**Audiology Simulation Resources
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DeRuiter

Hello, and welcome to CAPCSD’s video webinar on Audiology simulation resources. We know that many of us have been forced to move forward in directions that may be entirely new to us for Audiology education. And I'm excited today to be talking with Dr. Tammy Fredrickson, Clinical Associate Professor at University of Colorado Boulder, as well as Dr. Elaine Mormer. Elaine comes to us as Associate Professor at the University of Pittsburgh. And, I kicked this off by saying many of us are kind of thrown into things. Tammy, tell me about your experience with simulation prior to Covid-19?

Frederickson

Um. Not much. Which I suspect is like a lot of us. You know, I've got to be honest though, simulation is something that I've been fascinated with for a while, and I've been kind of jealous of the fact that SLP programs have seemingly a lot of options for simulation that I always felt like Audiology just didn't really have. And. now we're kind of forcing our hand a little bit here not necessarily a bad word.

DeRuiter

Yeah, we're going to grow and change as a field in so many ways. What about for you Elaine?

Mormer

Yeah, I would say that we used a very little amount of simulation in our program for training in terms of using simulated audiometers. First through the Parrot system, and then more recently through the Brigham Young University virtual audiometer system. But beyond that, not much.

DeRuiter

And you know, I think that's I can see how maybe for some they'll think, “Really?” and others may think, “Wow that's comforting right to know that many of us are becoming overnight experts on these things.”

And, what I noticed with the Audiology higher ed community right away was there were lots of grassroots efforts across some different platforms and people sharing resources and working to create resources. And so, Tammy your name had come up so many times when I was looking at different feeds and responses and so it really got me enthused to just bring you on today and have you tell us a little bit about the resources that you're aware of out there. So I'd love to have you take it away.

Frederickson

Right, happy to be here and there's more out there than I thought there was I've got to admit.

2:59

I always think it's a really good idea to start, though, at the very beginning and CAPCSD has a great resource on the website about best practices in simulations. And it's a fantastic read for those of us are who are having to dive into this. Another fantastic resource that I know Carol Dudding has referred to is this International Association for Clinical Simulation and Learning. They have some wonderful best practice guidelines for those of us who are kind of embarking into new territory here.

3:32

There's a couple of groups on Facebook that I found to be Fantastic resources as well. One is the Cheers to Ears and No Tears Best Practices for AuD Faculty. It's a fantastic group of people from across the country and across different AUD programs. And, people have really come together to not only seek support but also to seek resources. And again, it's been a fabulous group. Another one that I found is this Higher Ed Learning Collective. It actually was founded right after everything started - that all these universities were going to online-only teaching and this group is actually made up of higher ed professionals in disciplines- all - I mean anything you can think of - as well as universities from across the country. And even some from across the world. So this I have found fantastic in terms of learning about new technology that's out there that we can bring in and use with our students as we're working on simulations. Again, both of those are on Facebook, but…

DeRuiter

Yeah, thanks a lot. I noticed those out on Facebook and it's interesting. You mentioned Carol Dudding's name.

Frederickson

Yeah

DeRuiter

For those who have reached this podcast and maybe haven't seen there are two other podcasts through CAPCSD both with Carol as a guest speaker. Really going all the way back on simulation. So, if this is all brand new to you we certainly invite people to listen to this podcast, but also the two that preceded - that you can find on the Council's website.

Frederickson

5:15

Yeah, so I'm going to just going to move in to some virtual audiometers or audiometers simulators. There's a link on each of these pages as well as the screenshot to help give folks just a little bit of an idea of what they'll see. This is the simulator from the BYU folks that Elaine actually mentioned that some of the people in her program are using. And, it does have a cost associated with it. It has both student and instructor. It is capable of doing air conduction, bone conduction, masking, speech audiometry as well as tympanometry, which is a unique thing. I don't know of any other audiometers simulators that include tympanometry. So, this is a little something different.

6:05

Another one is AuD Sim. And, I think this is one that a lot of people seem to have at least heard about in some way shape or form. It's fairly inexpensive, but there is a cost associated with it. It does do air conduction, bone conduction and masking. There are some different modes, which is actually pretty useful. The threshold assistant mode is used more for early students. Just learning about audiometry and how to obtain pure tones. There's a practice mode, assignment mode, and even an exam mode. So, that may be something that some folks are interested in.

6:44

Another option. This is a free option. Counsel Ear is better known as a practice management solution with billing and notes and all of that. But they actually have on their website this simulator. It's pretty simple, but it's free. It does air conduction bone conduction and masking. Another one here that I found online is free as well. It's a little kind of rudimentary but it does air conduction bone conduction and masking. There's one that I forgot to put up here and I don't know how I forgot it. But Otis is another one. Otis is a virtual audiometer that does have a cost associated with it, too. So that may be another one that folks want to look into is Otis.

7:35

Another simulator. This one I learned about only a few weeks ago, is the simulated ABR program. There is a fee of available with it or for it. But there's a trial version that is free, I should say. This actually is capable of simulating ABRs for infants or adults. You can make a lot of adjustments yourself to everything you see on the screen. Really. What, what frequency are you testing or you doing air conduction bone conduction? What is the rate of presentation? There's a lot of adjustments that you can make. There air conduction, bone conduction, tone bursts, clicks. There are student and instructor versions. These are waveforms that I created on it yesterday. So is that a real view of it from yesterday.

DeRuiter

Tammy I'm just hearing you talk about, you know, instructor versus student versions. From what you're seeing with these, are the instructors able to get in free and and take a run at these as they make decisions? Ordo know with many of them the instructors always free?

Frederickson

That's a great question. It depends on the program. It does seem like some of the programs are offering trial versions for instructors. So at least you can get a taste of it. Others don't. Some of the instructor versions what it's really doing is allowing the instructor to enter their own patients, right? So their own parameters for those patients versus the student versions really don't do that. And typically if there's a student and an instructor version it means that you as an instructor can actually create assignments students can then have to turn them into you that sort of thing.So it gives a little bit more flexibility on the the instructor version that the the kind of straight out versions don't do.

DeRuiter

All right. Thank you.

Frederickson

Hmm. Hmm.

9:34

This is another ABR simulator. It also does OAEs. There is a cost associated with it. And one thing to consider for something like this is - the baby that you see in the picture there - you need to be with him and the equipment. So this is something that while it's a simulator you do have to be there physically with the baby. So that at least right now is a limiting factor in the sense that I know at our University. We can't ask students to go in and do work or go practice on our equipment so we wouldn't be able to use something like this right now, but it is something that's out there as a simulator and can be useful.

10:18

Another one that kind of falls into that category - in the sense that you need access to some of these materials in order to use it - is Oto Sim. And so, this is for otoscopy practice and there are instructor and student versions and the student can practice using the device they can also go into an exam mode. So again, something that's a little unique there because of that instructor version.

Obviously, there's a cost associated with it. And again, it's not something you could do remotely. You do need to be with the equipment in order to use it.

10:54

Another tool for simulation is CARL. CARL is a head and you can use CARL for things like real ear probe tube insertion hearing aid insertion can use the ears themselves to practice with cerumen removal if you wanted to, or earmold impressions as well. There is a cost associated with CARL. And again, this is one of those things that's not available to be used remotely. You've got to be there with CARL to really use him. So, again, for some folks right now. This may not be a tool that they could use.

11:33

Going to move into some other options online, that are a little bit different. InterAcoustics has this virtual clinic. It's free. And, the feedback I've had from students who've done this was that they had a lot of fun doing it - which everybody likes their students to have fun and actually learn something. So that's always good. But when you go to the website, there's actually a handful of different patients there and the student can choose which patient they're going to see and then they work through these various steps. And it's pretty darn thorough, and again, students have been telling me they've really enjoyed it. It is free, but there are only about five patients in there and available right now.

12:17

Master Clinician Network is something that I think a lot of us have heard of. It's more commonly used in Speech-Language Pathology programs, but it does have some Audiology cases. Master Clinician Network is free for instructors or faculty members. So, that is something to keep in mind. When I was clicking through the different cases here, they were pretty much all adults and hearing aids. So again, it's pretty limited, but there are at least are some Things there that are potentially usable.

12:51

Simucase is similar to Master Clinician. A lot of simulation cases commonly used in SLP programs. There are some Audiology cases and, again, for faculty members. It's free. There is a fee for students to use it.

13:12

This has been a site that's come up a lot in those online forums. This is the AuD Sims site. Terry Hamill has put together a lot - and I mean a lot - of case studies here that are available for folks to use its free for students and for instructors. There is a study guide available for instructors.

13:36

You just follow the instructions online to get that guide and again, there are I would guess maybe even a hundred cases here on this site that people can use. So a great resource.

13:51

The Ida Institute is another fabulous resource. They have a lot of different videos and role-playing scenarios. A lot to do with tinnitus and tinnitus counseling, Aural Rehabilitation, family-centered counseling, those sorts of things. It is free. Again. it's a - it's a - wonderful resource for both instructors and for students.

14:19

And this is one that came up through that Cheers for Ears group on Facebook. A lot of us commiserated when everything suddenly changed and we couldn't work with our students in the clinic anymore. And we're all wondering what are we going to do? So, we decided to work together and put together this: it's a folder on Google Drive that is shareable.

14:44

We're happy to share it with folks and we've tried to kind of divide things up into subjects - different subjects - and then add activities or cases or whatever it may be that folks across the country are putting together. So, kind of a repository of sorts that anyone from any AuD program could come in and utilize some of these different tools. I would love to see more people contribute to this. So, don't only think about using the materials that are here, but also consider contributing your materials to this. And, Mark, I think that's the last one I've got.

DeRuiter

Yeah, that looks like a great resource and especially as people come up with creative ways to move forward if they're willing to share the sharing is going to be just so critical, I think. I was, a couple of things really spoke to me here the options that you went through, you know being all online but others requiring equipment where students would need to come to campus but could still engage with simulation. And what's kind of popped for me was - I saw a great article this morning.  I don't know how many of us have read it yet. But the Inside Higher Ed had an article on 15 different ways that we may see universities come back for learning. And, I have to admit I didn't think of all 15 my own (laughs). But it was very interesting to think of the fact that we may be limited with how many students will be in a space at a given time. And so, this thought of being able to engage some students in an area with simulation and maybe others with different types of activities - either inside or outside of the building could create some economies for us. And so, it's a very - we all are going to be coming on interesting times where, as the models roll out, the more we can share I think the better off we can be versus each of us inventing a different wheel at our institution. Thank you for that. .

Frederickson

Hmm. Hmm.

DeRuiter

Yeah, so and then I think the other big thing for us to keep in mind is just cost and how that works right for our students were cesare programs.

Frederickson

Right? And I think that's one of the hard things we all know that our universities are going to be affected monetarily with all of this. And so, some of those things that are a little bit more expensive aren't necessarily as accessible for us all. So, it's good to know that there are some nice resources out there that are available at no cost.

17:51

And again, if we all work together to help develop some some fabulous resources. I think that would be a wonderful step forward too.

17:56

DeRuiter

Yes, I think so, and I certainly appreciate the work that goes into setting up a space for people to both share and, and borrow what might be helpful for them. So, thank you very much. I appreciate your time today.

I want to turn to Elaine - and I know, Elaine, as you mentioned when we started you had some experiences but also still getting into things - and, so I'm curious you've got standards pulled up here and I am curious maybe to have you kick us off a little bit for students who are interested in obtaining the Certificate of Clinical Competence. What, what things look like right now in terms of any modification to standards? So, Elaine I’ll let you take it away and then share more resources from what you've implemented.

Mormer

Sure. So I think you've already brought up some really interesting points about what this is costing us in terms of financial burden both to programs and to students. I would say that as administrators what we have to first do as is to look at what are the guiding documents that the tell us what we can do that's within the practice that will meet criteria for certification for accreditation. So, with my very little bit of experience in simulation, when all of this happened, I immediately went to the standards. And again, both for certification and accreditation, and I noticed that there were standards that describe simulation for the SLP programs.

19:59

But within the audiology standards, specifically, there was nothing that really clearly delineated what was simulation and what was - what could be counted for hours and how it was defined. So so after a little bit of communication with the CFC see about that, I was really happy to see that on April 1st they approved a temporary expansion of the simulation definition. And I will just point out that that right now that is approved through August 1st, and we'll see if it gets approved further, but I found this to be extremely helpful in thinking about what we would how we would lay things out in our program.

So, and what really struck me here that they added into this standard was the idea that case discussions could be counted as clinical simulation hours. And they described it very specifically saying that they’re case discussions where the student is asked to make evidence-based recommendations for procedures to predict and analyze results and to make evidence-based recommendations – and - going on to say that they could be live or that responses could be written. So, that was really helpful to me. I put the link to this on this slide because there's - at the site where the where this information is hosted - there's a lot of detailed information that really describes what simulation is and what these cases should look like and I used that to go ahead and essentially draft some guidelines for our program so that we could begin to implement these simulations right away. So, to me that was having to start with - some guide- some guidelines and policies that we as a program agreed upon was really critical. And then, our steps were really to just communicate with all of our clinical instructors (in my case in our case that included our off-campus sites) where we were very, very fortunate to have clinicians in our community- mainly at our Medical Center - come on board and say, “Yes, we’ll work with the students and we’ll create virtual cases based on data from our actual patients. And, these clinicians were working at home, but they had remote access to their electronic medical records. And so, we got together and between our own in-house faculty and those folks in the community, just became almost a community of… about building virtual cases. So we did some training sessions we created this virtual Clinic toolkit that has all of the documents that these folks needed to create the cases and to work with the students. We worked together - or we continue to work together - using the Microsoft teams. So, we have all our documents in there, and we have meetings in there and that was very useful and we right away got started. I will say that on this slide:

23:31

I have a link to a PowerPoint training session that we created for our own in-house and community clinicians for both creating the cases and working with the students. And, I put the link there if folks are interested in seeing that it's about 10 minutes long, but really gets to sort of the meat of how we define simulation based on becoming an expert in about a day and a half.

24:00

DeRuiter

Yeah, thanks for that. I understand, you know the the timeline and the crunch you were under to get these things done. And so it you've gotten a lot done here. And one of the things I think that's important is as you walked us through kind of the how - and thinking about standards in this case, and of course the standards you've referenced are from the Council for Clinical Certification through ASHA and – and - for anybody listening if you have specific questions, you would certainly want to contact the Council directly. If, if there's something you're not sure of the cause we're unable to advise on something like that for you. But, seeing this work Elaine is really fun and exciting to see what all you've done.

Mormer

Yeah. Well again, it takes a village. In my case, I brought to share two different templates that we've been sharing with our clinical instructors. The first one was created by Catherine Palmer. It's a very simple template of a - of - and we call these we call these dynamic case studies.

25:17

And so this was the first template she created and basically it just walks the clinician through the process of creating the case and then working with the students and really prompting the clinician to prompt the student how to answer questions how to think about what kind of information you would need for the case history. And then when you get some data from the case how you interpret it and what other data you might want to collect, and how would you collect that? And then how would you treat it? So, these cases end up really prompting the students to do a lot of very deep-thinking. So, this was one template - again by Catherine Palmer. And then I also included in here an example of a very interactive case template. This one, all the credit for this goes to Molly Harding. She's at Arizona State University. And she created this template this this is one particular case. But her - she has a slide deck - it's very interactive and has links where students actually can choose a path they’re going to go down with the case. So, she calls this “Choose your own Audiology Adventure.” It begins with an actual case history and then really walks the clinician and the student through what you should do next. Are there other important case history items? Are there special techniques? And then what's really neat is that in her template she's got links. So, everything that's underlined is an actual link that the student can choose.

26:58

It's very much like Simucase and so it branches out into different possibilities and then the student gets feedback depending on the possibilities that they that they have chosen. So, I thought I'd just show you a couple of examples of what that looks like and she's been very generous in sharing it first with us and now sharing it with all of you.

27:24

And then I just wanted to give you a little bit of feedback that we've gotten. We've had 24 students so far spend the last - give us feedback - on their last guess it's been four weeks of simulation. I picked out a few points I thought were interesting.

27:42

The first question was whether the simulation experience helped the student to apply knowledge to practical application. And we can see that most of the students agreed that it would. And certainly the students that are undecided or disagree. I think we all need to be considering the students’ perceptions of what's happening right now and how this is going to impact their clinical skills and their clinical experiences. So, I don't think by any means we expect that every students going to agree that this is the best thing on earth. For another question, I chose to show you the students were prompted : “I can use what I learned from the simulation in clinical practice” and there was some good agreement there as well.

28:33

We asked, we had some open-ended questions and asked what aspect of the experience was most helpful. And I thought it was really revealing after looking at the students open-ended responses that the central and largest response here was “instructor” which you see in the middle of the slide, which means that they were referring to the instructor more frequently than anything else. And, from the comments from the it's what I really took away was that the way the instructor interacted with them and the time that the instructor spent with them really had the biggest impact on - whether they felt like they were learning whether they enjoyed it. It taught me that I don't think that students appreciate as much to be given a case to go off and work on on by themselves and then come back and talk about it, but that they really appreciated when the clinicians were literally with them on the case. Although that was virtual, you know through a remote connection, but it seemed like the more time they spent with a clinician the more they feel they got out of it.

29:45

So that's where we are.

DeRuiter

That's really interesting - the - so the students that you surveyed - I think you said there were 26 - for the

Mormer

Yeah 24 responses

DeRuiter

24 what level were those students at?

Mormer

So this was a cross first second and third year students and I haven't pulled out the responses. Yeah be interesting.

30:12

DeRuiter

You know, I wonder if and, I don't know, but if our students earlier in their program, they appreciate these cases more than students who are later in their programs.

Mormer

That yeah, I I'm going to suspect that that's the case as well. I don't have those data but I suspect that's the case. The first years were very vocal about how much they enjoyed it. Some of their comments were actually again, I don't that was in a conversation. I had with first-year students, but the comments in the survey were, you know, “I may not be able to follow a patient from beginning to end in the real world, but I could through simulation” that was positive.

30:55

DeRuiter

Yeah, that's very positive. And I think when we think of a student learning at that level of first-year, the one thing about this is we've created that safety net where they really can work through and talk through how to engage with the case.

Momer

Yes, and I will tell you at least in my program. We've pretty much made the decision - based on how strong how positively the first years have responded to this - that we're going to include some level of simulation, even when we're all allowed to be together in the same room.

31:33

DeRuiter

Sure. Yeah, and I think you know this - and Tammy you had mentioned it too- I forget relative to to which activity but there are activities that our students do seem to enjoy and it seems like that that next space for our discipline is to have that better research on what do they enjoy and how much do they learn with given activities. And, and we certainly are being nudged in a direction where we could start better data collection, I think, on what these experiences mean, I'm multiple level.

Mormer

Right. Right. I think it's been interesting. We got feedback from the clinical instructors as well, which we’re just starting to look at and I will tell you that they seem to really enjoy it.

32:25

DeRuiter

Sure, and I can imagine you might enjoy the pace of it to compared to a regular clinic day where you have a little more time with these cases. So, indeed. yeah, so this is great. And I think you know as, as a listener, I see this as the tip of the iceberg right?

32:47

There are so many other directions we can go. But certainly, this is so helpful as people search for resources and look for what might work for them in the coming months. Tammy, do you have any other thoughts here you'd like to share as as we consider signing off today?

Frederickson

I just I'd like to underscore what Elaine just said is that the students do seem to enjoy it.

33:20

Even our third years have really enjoyed it, but we've also kind of differentiated responsibilities so that the - we're having some of the third years actually helped me develop cases and to help facilitate some of the debriefing. So, taking on a little bit more of a leadership role. And I wholeheartedly agree that these are activities that the students seem to be learning from, it be great to have data about that, but they're reporting that they really enjoy it. And so, keeping these things in motion as we move forward is an exciting idea.

33:55

DeRuiter

Thank you. And Elaine any other final thoughts that you've got?

Mormer

I think, I think it's been a really terrific experience to see our our community of audiology educators and audiologists come together around this need to continue clinically educating our students. And, and I think we can we can all just use that to keep going on. I've been seeing reaching out to alum to help with the clinical simulations and I think it's I think there is some pos- some positives that have popped up - and really that's how you started. I think by talking about how the community has come together, but I think we can all help each other and just continue to help each other and we're all learning and growing and being flexible.

34:51

DeRuiter

Yeah, I really appreciate that. And that is really the where the kernel here of the idea to bring this together was seeing so much great activity. And how do we talk about it all in one space? And, granted we can't get to every single thing. But how do we have conversations about it and move it forward and make sure we're all on the same page? I really appreciate the time both of you have shared with us today.

35:21

The Council is working on podcasts, webinars. We are working to move forward some of our sessions that were scheduled for our Conference that was canceled in April. And so, we're doing many different things to support programs and really reaching in to our members to help us move the knowledge forward and create this space where we can all be as comfortable as we can be right now. So, on behalf of the Council, I thank you for your time today. Tammy and Elaine, and I think our listeners and wish you well, and we hope to see you again soon with even more information. Have a great day.