodation options. So whatever they choose needs to be effective. Effective in meeting the needs of the individual.

Finally, the accommodation is implemented. In the case of assistive technologies, this step might include coordinating with I.T. within your organization or providing training on the use of assistive technology so that the person can really get the most out of it. Employers should also monitor the accommodation by checking in to make sure that things are working as they should. Particularly in the case of assistive technology, it is common for routine practices, like updating software, to have an impact on how the assistive technology functions. For example, when other software that you're using is updated, it could impact the way screen reading software works. Sometimes the impact might be that some of the functions stop working and might need to be addressed.

Providing a successful accommodation is an ongoing process, but with the six steps, hopefully you can keep your accommodations on track.

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### [Example: CCTV and Magnification]

Let's look at an example. This is actually derived from a real JAN case which I handled, and, to tell the truth, there were some parts of it that made me a little bit mad. In this case a massage therapist who was legally blind needed to access printed information, including a master schedule that she needed to access in order to confirm and schedule and plan for appointments. Some of the information that she needed to access was related, for example, which room in the facility she was going to use at a particular time. And she needed to know not only patient but also non-patient-related information like which rooms were already scheduled for future appointments. Maybe who was going to be working on the days for which she was scheduling. She wasn't able to successfully read this information without magnification. So let's look at a typical solution.

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So there are a few ways to resolve this kind of issue, but one really typical accommodation is to provide a magnifier. The type of magnifier that the person needs is going to vary. In this particular case her acuity was such that a CCTV or desktop-type digital magnifier worked really well for her. On screen we have an image of the Prodigi desktop electronic magnifier from HumanWare. Usually that runs around for around 2,000. If you go on in the near future you'll see they currently have it down around 1500. That's just an example of a current model of this type of device. There's certainly lots of others out there. It's a good solid product, though. The model that she was actually using was not this one. It was another older model. If you get these they can last for a long time. They tend to be pretty durable.

She had had actually an evaluation at one point. Usually these days you might have one with a CATIS, C-A-T-I-S, evaluator if that's an option. She didn't have one with a CATIS, but in any case they determined that the magnifier she was using was the best type for her. She really needed the large-format screen, thus the desktop magnifier. But the employer actually wasn't the one who provided the CCTV. They also didn't provide screen magnification software.

So what the employee had chosen to do was bring in her own magnifier. That's a little bit unusual. These are pretty expensive, and people don't want to take the risk that something could happen to them in the workplace. And also usually employers are pretty good about providing magnification. Even enlarged-print font on the scheduling sheets might have helped this person a lot. But the employer didn't do that, either.

So let's take a look at the next slide.

What if, as in this situation, a digital format might be on the way, but it's taking a long time to implement? And the CCTV is not always available because of where it is stored. That's exactly what happened to this employee. Her CCTV was very large. Very hard for her to move independently. And it wasn't always stored in the same room. For some reason her coworkers were picking up her CCTV and moving it around the office to whatever location was most convenient for them. Not for her. Not effective. She couldn't sometimes find her CCTV. So even if you keep your CCTV in one room all of the time, which didn't happen for her, sometimes it might be hard if you need to read something maybe that's posted on the wall in another room or that's stored in another room. It could still be an issue.

In theory, as we'll see on the next slide, electronic health records should go a long way towards solving any patient information piece of this problem. So in theory, you should be able to get your patient information from the computer, if it's compatible. However, based on what we've heard from our JAN callers, there's actually a good bit of variation in the accessibility of the electronic health record systems that are available today. In fact, it's not unusual for someone to do really, really well with one electronic health record system but then face real challenges if they take a job in a hospital that uses a different system with less robust accessibility. I've even spoken with people who have changed jobs due to this issue.

In one case a woman completed her training and took her first job at one hospital, got a great offer at another hospital but couldn't make it work. She wasn't able to get an effective accommodation in place to let her access the electronic health records of the second hospital. So in the end, when she had an opportunity, she went back to the first hospital, because their records system was something that she could access.

Of course even with the best system, you can have an update that temporarily breaks accessibility. And there's also just some information that's convenient to access in hard copy. Like a table that displays a schedule. You can certainly have that in digital format. But for some situations, it just might be quicker and easier to put a hard copy under the magnifier.

And finally, handwriting recognition is still a problem. There are some smartpens that will transcribe your own handwriting. And also Seeing AI is an app that can recognize some handwriting. It doesn't do that great with mine. But it does great with a lot of other peoples' handwriting. So those are some kind of similar ways to handle these types of access issues. If you're in a situation like our caller was in or like her employer was in with her, what can you do? What are some options to consider?

Let's take a look. First of all, you want to find a storage location for the AT that is secure and accessible. One of the things that really bothered me about this case is that the person had brought in her own personal device and the coworkers would just feel free to move it from room to room as they saw fit. And having low vision, sometimes it was really difficult for her to even find where her CCTV was in order to use it. And also with people moving it around -- it's not that you can't move them. You can. They are technically portable, even though they can be kind of big. But every time you move it, there's a risk of damage.

We don't have to solve every problem with AT. You could also designate someone, perhaps a coworker, to assist as a qualified reader. If somebody needs a qualified reader a lot, you might hire a contract for that. But often a coworker can provide the support that's needed, especially if there are only a few things that can't be read in another way. You could also seek assistance from state vocational rehabilitation. Or if you need scripting so that something will be screenreader-accessible -- that means it can be read by screen reading software that a person who is blind or has low vision can use -- then you might talk to a scripting vendor. That would be a vendor that specializes in writing computer code to make it easier for the screen reading software to understand what's going on with the other software and what needs to be read from the screen.

There are also some portable options. One is OrCam. So that's designed to clip onto a set of eyeglasses kind of on the side here. There's a little camera and an earpiece. And, using finger gestures, you can indicate to the device what you would like to have read aloud, and you will hear it in your earpiece. The newer models also offer some facial recognition and object recognition.

Aira is a service that works similarly except that the reading and identification and so on are done by a live sighted assistant who is able to access a camera via the Internet. Usually it's connected to your phone. And then your phone is connected to this service via the Internet, and the representative provides whatever sighted assistance you might need in that moment, whether it's reading a street sign or reading something in handwriting. Sometimes they might redirect you around an obstacle that you weren't expecting to encounter as you're walking towards your destination. So that service offers different tiers that cost varying amounts depending on how many minutes per month of the service you think you might use.

And again, there are various portable digital magnifiers. If you go to the JAN website you'll see a number of options, but sometimes because of the size of the screen these are small. You hold them in your hand and carry them around, perhaps on a lanyard. Because of the small screen some people can't get enough enlargement on them to do much reading. They might be good for zooming in on something they might need to get a closer look at or for reading a few words at a time, but for some people they really need the larger screen that comes on the CCTV just because they need so much enlargement that to fit enough words on a little screen is difficult.

And finally, as we mentioned earlier, Seeing AI is an app that does text-to-speech. You can point your phone with the app on it at something you're trying to read. And it will read the text out loud and also does really well with unusual fonts and with some handwriting.

Now I think Matt has another example to share. Take it away, Matt.

### [Example: Alternative Input Devices and Speech Recognition]

**MATTHEW McCORD:**

Thanks, Teresa. For our next example, we have a customer service representative who has carpal tunnel syndrome. They work in a call center, and they are having some trouble meeting their talk time metrics. Their pain is making it hard for them to complete their tasks fast enough. And as the day goes on, the pain only gets worse, and they are forced to slow down. So they're afraid that they are going to be disciplined if they don't find a way to improve and get their talk time metric back up to where it was supposed to be. So this person called in and was looking for accommodations that they could then request to their employer. So let's go into what was suggested.

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So in this situation we encouraged the employee to disclose their disability and request for accommodations. Specifically we suggested requesting things like a vertical mouse, which is pictured on this slide. Vertical mice function just like how a normal mouse would function except that rather than them being held in the typical way, they are designed so you can move them around while maintaining a non-twisted posture on your mouse. So normally whenever you're holding it, you're holding it with your hand over it like you're grabbing onto a handlebar. but in this way you're turning it sideways so that way there's no flexing of your wrist, so that way there's a lot less strain put on your wrist. Also we suggested things like alternative keyboards that are designed to require less force to type on them. And also we suggested an ergonomic assessment just to see if there are any adjustments that need to be made to the workstation in general to help minimize the person's pain.

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But what if these devices don't help, and the assessment comes back saying that the workstation is fine as it currently is? Or what if the situation is more complicated, because the individual's needs are so severe that they should avoid using one of their hands altogether? What else could we consider to assist them if this were the case?

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One option that seems unlikely at first in this sort of work environment would be speech recognition software. Certainly being able to use a dictation software would minimize the amount of keyboarding needed, but what about the caller overhearing the employee dictating to the software? Or what if the software overhears coworkers who are on the -- a call nearby, and it dictates their words, too? Well, to prevent the caller from overhearing the employee, the employer could consider either a dual-channel headset to allow the employee to switch their mic between the caller and the computer as they need to, or they could utilize a software program that enables the employee to mute their mic, transmitting to the caller, without muting the mic itself. For the possible issue of overhearing other workers, a stenographer's mask could be provided to enclose the mic and the wearer's mouth inside of the mask to limit such background noise from being overheard by the mic.

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In addition to speech recognition, there are still other possible options, too. Things like miniature keyboards or especially designed one-handed keyboards can help facilitate typing via the use of only one hand. Miniature keyboards are just like the type of keyboards that you are used to seeing except they're designed to be about one-half to one-third of the size so all of the keys are in the exact same layout. They are just so much smaller that it's easier to move one hand around and hit all of the keys easily. One-handed keyboards, though, are designed very differently. They are designed to -- with one-handed use in mind whereas miniature keyboards are not. The keys are laid out in a very different pattern. So that way you can click everything either flat on the ground or up a little bit. It's basically an "L" shape. And then you can click as you need to on the keyboard. So those are two options that can help with the same need. But depending upon the individual they might prefer a miniature, or they might prefer the one-handed, so you might want to try out both and see what they like.

There are also specialized input devices that track head or eye movements and process those movements as inputs into the computer, too. A lot of these things function similar to webcams, but the webcams will zoom in on specific facial movements or eye movements and transcribe those into mouse inputs. So an eye movement tracking mouse might have a software designation where if you blink twice, that would be a right click. Or if you blink once that might be a left click. Those are just potential options. A lot of these things can be very specialized with the kinds of movements that you need to do for it to understand that you're not just blinking, that you're doing this intentionally to do mouse movements, but those are the kinds of things you would expect from those kinds of softwares and product solutions.

In addition to all of these AT options the individual may also benefit from schedule flexibility to enable them to take more breaks and rest their wrist more as they need to.

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Speaking of one-handed computer use, I wanted to take a moment to point out this interesting piece of AT I found. It is called the Tap Strap. It works by the individual wearing the sensors on their fingers as though they are rings, and through specific hand gestures and different strings of finger taps, the user can both type and mouse with the same hand using this one device. Holding the hand as they would when they are holding a mouse on a table will place this sensor on the left -- on the left-hand side of the thumb ring on the table itself. And as you move that sensor around the table, that will tell the device that you are moving the mouse around on the screen. And as you have your hand in that posture, finger taps will simulate the left click, the right click and other mouse functions. If you wanted to use it for keyboarding, then you would hold your hand as you would when you are typing on a keyboard, and then specific tapping gestures will simulate different keystrokes on the keyboard. One thing that's really nice about this product is that the tapping sequences that you need to do are completely customizable. So it will come preloaded with a specific loadout of, you know, you tap your index finger once to hit this key, you tap your index and your middle finger once to hit this key. All of those can be completely customized to better fit your own needs. So that way if you happen to have really bad pain in your index finger, you can make it so that way you only use your index finger very rarely or at all. So that's one reason that I thought this was a very interesting product that I wanted to share with you all. It's not as expensive as you would think. Last time I checked on it, it cost around $200 for this type of software. I thought that was actually very affordable. So that's something that I thought was very interesting.

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Now I'll turn things back over to Teresa, and she'll go through an AT example for hearing needs with you all.

**TERESA GODDARD:**

Hey, Matt, thanks for that great example. I love the Tap Strap, and is this the second model of that?

**MATTHEW McCORD:**

Yes, it's the second model. They -- One of the things that I also noticed that I forgot to mention was there's actually a mode where you can do mousing with just, like, pointing gestures like if you're doing a presentation you can just do different pointing gestures with it, and it will do mouse movements without you even needing to have to have yourself near a table. So that's something that's interesting about it too.

**TERESA GODDARD:**

Very cool. And I love your discussion of different types of mice. As you might know, Matt, I myself use three different mice I rotate through throughout the day. Sometimes you can't get by with one set of features for the whole day.

**MATTHEW McCORD:**

Sometimes you just need to try out different things, and sometimes your needs change as the day goes on.

### [Example: Transcription, Captioning, and Interpretation]

**TERESA GODDARD:**

Very true. All right. Well, I want to talk about a hearing example where multiple modalities were also used. So if we can look at this hard of hearing slide, this is an example that arose from the Sensory Team at JAN's experiences responding to questions during the current global health emergency. So this example is a little bit of a composite, although there really was a question from a team that looked a lot like this one. Some of the most memorable cases that we had actually involved teams of engineers. And we did have one case that really stands out in my memory, but actually even more than one case that involved teams of engineers who are deaf or hard of hearing. and in one case there was a team of engineers that included both deaf employees who were ASL users and also coworkers who were hard of hearing and some coworkers who were hearing, but they may have had other disabilities, too. But anyway, there was a mix of hearing needs within the team. Some needed ASL. Some needed captioning. CART transcription is what they were using. And some really didn't need any particular accommodation just beyond the use of their own hearing aids or other personal devices and also a group that had effective meeting etiquette.

One of the most important things you can do to improve meetings for your employees who are deaf or hard of hearing is to make sure you have a group that's functioning well. That uses good effective meeting etiquette with one person talking one at a time whenever possible and good effective turn-taking.

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So a typical approach for meetings is to provide CART services. This is where you have a professional captioner, perhaps in the room with you, typing, listening to everything that's said, typing everything that's said. One advantage over this service versus an automated captioning system is that there's a human being in the room that you can communicate with and can notice mistakes and correct them. Also they have the capability of learning the names of your team, learning kinda of how your team's meetings flow and the types of vocabulary that you use a lot. Same thing goes for community-based interpreters. A lot of teams really develop strong relationships with the interpreters they work with regularly. The interpreter also learns, you know, the language, the jargon, the vocabulary that the team needs, and it just can be a real benefit when you have a good working relationship with those who support you in terms of captioning and interpretation. And it can also be really, really helpful to check in with any employee who uses hearing aids to see if there's some device or accessory that they might benefit from to connect their hearing aids to a sound system in a room. It can also be helpful to address background noise. And I just want to say this again, encourage good habits for effective meetings like appropriate turn taking. It's so important, either for a person with a hearing issue or attention issue, if one person is the primary speaker at a time.

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And now this isn't really AT-related, but people often ask about tips for communicating with someone via a sign language interpreter. And to be honest, the most important thing is just to choose a really effective interpreter for your situation. It's ideal if you can find somebody who can develop a relationship with your team and who is very knowledgeable on any industry jargon that you might use. It's also good just to remember to relax. Use your normal tone of voice. Your normal speed. Make sure that you're directing -- interacting directly with the person who is deaf rather than facing and interacting with the interpreter. And make sure that you're respecting that interpreter's professional judgment and ethics. If they say they need a second interpreter for your meeting, there's probably a good reason for it. So respect that. And don't ever ask an interpreter not to interpret something, because that's likely a violation of their Code of Ethics.

So let's take a look at the next slide.

So on the screen, you see a picture of a captioned telephone. This is a telephone where you can display captions of what the person on the other end of the line is saying. And I chose this picture because so many teams contacted us saying they were having trouble. They were struggling with communication following the sudden pivot to remote work, and also adjusting to the use of different remote meeting platforms at the same time was just really, really challenging. People were unable to access their preferred accommodations in some cases. It wasn't initially really clear to employers how they should address those needs. And part of that lack of clarity certainly stemmed from the fact that we just didn't know how long we were all going to be working remotely. So some employers were like, "Well, it's going to be a short time, so I don't want to spend a lot." Others were like, "Okay. We'll shell out for interpreters and captioners for every meeting, because it's only for a short time, and we won't be doing this forever." So we saw employers making decisions both where they were minimizing spending and where they were okay with spending a lot because of the expected short duration. And in fact, it's been going on for quite some time now. So let's take a look at the next slide. What we found was that individuals who were deaf or hard of hearing were really eager and adept at trying to find their own solutions. In some cases they tried to implement these on their own. In other cases they were just thinking and thinking, "What can I ask for ask for that might help?" which is exactly the attitude that you want from your employees. It's good if people can be proactive and come to you with possible solutions.

So some of the things people tried were relay services. So in other words, some people were calling into their meetings via telephone and then using a captioning service for telephone use or the Video Relay Service in the case of our ASL users to try and access the meeting in that way. I've heard from some people that some of the relay providers weren't permitting that. Also, particularly with telephone captioning, there is a tendency for the captioning to fall behind what's being said. Some people who were hard of hearing simply adjusted the volume on their computers or devices. People who were hard of hearing sometimes had good success by dialing in and using a telephone amplifier. For people who still have a landline telephone., the Speech Adjust-a-Tone is one example of a very easy-to-use and very customizable telephone amplifier. So there was a lot of interest in automated captioning, even early on. People are still using that but not in the same exact way that we saw, say, in mid 2020.

We did see people increase their use of chat functions on the various platforms that they were using. That was interesting. One thing that people like to do is pose questions via the chat, provide links, maybe follow up on a coworker's question without, like, interrupting the flow of the meeting. It can be helpful because you can save the chat and of course with Zoom you can have a private one-on-one chat with another participant while the meeting is going on in some cases. I would caution you, though, that often whoever is hosting that meeting might be able to download a chat transcript that also includes the one-on-one conversations, so just like you would always be professional in open chat, you want to be professional in a one-on-one chat just in case a boss is able to access that.

One of the most effective solutions and one that's become even more common in recent months is the use of remote CART and/or Video Remote Interpreting. Remember you want to choose the best option for your participants, and sometimes it makes sense to have both at once. I've certainly been in meetings and trainings this year that included both a remote CART provider doing captions and a video remote interpreter doing ASL, and sometimes there might be more than one interpreter if they need to switch off due to a lengthy meeting.

People who use hearing aids might also want to get in touch with an audiologist or with the company that sells their hearing aids to see if there are accessories that might be compatible with the hearing aids and help them to better hear on the computer, because you might need a different adapter for the computer than what you usually use for the phone. This also goes for people who are hard of hearing and might be considering getting a hearing aid for the first time. A lot of times people want to try other solutions first, maybe thinking that they'll be cheaper. There are some really good assistive listening devices out there, and we're starting to see more use of over-the-counter hearing aids. Those are not available in all states at this time. If you go online to buy one, you might see it can only be shipped to certain states. But my theory is audiologists go to grad school for a long time and can be extremely helpful, so if you have the means, maybe see an audiologist.

So let's take a look at what was learned on the next slide.

What did we learn from this experience of trying to respond to so many questions about accommodations for meetings? One thing that stands out is that automated captioning options, cost effective. Easy to implement. But they're not always as accurate as you want them to be. Particularly if there's a lot of technical jargon in your meetings or medical terms. The automated options just don't tend to pick those up as well. They just might pick a different word than what you're intending. So that puts an extra cognitive load on your employees who are deaf or hard of hearing if they have to try to figure out what you meant to say or what you did say versus what the automated captioning service thinks you said. Also if there's a lot of background noise in the same room with the person who's speaking in the meeting, that can impact how well these function. Human ears and brains just do a really good job of filtering out that background noise. Versus a computer and a microphone.

There is one innovative use, though, that I really -- I really enjoyed seeing in action. And when it was explained to me why it was being used, it made a lot of sense. And this is some people are maybe engaging a video remote interpreter to provide sign language support but also using a free or low-cost automated captioning option. And they keep that going in case of a technical issue. Like if the sign language interpreters would suddenly lose the video or audio feed. Then hopefully the automated captioning could keep going. The automated captioning, it can work as a sole option, but you just have to understand that the captioning quality might not be the same that you're used to. And there won't be a human at the controls who can stop to correct something unless you're using something like remote CART captioning or something like Ava's human-assisted version of captioning.

One other thing that came up a lot is that remote CART and VRI, Video Remote Interpreting, are trusted services. Employees have the expectation that those are going to work well and that the service will be provided with a high level of professionalism and accuracy. And that goes for employers, too. But it can be hard sometimes to think, "How are we going to pay for the cost?" But it's really worth it, if it really is a good effective option for your team and your team trusts it. It's very important for all of our teams to have good communication so that we can work well together.

One other thing that I mentioned was chat. A lot of people were using chat to facilitate conversations. And this is helpful even to employees without hearing impairments. And some people just like the remote meetings because they have more control over volume. Some people found dialing in to be very effective also, because they can use a telephone that worked well for them or because they were able to go through something like a captioning service in some cases. So there were a lot of things that can work. Pick the best option for your team. That's the best thing I can say.

Now I think Matt has another example about back issues. Matt, take it away.

### [Example: CPR and Patient Movement]

**MATTHEW McCORD:**

Thanks, Teresa. For our last example today we have an employer contacting us because an LPN that works for them recently injured their back and is temporarily restricted in things like lifting, pushing, and pulling. The issue, though, is that these restrictions are making the employer concerned that the LPN may not be able to respond in the event of an emergency and provide CPR. Specifically CPR's chest compressions, which can be a very important thing for an LPN to be able to do. So that's a very understandable concern for them to have. Next slide, please. In these sorts of situations, the employer's first impulse is almost always for them to review for a possible reassignment to a less physically demanding position until the individual 's needs lessen. And this could certainly be effective if the individual would like reassignment or if a vacancy does exist. It may also be possible to modify the work duties that the LPN currently has in their current job so they can take care of things like the charting for themselves and other coworkers or other documentations or working at the nurses station and taking phone calls and other things like that, shuffling those duties around might be effective for a short-term solution.

Next slide, please.

But what if the individual doesn't want to work in a less-demanding job? Or what if there are no vacancies that need to be filled? Or what if the jobs are structured in such a way where having someone else do your charting just leads to far too many errors? A common next step for an employer in this situation would be to consider allowing leave time. After all, the needs here are temporary, so leave may well be effective. But could there be some other accommodation that might enable the employee to stay at work instead of going out on leave?

Well, next slide, please.

One possible solution would be a hands-free resuscitation device. These specialized pieces of assistive technology will perform the chest compressions on a patient in place of the medical provider. So long as the employee is properly trained in how to use it and how to secure it to the patient, this may well enable the employee to fully respond in the event of an emergency and provide all aspects of CPR. So on this slide I wanted to provide a picture that kind of points out the different aspects of one of these devices. As you'll see that there is a backboard that's secured underneath the patient so the individual would have to be able to lift the patient to put them into it first. So there's probably going to need to be at least some ability to lift there to use this. Once they're actually in it, though, and secured, and that backboard is locked into place, so long as that piston that's in the middle of the picture is secured and positioned in the proper location, they should be able to just turn it on, press the button, and it will start doing the chest compressions. It's a very -- it's a very innovative solution. Something that I like to point out a lot on these calls. And I do get them more than I would like. But it's one of those things where it's a great option, and I think that people should be aware of it.

Next slide, please.

In addition to a hands-free resuscitation device, though, other options could be to include maybe allowing for a modified plan of action in the event of such an emergency like this. Patients who need CPR obviously need more than the chest compressions performed on them, after all. Life-saving breaths via the use of a bag valve mask are also important, as is retrieving AEDs, calling for help, and other actions, too. It may be possible to modify things so that this LPN does not work alone, and thus could tend to these other necessary tasks while their coworker performs the chest compressions. It may even be possible to combine these options together into one cohesive plan of action such as by allowing the coworker to do the chest compressions while this LPN who has the disability goes to retrieve the hands-free resuscitation device that can then be used on the patient. Such plans would of course require the LPN with the disability and their coworkers to understand how things are going to differ than the norm in these situations, but they can still be effective at helping the patient in need, and that's ultimately what we're looking at here.

Next slide, please.

While on the subject of medical professionals with back injuries, I just wanted to shine a spotlight on these pieces of assistive technology. Electric ambulance stretchers are designed to use motors to help Emergency Medical Service workers lower and raise the stretcher into various -- the various positions that they need them to be in as well as to help load it into the back of the ambulance. This will allow the worker to forego needing to physically do the lifting or pushing, pulling required to do these things typically. The item that's pictured on the slide is an example of one of these products. It's currently locked into place on the track that helps load it into the ambulance. Last time I looked into these particular devices, if you wanted just the stretcher itself that would be around 9,000, but if you wanted the track and everything that comes with it so that way it can be outfitted into the ambulance, that would of course be more pricey. Those are going to be about 20,000 for everything. So it is a more expensive option, but considering the amount of life-saving work that EMS workers do, I think that this is something that should be considered because not only is it going to help people with disabilities, it's also going to help limit those potential injuries that might happen on the job. And that can be a very valuable thing. Limiting those Workers' Compensation costs can help a lot and maybe even save you money, depending upon how things usually go. So it's something to keep in mind.

Next slide, please.

**TRACIE DeFREITAS:**

Matt and Teresa, we have about five minutes left. Just wanted to let you know.

**MATTHEW McCORD:**

I'll go ahead and turn things over to Teresa so she can discuss some of the solutions and trends with you.

### [New and Upcoming Products]

**TERESA GODDARD:**

Hey thanks, Matt, and thanks for that reminder, Tracie. We'll try to speed it up a little.

We just wanted to share some newer things with you, some 2021 solutions and trends. What's new with eReaders? From American Thermoform we now have a multi-line digital Braille eReader. An eReader that has multiple lines of Braille, not just one or two like we've had in the past. It's called the Canute, and it runs for about $2500. It might seem pricey, but for a Braille display this is amazing. Also if you just don't do well with the eReader options of the past, some of them are a little bit harsh on the eyes, but Amazon is now offering some Kindles with warm lighting options.

We do get questions, believe it or not, about hearing cats and emotional support cats. When we do, allergies of a coworker are often a concern. A team in Switzerland is working on a vaccine that you would actually give to the cat to make it less likely to trigger an allergic reaction in susceptible humans. It's called HypoCat. I would say keep an eye on that. Also the Molekule Air Mini is something we have suggested for allergens for a long time, but they have recently had their devices tested by the University of Minnesota. And in testing by air quality and virology experts at University of Minnesota, the Air Mini eliminated viruses like H1N1 and animal coronaviruses by up to 99.99%.

Also we're hearing a lot about questions about hearing versus masks. A lot of people used to not realize how much they relied on lipreading. There are clear face masks available such as the communicator mask from Safe'N'Clear.

We talked earlier about automated captioning options, and simple amplification can make a big difference. One that people to carry that's fairly low cost and very useful is called the Pocketalker. I would like to just touch really quickly on what's new in automated captioning. Interpretype has switched and now uses cloud-based transcription. Streamer from Auditory Sciences offers a remote solution. Ava has human-assisted captioning now. It costs a little bit but looks really interesting. Otter.ai now is marketing for assisted notetaking as well as captioning, and Zoom offers built-in and third-party-integrated options.

Now before we go I want to take a second to talk about brain-computer interfaces, exciting things happening in this realm. Researchers at UC San Francisco have demonstrated for the first time a brain implant turning neural activity into full words. So the participant in the first trial can now speak with a vocabulary of 50 words simply by thinking about vocalizing the words.

Now I think Matt wants to take a moment to talk about a glove.

MATTHEW McCORD: Yes. The last thing I wanted to point out that's currently in development is the Gyroglove. This is a type of brace that helps to limit the impact of tremors for people that have essential tremors or Parkinson's Disease. It's designed with a gyroscope that's fitted onto the back of the glove on the top of your hand. As the tremor happens, the gyroscope will help to adjust the weights on the hand so that way the weights are more dynamic and can help to lessen the impact of the tremor from moment to moment . Instead of a static weight that's on the wrist that might not be as helpful.

But beyond that, next slide, please.

### [Conclusion]

That's all for the content of our presentation. If you want to look into any other forms of AT that we have, you are more than welcome to review our website, AskJAN.org. Feel free to reach out, and we'll be happy to help you out, and I'll go ahead and turn things over to Tracie so she can close us out today.

**TRACIE DeFREITAS:**

Thank you so much, Matt and Teresa, great job. I do have one quick question to throw at you since we have about another minute.

**MATTHEW McCORD:**

Okay.

**TRACIE DeFREITAS:**

Does JAN recommend or endorse the use of any specific assistive technology?

**TERESA GODDARD:**

No, Tracie, you told us not to do that. (All laughing). No, we can't endorse or recommend any option or say for sure what will work for someone, But we do have broad knowledge of assistive technology options that we would be happy to discuss with you. Matt?

**MATTHEW McCORD:**

Yep, that's exactly correct. We don't endorse anything. We are not sponsored. But we do like to let everyone know what's out there, so that way they can see the full breadth of the market and pick what will work best for them.

**TERESA GODDARD:**

And I'd say we're two of the biggest AT nerds in the office, wouldn't you, Matt?

**MATTHEW McCORD:**

Yeah, probably. (Chuckles).

**TERESA GODDARD:**

I have some I'm using right now. I just got this Moleskine pen. It's very much like the Livescribe but a little bit lighter, and I like it, because I can use it with a Moleskine notebook, which I also love. But again, not endorsing.

**MATTHEW McCORD:**

#notsponsored.

**TERESA GODDARD:**

I can't say for sure if it will work for you. I did pay full price, I should say. (All laughing).

**TRACIE DeFREITAS:**

Excellent, okay, thank you. All right, unfortunately that's all the time we have today. Teresa and Matt, thank you for your AT insight. We do appreciate your time and your expertise. For additional information on the topics shared today please do contact JAN. You can go to AskJAN.org to contact us using email, live chat, or by phone. You can also follow us on Facebook and Twitter, of course.

Thank you to Alternative Communication Services for providing captioning for this event today.

And finally, as mentioned earlier, an evaluation form will automatically pop up on your screen in another window at the end of this event. We appreciate your feedback, so we hope you'll share it with us. And to complete that evaluation, keep the JAN webcast window open when the webcast ends. The evaluation will pop up when that closes. Also, in order to get your CEU for the event you will need to go ahead and complete the evaluation. You'll get that code afterwards.

Thanks for attending this JAN Accommodation and Compliance Web Series event. This concludes today's training.